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International trade and investment liberalization, corporate power and non-communicable disease prevention policy: A case study of nutrition and alcohol policy non-decisions in South Africa

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Thesis submitted in accordance with the requirements for the degree of
Doctor of Philosophy at the University of London

August 2021

DEPARTMENT OF GLOBAL HEALTH AND DEVELOPMENT
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This work was funded by The Wellcome Trust [203286/Z/16/Z]

DECLARATION BY CANDIDATE

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Penelope Milsom, 16/08/21

ABSTRACT

Introduction: Understanding how corporations can use trade and investment agreements to constrain public health policy action has been of growing concern over the past decade. However, few empirical studies have adopted a political economy approach to understand how trade, health and corporate actors' strategic responses to trade and investment liberalization may affect health policy decisions, particularly in low- or middle-income country settings. Further, although power analysis is increasingly recognised as essential to understanding public health policy processes, trade and health research has largely not engaged with theories of power. This PhD therefore aims to apply an integrated political economy and power analysis approach to understand how corporate power – visible, hidden and invisible – linked to the international trade and investment systems influence non-communicable disease (NCD) prevention policy (non-)decisions in South Africa, with a specific focus on nutrition and alcohol policy.

Methods: A conceptual framework for analysing power in public health policymaking was constructed and two realist reviews of existing literature were conducted to map current evidence of how the international trade and investment systems facilitate corporate power in health policymaking. In-depth semi-structured interviews were then conducted with 39 stakeholders. Thematic analysis and qualitative system dynamic modelling (SDM) methods including purposive text analysis, model-building and validation were then applied to this interview data.

Findings: Trade liberalization has stimulated government's focus on export-driven value-added economic growth, facilitating food and alcohol corporations' instrumental and structural power in NCD prevention policymaking. While corporations attempt to capture discursive power, it also emerges through deterministic mechanisms where internalization of the neoliberal paradigm generates policymaking norms that often prioritize economic/trade interests over health. No evidence was identified of corporations using South Africa's bilateral investment treaty obligations to generate a chilling effect on nutrition and alcohol regulation. However, food and alcohol corporations' power to promote NCD prevention policy non-decisions has been enhanced by international trade agreements.

System modelling illustrates significant inter-connectedness between the various mechanisms of power linked to trade and investment liberalization in diet-related NCD prevention policymaking. Feedback structures entrench existing power relations over time, preventing transformative policy action. Key leverage points to promote more progressive and cohesive NCD prevention policy action include capacity-building and increased co-ordination across government departments; shifting evidential requirements from health actors to corporations; requiring corporate actors to internalize the health costs they generate; reducing the social acceptability of corporations/products; and promoting an alternative to the neoliberal paradigm.

Conclusions: By integrating political economy and power theory, this research contributes a new approach for analysing power in health policymaking. The empirical findings of this research suggest trade and health academics and advocates should move beyond a narrow focus on trade and investment rules/agreements and increase their attention to the system of power in health policymaking that is generated by neoliberal policy, including trade and investment liberalization, enabling corporations to prevent progressive action on NCDs. Methodologically, this work provides useful insights into the benefits and challenges of using qualitative system dynamics modelling to enhance understanding of public health policymaking.

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ACKNOWLEDGEMENTS

Completing this PhD would not have been possible without the teaching, mentorship, friendship and support of many people. Firstly, I would like to thank my supervisory team for offering me the best academic guidance I could have hoped for. To my primary supervisor, Helen Walls, I can't thank you enough for the consistent advice, support and encouragement you have offered me throughout. Thank you for always being available to meet, listen and talk through any issues or challenges and for suggesting new approaches or paths forward when I've hit road blocks along the way. Thank you for all your technical and academic guidance, supporting me to expand my understanding of the broader structural, political, and commercial determinants of health, and of course for always providing such constructive and timely feedback. An enormous thank you to my second supervisor, Richard Smith for the time and quality of supervision you have given me. Thank you for keeping me on track and moving forward and for always providing such helpful and rapid feedback. Thank you for sharing many words of wisdom that have helped develop my academic skills and craft, for helping me see the wood for the trees and for always bringing a little humour to each of our meetings over the past four years.

I would like to thank Lucy Gilson for your much appreciated assistance during my six months in South Africa. Thank you also to Moeketsi Modisenyane for your support during data collection and for your insightful feedback on the South African case study work and to Phillip Baker for your much valued feedback on the realist reviews. To Andrada Tomoia-Cortisel, a huge thank you for teaching and supporting me to develop the understanding and skills to apply system dynamics modelling methods in my work.

Thank you to Judith McCool for first introducing me to the health equity implications of the international trade system. Thank you Miriam Laugesen and Jeanne Stellman for supporting me to pursue this PhD. Thank you to David McCoy for your mentorship, giving me the opportunity to develop my teaching skills, and showing me how it is possible to combine both academia and activism.

Thank you, Freddy for believing in me, unconditionally loving and supporting me and for sharing this journey with me. I could not have done it without you. Thank you Viggo for being such a joyful diversion from the PhD... and for forcing me to work efficiently! Thank you Mum and Julia for your love and support.

Finally, thank you to all the individuals who've trusted me as their doctor or their child's doctor, you've kept me humble, grounded and motivated to pursue research that attempts to contribute in some small way to supporting the realisation of health equity and social justice for all.

ABBREVIATIONS

BAT	British American Tobacco
BIT	Bilateral investment treaty
CETA	Comprehensive Economic and Trade Agreement
CLD	Causal loop diagram
CPTPP	Comprehensive and Progressive Trans-Pacific Partnership Agreement
CSO	Civil society organization
CST	Critical System Theory
DAFF	Department of Agriculture, Forestry and Fisheries
DH	Department of Health
DR NCD	Diet-related non-communicable disease
DTI	Department of Trade and Industry
DSD	Department of Social Development
EC	European Commission
EU	European Union
FCTC	Framework Convention on Tobacco Control
FDI	Foreign direct investment
GATT	General Agreement on Trade and Tariffs
GATS	General Agreement on Trade in Services
GDP	Gross domestic product
HFCS	High fructose corn syrup
HHC	Health harmful commodity
HIC	High-income country
ICSID	International Centre for Settlement of Investment Disputes
IAs	International investment agreements
IGO	Inter-governmental organization
ISDS	Investor-state dispute settlement
LMIC	Lower- and middle-income countries
LSHTM	London School of Hygiene and Tropical Medicine
MMT	methylcyclopentadienyl manganese tricarbonyl
NAFTA	North Atlantic Free Trade Agreement
NCD	Non-communicable diseases
NDP	National Development Plan
NEDLAC	National Economic Development and Labour Council
NGO	Non-governmental organization

PMI	Phillip Morris International
PTA	Purposive text analysis
RAMSES	Realist and Meta-narrative Evidence Synthesis: Evolving Standards
RCEP	Regional Comprehensive Economic Agreement
RTA	Regional trade agreement
SDH	Social determinants of health
SDG	Sustainable Development Goals
SDM	System dynamic modelling
SEIA	Socio-economic Impact Assessment
SMM	Shared Mental Model
SPS	Sanitary and Phytosanitary Agreement
STC	Specific trade concerns
TBTC	Technical Barriers to Trade Committee
TIA	Trade and investment agreement
THCC	Transnational health harmful commodity corporation
TNC	Transnational corporation
TPPA	Trans-Pacific Partnership Agreement
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
TTC	Transnational tobacco company
TTIP	Transatlantic Trade and Investment Partnership
UCT	University of Cape Town
UK	United Kingdom
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNICTRAL	United Nations Commission on International Trade Law
UPF	Ultra-processed foods
US	United States
WHO	World Health Organization
WTO	World Trade Organization

1.1 INTRODUCTION AND RESEARCH RATIONALE

Globalisation has meant that influences on health increasing lie outside national borders and beyond the health sector, including in the realm of the structural and political determinants of health (1). The instruments of international trade and investment liberalization, including domestic trade policy, international trade and/or investment agreements and institutions, function as structural determinants of health, affecting the distribution of power, money and resources both within and between countries (2-4). These instruments also shape, and are shaped by, the political determinants of health; defined as the norms, policies, and practices that arise from global political interaction across all sectors that affect health (1). Structural and political determinants in turn, condition and constrain the social determinants of health (SDH), defined by the World Health Organization (WHO) as ‘the conditions in which people are born, grow, live, work and age’ (4), which may include, for example, income, employment and working conditions, education, food and nutrition security, access to health-services and medicine, and the natural environment (2). While global trade and investment liberalization is not intrinsically unhealthy and widely recognised to bring potential benefits (5), the significant risks it poses to health (via a complex set of pathways) are increasingly evidenced (2, 6, 7). These risks may disproportionately impact lower socio-economic groups and those living in low- and middle-income countries (LMICs) (7, 8). For example, consider the cases outlined in Box 1.1 below.

Box 1.1: Examples of potential health risks of trade and investment liberalization

Low-income countries have recovered no more than about 30 cents of each lost dollar of import tariff revenue resulting from massive tariff reductions associated with trade liberalization (9). Where countries lack the capacity to tax non-trade activities, tariff reductions have the real potential to compromise public health expenditure (10, 11).

Thailand’s openness to trade and investment has led to the entry of transnational food corporations and marketing agencies into the market (12). In 1985 when Pepsi-Cola’s Frito-Lay first entered Thailand, per capita snack consumption was relatively low despite an already large number of domestic manufacturers (12, 13). Frito-Lay embarked on an intensive strategy to increase consumption including product innovation to appeal to local taste and intensive targeted marketing campaigns (13). Their share of the total snack market grew from the low single digits in the mid 1990s to 30% by 2003 (14) and their sales more than tripled from 1997-2002 (15). Frito Lay also stimulated its competitors to adopt similar strategies and total snack sales grew particularly rapidly during 1999–2004; potato-chip sales for example increased

by 63% during this time (14). Obesity in Thai adults has increased from 13.0% in men and 23.2% in women in 1991 to (16, 17) to 37.5% and 32.9% respectively, in 2014 (18).

During a rapid period of liberalization after the fall of the Soviet Union, Uzbekistan's domestic tobacco company was privatized in a deal with British American Tobacco (BAT) in 1995. However, the company delayed completing its investment (the largest single source of FDI into the country between 1992 and 2000) until a proposed ban on tobacco advertising and smoking in public places and health warnings on packages was replaced with BAT's voluntary advertising code, and cigarette excise tax rates were reduced by 50% (19-21).

In 2010 Phillip Morris International (PMI) sued Uruguay for US\$25 million under a bilateral investment agreement (BIT) with Switzerland through the investor state dispute settlement (ISDS) system, for their regionally precedential regulation that health warnings cover 80% of a tobacco product's packaging (22). While the claim was ultimately dismissed (23) after a six year-long arbitration process, Uruguay's government acknowledged it was only able to defend itself against the challenge after receiving support from Bloomberg Philanthropies to finance their legal team (24-26).

In 2020, South Africa and India, co-sponsored by nine other LMICs, proposed a waiver on certain intellectual property rights included within the World Trade Organization's (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) that aimed to allow countries to choose not to enforce, apply or implement patents and other exclusivities that could impede the accessibility and affordability of COVID-19 technologies including diagnostics, therapeutics and vaccines until global herd immunity is reached. The proposal has however so far been blocked by a number of high-income countries (HICs), particularly the US and various EU countries where large multinational pharmaceutical companies are domiciled.

As the cases described in Box 1.1. demonstrate, trade and investment liberalization has also meant that health outcome and inequities increasingly result from transnational activities involving actors with different interests and degrees of power (1). Alongside states, transnational corporations (TNCs) are central actors in the trade and investment policy space. They are participants in the negotiation of new agreements, beneficiaries of trade and investment provisions that facilitate the spread of the health-harmful commodities (HHCs) they produce, and can use provisions and legal mechanisms as instruments to challenge domestic measures that seek to regulate such commodities (3). Moreover, trade and investment liberalization has increased the structural power of TNCs where governments are constrained or motivated to act in ways that

safeguard or promote business interests at the expense of public health, in order to retain or attract future investment (27) and expand their own exports, including of HHCs.

Realisation of the broad and universal Sustainable Development Goal (SDG) Agenda (28) – which includes health goals for all ages, for communicable disease, non-communicable diseases (NCDs) and emerging disease burdens from pollution – is therefore as much a political challenge as it is a technical one. This thesis takes the position that power asymmetries between actors, facilitated and entrenched by the modern global trade and investment system limit the range of policy solutions considered and constrain the trans-sectoral and system level action on health inequity that is necessary to achieve the SDGs (1). Power asymmetries generate and are reinforced by the political determinants of health that operate in various ways. Dominant ideas shape how problems are viewed and limit the types of solutions considered, generating policy norms over time; powerful actors usually decide the rules of ‘representation, voting transparency and accountability’ determining who participates in decision-making; and the outcome of governance processes including trade and investment agreements, shape practices and policies at the national level (1). Therefore, effectively tackling the ways in which the international trade and investment system impacts health, requires a more rigorous analysis of how power is expressed by different actors to shape the political determinants of health.

Given the breadth of the impacts of trade and investment liberalization on health and health equity, an NCD prevention policy lens was taken to narrow the scope of focus for this thesis. Within this area, for the two realist reviews conducted in the earlier stages of this PhD (and presented in Chapters Four and Five) I included tobacco, nutrition and alcohol policy to ensure I captured as much evidence as possible of how trade and investment liberalization may shape power dynamics and relations in NCD prevention policy processes and decisions. However, to allow for in-depth empirical analysis, nutrition and alcohol policy were selected as the specific focus in the empirical work (presented in Chapters Six to Nine) after consultation with stakeholders in South Africa indicated that research in these areas would be of most value to local policymakers and health advocates.

NCDs currently cause more deaths globally than all other causes combined and were responsible for more than 38 million deaths in 2012, over three quarters of which occurred in LMICs (29). Approximately 42% of deaths occur ‘prematurely’ before the age of 70 and 82% of all premature deaths occur in LMICs (29, 30). The four major NCDs (cardiovascular diseases, cancer, chronic respiratory diseases and diabetes) are responsible for 82% of all NCD deaths and share four common behavioural risk factors: tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol (30). Further, there is increasing evidence that exposure to these risk factors throughout the life-course has deleterious effects, with exposure in childhood and adolescence significantly affecting chronic disease risk and health outcomes later (31).

Tackling NCDs is recognised as critical to achieving sustainable development. To achieve Target 3.4 of the SDGs- to reduce premature mortality from NCDs by one third by 2030 (32)- there have been repeated calls for government leadership and policy action that moves beyond individual 'lifestyle' or demand-side interventions and towards addressing the multiple structural drivers including in agriculture, trade, investment, public policy and marketing (12, 30, 33-35). However, guidance on how to address NCDs frequently undergo 'lifestyle drift' where structural causes are acknowledged but recommended actions tend to drift back to targeting individual behaviours and lifestyle choices (36). With the exception of tobacco, the vast majority of governments have failed to adopt the trans-sectoral policy action necessary to adequately reduce exposure to unhealthy diets and harmful alcohol use. This thesis seeks to engage with the structural and political determinants of NCD policy inaction, more specifically it aims to analyse how the trade and investment system facilitates corporate power in NCD-prevention policymaking relating to health harmful commodities with a focus on ultra-processed foods and alcohol.

South Africa was selected as the context for in-depth analysis due to a combination of political, economic and health characteristics that allowed for testing and potentially challenging the positions and theories proposed in this thesis. South Africa is a middle-income country (37) that underwent a relatively rapid period of trade and investment liberalization after the end of Apartheid in 1994. Since then, the country has been exposed to both trade disputes over public health policy and international investment-related disputes (although not specifically related to health policy). The South African government has also expressed concern that trade and investment agreements may restrict domestic policy space. Further, NCDs are a major public health concern in South Africa and like elsewhere, a number of NCD prevention policies in the area of nutrition and alcohol have yet to be adopted in the country. Together, these conditions made it a useful country in which to study how the trade and investment system may facilitate corporate power to prevent NCD-prevention policy action.

1.2 LINKING STRUCTURAL AND SYSTEMS-THINKING APPROACHES TO NON-COMMUNICABLE DISEASE PREVENTION

Much of the concrete guidance for action on NCD prevention relating to alcohol misuse and unhealthy diets (36, 38) has disproportionately shifted responsibility for health improvement away from governments and onto individuals (1). Yet, as mentioned above, it is well recognised that significant progress to reduce premature deaths from NCDs and achieve SDG target 3.4 requires action outside the health sector (1, 32). In response, there have been renewed calls to adopt a structural approach to NCDs that moves much further upstream to consider the 'causes of the causes', or the system-level drivers, creating environments that encourage NCD generating patterns of behaviour (39). The WHO-appointed Commission on Social

Determinants of Health developed one of the earlier frameworks conceptualizing a structural approach to health (40). The SDH framework describes how socio-economic and political context drives structural mechanisms that define individual socio-economic position within hierarchies of power, prestige and access to resources. This in turn shapes an individual's material circumstances (e.g., financial means to purchase healthy food), psychosocial circumstances (e.g., stress) and behavioural and biological factors (e.g., nutrition, physical activity, tobacco consumption and alcohol consumption), ultimately determining the distribution of health within a population. Importantly, the SDH framework recognises governance and macroeconomic policy as key structural determinants of health outcomes (40). A central tenet of this thesis is that the international trade and investment system, including institutions, policy, processes and norms, are key structural determinants of NCDs; a position well supported in earlier work (3, 39).

Moreover the Commission on SDH recognises that any effort to address health inequities will require a redistribution of power, including at the structural level, mediated through economic and political institutions (40). However, attempts to promote such action will inevitably face resistance from powerful actors. This is evident in the absence of action to address the impacts of trade and investment liberalization on NCD prevention, despite wide acknowledgement that such action is necessary to prevent NCDs. The 2006 World Health Assembly's resolution on trade and health, calls for engagement with trade policy-makers to 'take advantage of the potential opportunities, and address the potential challenges that trade and trade agreements may have for health' (41); the renewed UN Political Declaration on NCDs in 2018 recognise effective NCD prevention requires trans-sectoral action including in trade (30); and various calls for healthy trade policy have been made by experts (42-44). Yet very limited tangible progress on addressing the impacts of trade and investment liberalization on NCD prevention has been achieved. This research therefore seeks not only to understand what aspects of the trade and investment system affects NCD prevention policy development, but also to analyse how the system generates and facilitates powerful actors, specifically risk commodity corporations, to prevent trans-sectoral NCD prevention policy action.

Complimentary to a structural approach, this work also adopts a systems thinking perspective which considers both NCD outcomes and policy decisions as emerging from the dynamic relationships between components and actors across multiple levels of a complex system (45, 46). The utility of this approach for understanding NCD etiology and drivers/barriers to NCD prevention policy action, including the role of corporations, is increasingly recognized (47-49). While a structural approach focuses primarily on the causal linkages of factors across levels from the macro socio-economic and political context down to the SDHs and individual NCD outcomes, a systems thinking perspective emphasizes the importance of the interdependence and feedback between actors and elements across levels within a system. A such, a systems perspective conceptualizes NCDs not simply as the outcome of linear relationships between, for example, trade liberalization, product accessibility and consumption, but the result of the dynamic interactions

between different actors and elements across multiple levels (e.g. political, institutional and social) over time (40, 47). With this in mind, this thesis ultimately attempts to develop an understanding of the multiple interconnections between the global trade and investment system and corporate power and how these interact to generate environments that prevent trans-sectoral NDC prevention policy action.

The next section provides an overview of the key developments in the modern international trade and investment system, including the WTO, the proliferation of regional and multilateral trade agreements, and BITs and pathways linking trade and investment liberalization to health policy and outcomes.

1.3 THE INTERNATIONAL TRADE AND INVESTMENT SYSTEM

1.3.1 International trade liberalization and the World Trade Organization

After World War II, economic cooperation and trade liberalization were pursued by the US, the UK and allied nations to promote long-term peace and security (50). This resulted in the signing of the General Agreement on Tariffs and Trade (GATT) by 23 states in 1947 (growing to 123 states by 1994) which established rules of international trade and ultimately functioned as a provisional international trade organization for nearly half a century (51). During the GATT era, trade liberalization was achieved primarily through progressive tariff reductions on goods. It wasn't until 1995 that the Marrakesh Agreement was signed by 123 countries establishing the World Trade Organization (WTO) – an inter-governmental organization for negotiating trade agreements, establishing trade rules for progressive liberalization and resolving trade disputes via a dispute settlement system (52). The WTO also had a new overriding purpose of facilitating trade flow to achieve 'economic development and well-being' (52).

Importantly, the WTO expanded the scope of international trade policy beyond trade in goods (covered in GATT and the Agreement on Agriculture) to also cover trade in services (General Agreement on Trade in Services (GATS)) and intellectual property (Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)) (53). The WTO also expanded the depth of trade liberalization strengthening provisions to reduce non-tariff barriers to trade including technical barriers (regulations, standards, testing and certification) that are covered within the Technical Barriers to Trade Agreement (TBT) and the Sanitary and Phytosanitary Agreement (SPS).

The WTO also provided members with a state-to-state dispute settlement mechanism (covered in the Dispute Settlement Understanding) that can be used to ensure compliance with the obligations of the agreements (54). The dispute mechanism is used when one WTO member government considers another has adopted a policy or taken action that violates their WTO commitments (54). To date over 600 disputes have been brought to the WTO, many of which have been settled by consultation 'out of court' but over 350

have reached the full panel process (54). The Dispute Settlement Understanding sets limited time for resolving disputes of no more than a year (54). The permanent Dispute Settlement Body, composed of all WTO member states, establishes an ad-hoc 'panel' of three to five independent experts to consider and make a ruling on each case which can only be blocked by consensus amongst all WTO member states (54). Either side can appeal a panel's ruling based on points of law and appeals are heard by three members of a permanent seven-member Appellate Body who are experts in law and international trade, not government affiliated and serve a four-year term (54). If a 'defendant' government loses a dispute it must bring its policy in to line with the ruling and if it doesn't, it is required to agree on mutually acceptable compensation to the complaining state (54). If this is not agreed, the complaining state may retaliate (e.g. by blocking imports from the defending state) (54).

Longstanding concerns exist regarding the potential for WTO obligations to limit public health policy space (2, 6, 55) defined as a 'the freedom, scope, and mechanisms that governments have to choose, design, and implement public policy to fulfil their aims' (56), particularly given industry's influence in agreement negotiations. Of state-to-state trade concerns that have been escalated to the WTO dispute settlement process (or where threats to do so have been made), a small number have been in response to policies relating to alcohol, tobacco and medicines (57-61). A selection of examples are outlined in Box 1.2. Such disputes (real or threatened) also have the potential to generate regulatory chill where a government delays, compromises, or abandons the formulation or adoption of bone fide regulation in the public interest to avoid a costly and lengthy trade (or investment) dispute (62-64). Regulatory chill may occur in a single country directly threatened with a dispute or across a number of countries attempting to avoid a potential future dispute over a regulation that has been formally challenged elsewhere (65).

Box 1.2: Examples of WTO disputes relating to public health measures

WTO disputes were brought by the Dominican Republic and Honduras in 2012, and Cuba and Indonesia in 2014, claiming Australia's tobacco plain packaging legislation was in violation of TRIPS, the TBT and GATT. In 2018 a WTO panel, and subsequently in 2020 an Appellate Body, ruled that Australia's plain packaging policy was consistent with WTO law (66-69).

In 2000 the US filed (then a year later withdrew) a request for WTO arbitration against Brazil claiming their patent law that allowed for compulsory licencing (enabling the government to give local generic producers the licence to produce a patented product without the consent of the patent owner), ensuring access to affordable antiretrovirals, was in violation of TRIPS (70).

The US threatened an international trade dispute and forty pharmaceutical companies brought a domestic legal challenge against South Africa claiming their 1997 Medicines and Related Substances Control Amendment Act, that allowed the use of parallel importation (enabling the importation of medicines without the permission of the patent holder) of affordable generic medicines (including antiretrovirals), was in violation of TRIPS, only dropping it after massive local and international pressure (71).

Efforts to address the challenge of high-priced and patented anti-retrovirals led to a Ministerial Conference of the WTO in 2001 adopting the Doha Declaration which re-affirmed the right of member states to adopt 'flexibilities' within TRIPS, including compulsory licenses and parallel imports of generic medicines to protect access to affordable medicines. Since then TRIPS flexibilities have been successfully implemented at least 152 times, primarily for HIV medicines (72). However, a number of middle-income countries have continued to face significant pressure from high-income countries to abandon their attempts to use TRIPS flexibilities for other medicines (72-75). For example, in 2016, when Colombia attempted to issue a compulsory licence for the cancer drug imatinib (categorised as an essential medicine by the WHO), Switzerland and the United States pressured Colombia to abandon its plans (76), potentially dissuading other countries from using TRIPS flexibilities for cancer medicines (72). Perceived limitations of the Doha Declaration promoted LMICs to propose a TRIPS waiver on coronavirus technologies as outlined in Box 1.1 at the start of this Chapter.

While the number of formal WTO trade disputes relating directly to public health policies is relatively small, there have been numerous informal challenges raised by member states in WTO Committee meetings (particularly the TBT Committee) claiming certain tobacco, alcohol or food policy are in violation of WHO rules (77-81). Between 1995 and 2016, 250 challenges or trade concerns raised by members at the WTO's TBT Committee concerned regulations aimed at protecting human health or safety (82), and of these 93 were over food, beverage and tobacco regulations (64). These include for example, nutrition labelling initiatives in Thailand, Chile, Indonesia, Peru and Ecuador (83) and alcohol health warning labelling regulations in Thailand, Kenya, Israel, Mexico, Turkey, South Africa, India, Ireland and Korea (79). Such informal trade challenges also have the potential to restrict policy space and generative a chilling effect on regulatory development as countries delay, compromise or abandon challenged regulations in an attempt to avoid escalation to or attraction of a formal trade dispute (79, 83).

1.3.2 Contemporary trade policy beyond the World Trade Organization

With the recent exceptions of the United States' (US) withdrawal from/freezing of various trade deal negotiations under the Trump administration, and the United Kingdom's withdrawal from the European

Union, the past two decades have seen most industrialised countries continue to pursue progressively liberal trade and investment agendas (6, 84). After the break-down of the latest round of WTO negotiations that started in Doha in 2001, governments have increasingly pursued trade and investment agreements (TIAs) negotiated outside the WTO framework (22). Regional TIAs, including the Comprehensive and Progressive Trans-Pacific Partnership Agreement (CPTPP) concluded between 11 Asia-Pacific Rim countries (6, 85), the Regional Comprehensive Economic Partnership (RCEP) between 16 Asia-Pacific countries (86) and the Comprehensive Economic and Trade Agreement (CETA) between Canada and the EU (87), are likely to be particularly important given the collective size of the economies involved, the political power of many of the negotiating governments (22), and the political leverage held by large TNCs originating from/operating in negotiating countries. These regional TIAs have been anticipated to set a new precedent for international trade and investment (22). Compared to earlier agreements, modern TIAs contain ‘WTO-plus’ provisions that are deeper than minimum WTO obligations (88-90) and ‘WTO-extra’ provisions that extend even further ‘behind borders’ to further reduce non-tariff barriers to trade (88); including through deeper investor protection (discussed in detail in the next section), deeper intellectual property protections, facilitating greater corporate participation in domestic policymaking, and restricting domestic policymaking via regulatory coherence, transparency, harmonization and trade facilitation obligations (2). Concerns have been raised regarding the potential for these provisions to further restrict health policy space (2, 26, 91-93); discussed in more detail in Chapter Four. While it is important to note that the rise in nationalism in recent years (and the Covid-19 pandemic) may trigger a broader shift away from ongoing liberalization (94, 95), it remains too early to predict such a reset.

1.3.3 Investment liberalization and investor protection

Since the late 1920s, large capital-exporting former colonial Western states have, along with their business lobbies, repeatedly pushed for a multilateral treaty that would protect foreign investors from expropriation and other interferences by host states (96). However, over decades many capital-importing developing countries have repeatedly rejected proposals for a multilateral investment treaty, recognising it as another tool for Western powers to maintain influence in newly independent and developing countries (96, 97). As such, to date no multilateral agreement on investment currently exists (98). However, with removal of domestic controls on capital flows and the associated expansion of an international market for private investment, most developing countries have, since the 1990s, been under increased pressure to attract foreign investment (96). As such, most have conceded to pressure from capital-exporting states and multinational firms to enter into what has become a network of international investment agreements (IIAs), that are usually based on terms stipulated by capital-exporting countries (96). There is concern that interstate competition for foreign investment has meant states with less to offer by way of a domestic market, infrastructure and resources, can be forced to concede more legal rights to investors in IIAs in an effort to

out-compete other states for investment. This can cumulatively lead to a 'bidding-up' up of state concessions for international capital (96).

Despite mixed evidence for positive local impacts of foreign direct investment (FDI) (26) or promotion of FDI by investment protection (99, 100), IIAs have rapidly proliferated in the past three decades. IIAs are primarily composed of BITs, of which 2336 are currently in force (101). There are 285 other types of IIAs currently in force, including broad economic treaties, treaties with limited investment-related provisions, and treaties that only contain a framework on investment (101). Investment chapters have also been included in a number of important regional TIAs including the NAFTA agreement (recently replaced by the US-Mexico-Canada Agreement), CPTPP, CETA, and the Trans-Atlantic Trade and Investment Partnership (TTIP) between the US and the EU (22, 96).

IIAs and investment chapters in regional TIAs have come under particular criticism for their inclusion of expansive foreign investor rights, but particularly their provision of the ISDS mechanism (3, 97). IIAs and investment chapters often include very broad definitions of an investor and investment (23) and offer foreign investors the right to fair and equitable treatment; treatment no less favourable than that provided to domestic or third country investors; freedom to invest or withdraw capital from the host state, or repatriate income of an investment; to bring arbitration claims against host governments through the investor state dispute settlement (ISDS) mechanism; and financial compensation for direct or indirect expropriation of their assets (3, 98).

The ISDS mechanism allows corporations to bring claims for financial compensation against states in private international investment tribunals in the case that they perceive their rights under an IIA have been violated (26). The arbitral procedures and rules most commonly provided for in IIAs are the World Bank's International Centre for Settlement of Investment Disputes (ICSID) and the United Nations Commission on International Trade Law (UNCITRAL) (96). Under these arbitral systems three private arbitrators are appointed on a case-by-case basis. ICSID arbitrators are paid US\$ 3000 per day and UNICITRAL arbitrators are often paid more (102, 103). ICSID cases are disclosed publicly, however a third party may only attend the proceedings if both parties agree. An arbitral award cannot be annulled by domestic courts and there is no process for appeal, however an annulment procedure is provided for under strict conditions (102).

The past two decades have seen an associated increase in utilization of ISDS by investors with a total of 1023 ISDS cases documented by UNCTAD as of January 2020, the majority against LMICs (104). While decisions in favour of the disputing corporation usually result in financial compensation, the underlying objective in many cases will be to promote the repeal of a policy/regulation unfavourable to them (22). Given the potential size of awards, governments may be compelled to change the regulation rather than defend the claim in arbitration and risk an arbitral award against them (22). The ISDS mechanism has increasingly been used to

challenge domestic public policy measures, of which approximately 100 have potential direct or indirect public health implications (102). These include in the areas of tobacco control, access to medicines, health-care, environmental and planetary health, access to clean water, government revenue and potentially other social determinants of health. A number of health-relevant regulations have been successfully challenged by investors using the ISDS system. Three examples are outlined below in Box 1.3.

Box 1.3: Examples of investor-state disputes with direct public health implications

Between 2008-2018 Slovakia defended three investor claims relating to the reversal of previous privatization of the Slovak health insurance market, in one of these disputes arbitrators ordered Slovakia to pay EUR22 million in compensation to the investor (105).

In 2009 Cargill, an agribusiness producer of high fructose corn syrup (HFCS) (a sweetener linked to obesity) successfully challenged the Mexican government's tax on beverages sweetened with HFCS. The tax was intended to assist in safeguarding the Mexican cane sugar industry providing hundreds of thousands of jobs, that had been threatened post-NAFTA by an influx of subsidized American HFCS. The ISDS tribunal ruled that the tax violated Cargill's right to fair and equitable treatment and awarded the company US\$77.3 million (106, 107).

In 1998 Ethyl, an American chemical company, initiated an ISDS dispute after the Canadian government banned imports of the gasoline additive methylcyclopentadienyl manganese tricarbonyl (MMT) due suspected neurotoxicity and environmental concerns. The Canadian government agreed to settle paying Ethyl US\$13 million in compensation, repealed the ban and agreed to issue a statement that MMT did not pose a risk to health or the environment (108).

Moreover, even when arbitrators rule in favour of the state, the ISDS system may have significant indirect effects on health where government revenue that could have funded public health policies or programmes is instead redirected to defend against investor claims (3); such as the case of Renco vs Peru outlined in Box 1.4. While respondent states have spent well over US\$10 billion in legal fees and compensation to private investors, the largest private companies have been disproportionately successful relative to smaller companies, gaining over US\$6.5 billion from the system (109). Even when arbitrators rule in their favour, states must often still cover the cost of litigation, estimated to be US\$8 million per case (110).

Box 1.4: Example of an investor-state dispute with indirect public health implications

When US-based mining company Renco acquired a metallurgical smelter (the main source of air, soil and water pollution with associated health risk particularly to children) in the city of La Oroya, Peru, the company committed to modernising the plant to reduce pollution but failed to comply with environmental regulations, leading to bankruptcy and loss of ownership (111). Renco subsequently initiated an ISDS dispute in 2006 claiming, among other things, indirect expropriation of their investment. Although arbitrators rejected Renco's claims on lack of jurisdiction in 2011, Peru was denied recovery of their legal costs (112), money that could potentially have been used towards soil and water remediation efforts to reduce exposure to heavy metal pollution from the now inactive smelter. In 2007 lead blood concentration in children for example was measured at twice the WHO's level of concern for adults (113), while any level of paediatric exposure is associated with risk of neurological and cognitive impairment (114).

Major concerns have also been raised that the perceived or actual threat of an investor-state dispute may be taken into consideration during health policymaking leading to policy/regulatory chill. A policy may be compromised in an effort to avoid the risk of an investor initiating a dispute, delayed until related arbitration in another country is concluded, or abandoned altogether (115). Policy chill of tobacco control regulation has recently been associated with Philip Morris Asia's investor-state dispute against Australia under a TIA with Hong Kong for their plain tobacco packaging legislation which led to delays in progress on similar regulations in New Zealand and Thailand (116-119). While governments are incentivized to avoid *trade* disputes due to the substantial legal, administrative and economic costs and the possible impact on future trade negotiations (64, 120), the risk of investor-state dispute may be an especially powerful driver of public health policy chill (22, 121). This is due to the particularly high arbitration and potential compensation costs for governments (91); broad and ambiguous investor protection provisions included in IIAs (105, 122-127) leading to inconsistent and unpredictable arbitral rulings (124, 125, 128); lack of appeal mechanism and potential arbitrator conflict of interest. Given the unequal resourcing of LMICs compared to TNCs, the ability of corporations to generate policy chill in these increasingly important strategic markets may be extensive (22). Policy chill is explored in more detail in Chapters Four, Five and Seven.

Having outlined the development of the modern trade and investment system (and its potential implications for NCD prevention policy processes and decisions), the next section turns to exploring the ideological and institutional basis of these developments and how they facilitate corporate power.

1.4 NEOLIBERALISM, GLOBAL CONSTITUTIONALISM AND CORPORATE POWER

1.4.1 Neoliberalism

The past two decades has seen a significant expansion in the use of the term neoliberalism. The term has been used in various ways including as a 'denunciatory category' for all purposes (129), leading critics to argue that for the term to be of any use, it must be clearly circumscribed (129, 130). This section therefore briefly outlines the framing of neoliberalism adopted in this work, basic neoliberal ideas and their associated policies.

One of the most common understandings of neoliberalism is as the dominant political ideology of global capitalism that was able to take root after a period of macro-economic instability in the 1970s (129). Harvey and others have drawn emphasis to the actors involved, describing neoliberalism as an ideological project used by economic elites to capture institutions and propagate neoliberal ideas and policies to restore capitalist class power over states and societies in the aftermath of economic and social crises of the 1970s (129, 131). He posits:

'Powerful ideological influences circulated through the corporations, the media, and the numerous institutions that constitute civil society – such as the universities, schools, churches, and professional associations. The 'long march' through these institutions...the capture of certain segments of the media, and the conversion of many intellectuals to neoliberal ways of thinking, created a climate of opinion in support of neoliberalism as the exclusive guarantor of freedom. These movements were later consolidated through the capture of political parties and, ultimately, state power.' (129, 131)

Others have adopted a similar understanding of neoliberalism as a hegemonic project, described by Barnett as 'a coherent ideological project with clear and unambiguous origins, whose spread is sustained and circulated by an identifiable set of institutions', and which 'diffuses downwards and outwards from a coherent set of institutional sites located in the United States and Europe' including the International Monetary Fund, the World Bank and the WTO (132). However, critics have argued that this overly instrumentalist approach fails to recognise the significance of society and institutions as capable of shaping political and economic outcomes (129, 133). Flew proposes instead neoliberalism 'as a particular form of policy-related doctrine, or a combination of ideas about the optimal form of market capitalism, combined with concrete proposals for institutional reform that would move particular societies towards such preferred outcomes' (129). This thesis broadly adopts the characterization of neoliberalism as a dominant ideology however also incorporates Flew's less hegemonic perspective (3), allowing for both instrumental and structural modes of entrenchment of neoliberal ideas in policy development.

Neoliberal ideas are widely understood to be based on the core value that individual freedom and liberty are paramount (134), the fundamental belief that economic growth is essential and that human well-being can best be advanced by individualized free market-based competition with limited government interference (135). Such neoliberal ideas manifest in institutions and policies in heterogeneous context-specific ways and have taken different forms over time (130). Neoliberalism is also recognised as having been refined by a network of 'Anglo-American-centric knowledge producers' (136) and as such is a 'policy doctrine of the English-speaking world' (129) with less influence elsewhere (137). However, Peck and colleagues note that while always 'forged and revealed in context-specific ways' neoliberalism tends to be associated with a set of recurring features of governance and policy including 'orientation to export-oriented, financialized capital; deep antipathies to social collectivities and sociospatial redistribution; and open-ended commitments to market-like governance systems, non-bureaucratic modes of regulation, privatization, and corporate expansion' (138).

Notwithstanding its varied manifestations, neoliberalism has been associated with a certain collection of policies including increased fiscal discipline to limit budget deficits; reduced public expenditure; tax reform to broaden the tax base and moderate marginal tax rates; competitive exchange rates; privatisation of state enterprises; financial liberalisation; trade liberalisation; increased FDI through reduced barriers; the elimination of regulations that impede the entry and exit of goods, services and capital; and strong property rights (which includes intellectual property) (3, 138, 139). As has been outlined previously in this chapter, the last four policies have been institutionalized within the global trade and investment system composed of the WTO and the multitude of enforceable international trade and/or investment agreements. Neoliberalism has also contributed to shaping institutions. Flew for example notes that neoliberalism provides a guiding framework for institutional development including: 'the enterprise form as a model for society as a whole; legal and regulatory frameworks that promote competition, rather than acting to restrict it in the name of other social goals... and judicial activism to limit the discretionary application of state power' (140).

1.4.2 Global constitutionalism and corporate power

Other Scholars interested in the effects of neoliberalism on institutions have argued that neoliberalism along with globalization has been associated with a process of 'new' or 'global constitutionalisation'- a shift from constitutionalism within states to between states (22, 141, 142). Constitutionalisation involves the attempt to subject all governmental action to the structures, processes, principles, and values of a 'constitution' (143). Constitutionalism is underpinned by the rule of law (144) and a constitutional democracy empowers an independent and apolitical judiciary to enforce parliamentary compliance with a constitution, rejecting legislation that conflicts with it and effectively limiting the power of the state (145). Global constitutionalism thus constitutes the establishment of laws and judicial systems for dispute resolution 'above the level of the state' through mechanisms equivalent to state-level constitutions (22).

These changes are reflected in the formation of a 'quasi-constitutional international trade and investment regime' first in the form of the WTO and its various legally binding agreements and state-state dispute resolution system (141). This regime has further developed more recently via regional and multilateral TIAs and IIAs that include the ISDS system (141, 142). Critics are concerned that global constitutionalism expands and entrenches private property rights and the privatisation of public assets including public services; allows corporations to invoke international standard and principles (not typically invoked in regulatory disputes under domestic law) to prevent legitimate state action that may directly or indirectly expropriate private property (96, 142); removes decision-making power from the legal domain of a state's own governing institutions and places it with private international arbitrators applying rules in their adjudication foreign to domestic public law (96); 'locks-in' neoliberal policy preferences that have failed to address current social and environmental challenges; and prevents the possibility of challenges to current social relations and political norms (146). Moreover, like it is possible in principle to revise a constitution, it is also possible to revise international agreements or for countries to withdraw from an agreement, in practice however, this happens very infrequently (22).

Global constitutionalism in its current form also favours certain actors' interests and world views over others', entrenching existing inequalities and power structures (3). Significant power has been granted to a relatively small group of private international lawyers, particularly under the ISDS system who have benefited enormously financially from the system and actively promoted it through academic discourse and direct lobbying claiming ISDS is necessary for countries to attract FDI (147). Moreover, these lawyers are trained to adjudicate disputes narrowly based on the relevant agreement with no obligation to consider competing social goods (e.g., the reduction of health inequities), ultimately privileging economic liberalisation over other policy objectives (22, 148).

There is also concern that global constitutionalism via the modern trade and investment system gives significant advantages to TNCs and contributes to a shift in power from the state to corporations (3, 22). Trade and investment agreements entrench privatization and liberalization contributing to the accumulation of corporate economic power (3). They also afford corporations status, rights and protections as legal persons (141), institutionalizes their participation in policy development and provide them with multiple avenues for legally challenging domestic policy (22, 93). This may potentially limit domestic policy space or generate policy chill even when agreement provisions cannot or would not require governments to repeal regulations (22, 93). Recent prospective analyses of modern TIAs including the RCEP, Trans-Pacific Partnership Agreement (the precursor to the CPTPP) and CETA that contain progressive 'behind border' provisions indicate an ongoing trend towards progressively empowering corporate actors via the international trade and investment system to influence domestic health policymaking processes (92, 149). As a starting point,

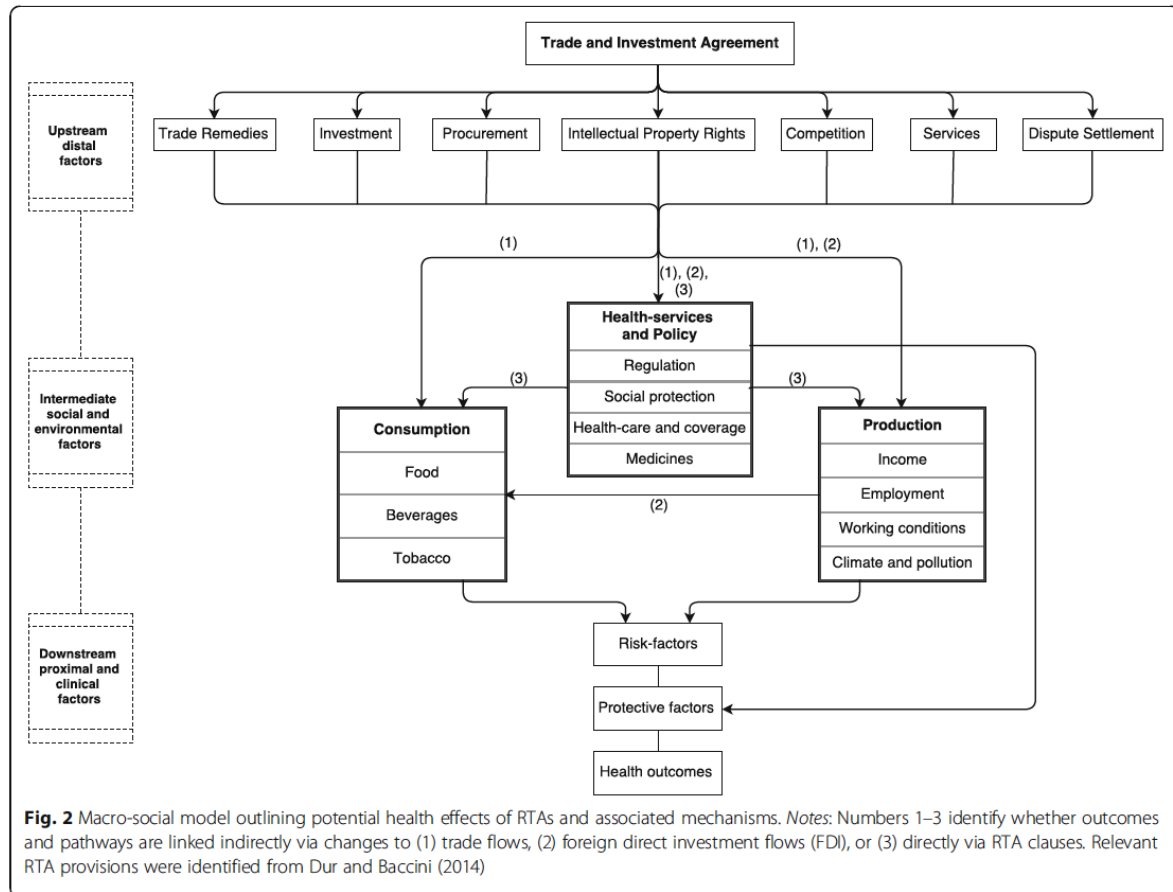
this work seeks to explore the position that dominant neoliberal ideas have been institutionalized through the modern international trade and investment system that favours the interests of a particular set of actors, specifically TNCs.

This chapter has so far focused on providing a brief overview of the modern international trade and investment system and how it may affect NCD prevention policy development and decisions. The following section outlines the effects of trade and investment liberalization on key NCD risk factors, namely the consumption of health harmful commodities including alcohol, tobacco and ultra-processed food and beverages, and their determinants.

1.5 INTERNATIONAL TRADE AND INVESTMENT LIBERALIZATION, HEALTH HARMFUL COMMODITIES AND NON-COMMUNICABLE DISEASES

This section presents a broad review of both potential and measured pathways linking trade and investment liberalization and NCDs, particularly in LMICs, via various inter-dependent intermediate social and environmental determinants of health as outlined in the conceptual framework developed by Barlow et al. (2017), reproduced in Figure 1.1. These intermediate determinants include consumption of health harmful commodities (alcohol, tobacco and ultra-processed foods (UPFs) and beverages hereafter collectively referred to as HHCs), production (affecting income, employment, working conditions and climate and pollution), and health services and policy (including NCD-relevant policy, social protection, access to health care and medicines) (150). This framework was considered useful given that it represents an integration of concepts from multiple previous frameworks – Labonté and Schrecker (2007), Blouin et al. (2009) and Friel et al. (2015) (2, 151, 152) and can be used to demonstrate how individual risk behaviours relevant to NCDs occur within physical and socio-economic contexts that are conditioned and constrained by macroeconomic policy, including trade and investment policy.

Figure 1.1: Macro-social model outlining potential health effects of regional trade agreements (150)



In 'The health impact of trade and investment agreements: a quantitative systematic review and network co-citation analysis' by Barlow P, McKee M, Basu S, Stuckler D published in *Global Health* (2017) by Elsevier licenced under CC BY.

Presented below is some of the key evidence for the pathways linking TIAs to the intermediate determinants of health (as well as risk factors and health outcomes) outlined in the framework. Notably, in reality, there is significant inter-dependence and overlap particularly between the production and consumption categories (e.g., trade liberalization has contributed to increased production and reduced cost of HHCs which in turn has promoted consumption). As such I have structured each category to most clearly indicate the relevant causal linkages rather than strictly adhered to the category boundaries as they appear in the framework.

1.5.1 Production

Increased trade liberalization can generate increased global production, reducing cost and increasing access, which creates economic growth and offers the opportunity for poverty reduction (153, 154), increased healthcare spending (155) and the potential to improve health (156). However, trade liberalization alone, without adequate complementary policies, is increasingly recognised as insufficient to create economic growth (157) and can affect the SDHs, increasing household income inequalities (158, 159), job insecurity (2), poor working conditions (160, 161) and food insecurity (162), particularly in the poorest households in low-

income countries (8). NAFTA for example, has generated very limited economic gain for Mexico (163). In the 23 years after entering into NAFTA gross domestic product (GDP) growth has been well below the average rate of growth across the rest of Latin American, poverty rates have increased, real wages have risen just 4.1%, and unemployment has not improved (163). Analysis of two large regional trade agreements – the TTIP and the Trans-Pacific Partnership Agreement – indicate that these agreements would have resulted in loss of government revenue, no economic growth in many countries, increased economic inequality and loss of labour income and jobs (164, 165).

The impacts of trade and investment liberalization on the labour sector can be highly variable and are important since they drive the quality and availability of jobs, income, exposure to hazard work environments and chronic stress which can affect health harmful commodity consumption patterns, NCD prevalence and access to healthcare (116). Increased FDI has generally been associated with increased employment and higher wages, but also higher wage inequality (166). Reduced barriers to FDI and service sector liberalization also often result in greater concentration of ownership and larger market share for a few large and highly profitable THCCs (167). For example, after signing NAFTA Wal-Mart de Mexico became the country's leading retailer (12) and the entry of transnational corporations after NAFTA displaced local firms that had been producing for the domestic market (168). Moreover, market dominance can give THCCs bargaining power over local producers in LMICs, including small scale farmers, who are forced to be 'price takers', affecting local incomes.

Reduction in tariff and non-tariff barriers affecting a country's imports and exports also have important effects on the local labour market that vary across different sectors generating winners and losers (116). Increasing imports of inexpensive foreign products and eliminating/restricting agricultural export subsidies can significantly reduce the profitability of certain sectors, including in agricultural production (the primary employment for the world's poor), negatively affecting household incomes and employment (162, 169-171). In other sectors, liberalization can increase export opportunities, leading to sector growth and increased employment. For example, while NAFTA was beneficial for many fruit and vegetable growers in Mexico due to advantages in climate, geography, and labour costs allowing them to benefit from access to US and Canadian markets, Mexican grain producers lost due to disadvantages in climate, mechanisation, and US government subsidies to their domestic producers (116, 172). Overall however, NAFTA contributed to many agricultural labourers in Mexico becoming unemployed after the adoption of the agreement (172). So, while trade liberalization can have positive impacts on health via economic growth and increased employment in some sectors, it is critical to manage job losses in other areas with adequate social protection and economic policies that effectively re-orient affected workforces. Trade and investment liberalization may also be linked to increasingly precarious and informal employment, particularly for the working poor (173), which may have impacts on NCD prevalence through increased HHC consumption driven by the unaffordability of healthy

food and/or chronic stress, or through material deprivation due to erratic income and lack of access to health benefits (116).

The liberalization of government procurement may also disrupt the use of government procurement as a tool for economic development by creating demand for locally produced goods and services which can have indirect health impacts through generating income for local companies and local employment (116, 174).

1.5.2. Consumption

Reduction of tariff and non-tariff barriers to trade has increased the volume and lowered the cost of imported HHCs – UPFs, sugar sweetened beverages, alcohol and tobacco products – and also the raw materials used to produce them, also reducing domestic production costs (116, 175, 176). Increasing the volume of imports and local production of HHCs also increases market competition, further increasing the diversity and volume of products, driving HHC prices even lower (116, 177, 178). Market competition may also lead to less healthy but cheaper imported products replacing traditional domestic products (116). For example, cheaper imported hydrogenated oils replaced locally produced coconut oils in Samoa after a period of trade liberalization (179).

Reduced barriers to FDI and service sector liberalization have been used by transnational health harmful commodity corporations (THCCs) to enter new LMIC markets (175, 176, 180) either by outsourcing production to local producers merging with or acquiring local companies (181, 182) or establishing their own strategically located manufacturing hubs in order to take advantage of free trade within a region (183). For example, the increased availability of unhealthy snack foods in Central America following liberalization has been found to be the result of US FDI as opposed to US exports (184). FDI and liberalization of trade in services has also facilitated the entry of transnational retailers and expansion of local retailers making unhealthy commodities more widely accessible (181) and has also allowed THCCs to expand their advertising and promotional activities across borders, including targeted marketing to children and adolescents (175, 185, 186) generating consumer preference and demand for foreign HHCs in LMICs (181, 187, 188). This in turn increases THCC profitability generating even more resources to allocate for branding and promotion, further increasing sales (189).

As such, the penetration of LMIC markets by THCCs through processes related to trade and investment liberalization has increased the availability, affordability, accessibility and demand for HHCs at the household level (190), which has overall significantly increased exposure both through direct consumption or exposure by-proxy including in-utero or 'second-hand' (e.g., second-hand smoking or exposure to the negative social and psychological effects of alcohol). Changes in household consumption patterns of UPFs, sugar sweetened

beverages (SSBs), alcohol and tobacco driven by processes related to trade liberalization has significant public health impacts in terms of NCD risks and prevalence throughout the life-course in LMICs. These impacts are compounded by the inability of poorly resourced health systems in LMICs to effectively manage NCDs.

Observational studies have consistently identified a positive correlation between trade liberalization and increased consumption of UPFs (7, 181, 191-201) which have increasingly become dominant components of diets globally, accounting for 30% of energy intake in middle-income countries (202). Consumption of UPFs are associated with poor dietary quality and increase in NCD risk factors including obesity (203-208), hyperlipidaemia (209), hypertension (210) and metabolic syndrome (207). A recent randomised controlled trial showed it was the percentage of UPFs rather than the amount of risk nutrients in diets that result in weight gain (211). Studies have also shown higher intakes of UPFs result in increased cardiovascular disease, cancer and type two diabetes (207). Studies have also shown a positive association between increased consumption of UPFs in children and body fat (202, 212), with increased risk of obesity later in life. Children exposed to under-nutrition in-utero (often due to household poverty) may be particularly vulnerable to these effects (213). A recent descriptive study suggests trade liberalization may also contribute to increased infant consumption of milk-based formulas that, particularly in LMICs, have been shown to increase infant mortality via increased risk of infections and exposure to environmental contaminants (214).

There is also evidence that trade liberalization can reduce price and increase consumption of alcohol (193, 215, 216). Higher levels of foreign direct investment have also been found to be associated with increased exposure to alcohol (193, 217). Alcohol consumption is associated with cardiovascular disease, stroke, chronic liver disease and neurological dysfunction and injuries (217) and also has second-hand effects for others including work place and road traffic accidents, domestic violence and family disruption (218, 219). Intra-uterine exposure to alcohol can also cause a spectrum of cognitive and behavioural deficits (220). Moreover, the health impacts of alcohol are inequitably distributed across the population. For example, lower socio-economic status has been demonstrated to increase the risk of alcohol-related mortality by 66% for men and 78% for women (175).

Evidence generally indicates that trade and investment liberalization is associated with increased consumption of tobacco products (221-225) particularly in LMICs (216). Eighty percent of smokers currently live in LMICs and smoking is widely known to cause cardiovascular disease, chronic respiratory disease and cancers (226). As markets have opened up in many countries, tobacco companies have aggressively targeted marketing to women and girls (227). This may increase smoking during pregnancy, a risk factor for miscarriage, stillbirth, placental abruption, preterm birth, low birth weight and neonatal morbidity and mortality (228, 229). Infants and children are the largest group involuntarily exposed to second-hand smoke associated with sudden infant death syndrome, exacerbation of asthma and is an important cause of

childhood respiratory infections (230). Trade liberalization has also been associated with increased youth smoking (231) causing short term respiratory effects as well as cardiovascular, respiratory disease and lung cancer in adulthood (232).

1.5.3 Health-services and policy

This part of Barlow and colleagues' framework is concerned with the pathways by which the trade and investment system can affect health outcomes via its impact on health services and domestic policy space. While they group 'health services and policy' together, this thesis is specifically focused on the impact of the international trade and investment system on health policy (specifically NCD prevention policy), processes and decisions within which health *services* policy can be considered a sub-set. Much of this first chapter has been concerned with outlining the mechanisms by which trade and investment agreements can restrict policy space or generate a chilling effect on domestic NCD prevention policy. Broadly, NCD prevention-relevant policy areas that may be influenced by TIAs include nutrition, alcohol regulation and tobacco control (150, 193); access to medicines (149, 233); health services/systems (234); social protection; environmental protection (26); and agricultural policy (169).

A specific set of WTO and WTO-plus provisions within TIAs that have been used or have the potential to be used to restrict NCD prevention policy space are discussed in detail in Chapter Four. These include provisions within technical barriers to trade chapters that require policies to be no more trade restrictive than necessary and that any policy setting higher requirements than the relevant international standards must be justified with scientific evidence (116, 235). Provisions in regulatory coherence chapters first seen in more recent TIAs raise the demands on domestic policymakers through increased transparency and reporting requirements, and increase the opportunity for private sector input in policy development (116, 236). Intellectual property provisions within the TRIPS Agreement provides a minimum standard 20-year patent protection which may be extended in more recent TIAs and accompanied by data exclusivity rights that extend market exclusivity to patent holders, delaying market entry of generic producers (even when compulsory licences have been issued) affecting the availability, accessibility and affordability of health technologies to diagnose, treat and prevent NCDs (237). While the TRIPS Agreement protected trademark registration, intellectual property chapters in more recent TIAs include provisions that protect companies' use of their trademark which may restrict nutrition, alcohol or tobacco product labelling policies (238-240).

Finally, as outlined earlier in this chapter and explored in more detail in Chapter Five, BITs and investment chapters within TIAs that include investor rights and the investor-state dispute settlement mechanism, may have significant implications for NCD prevention policy development. The ISDS mechanism may also have significant opportunity costs for governments since funds from other budget areas including health and social

services are likely to be redirected to cover the costs of litigation (116). An empirical analysis of the impact of investment liberalization on NCD prevention policy is presented in Chapter Seven.

In terms of health services, as mentioned previously, tariff reduction or elimination can affect government revenue (9, 241) with the potential to compromise public health expenditure on NCD preventative strategies and health services if countries lack the capacity to tax non-trade activities (10, 11). Finally, liberalization of the health sector may result in increased privatization of health services and health insurance leading to greater out-of-pocket spending and inequitable access to NCD health services (116).

Overall, empirical evidence is most lacking for the pathways linking NCD outcomes to trade and investment liberalization via domestic NCD prevention policy processes and decisions (116). Moreover, absent from Barlow et al's conceptual framework is consideration of how the global and domestic political economy context and actor (government, corporations and civil society) power, interests and responses shape and are shaped by the international trade and investment system, and how this may affect NCD prevention policymaking. Scholarship has only recently emerged in this area with just a few empirical studies adopting a political economy approach to understand policy actors' strategic responses to trade and investment liberalization and how this may affect public health policymaking (242-246). This thesis attempts to contribute to these gaps in the literature, as outlined in the aims presented in the following section.

1.6 AIMS AND OBJECTIVES

This thesis seeks to clarify the mechanisms by which the international trade and investment system facilitates different forms of corporate power and how this affects NCD prevention policymaking relating to health harmful commodities focusing on ultra-processed foods and alcohol.

Aim 1:

Make a theoretical contribution to the field of health policy analysis by advancing a critical investigation of how the international trade and investment system facilitates corporate power in NCD prevention policymaking.

Objectives:

1A. Develop a conceptual framework for analysing power in trade-related health policymaking.

Understanding the nature and mechanisms of power is increasingly recognised as critical to understanding contemporary public health policy processes and outcomes (247-251), however a framework for analysing power in health policymaking was absent from the existing literature. Moreover, trade and health policy

analysis has rarely engaged directly with theories of power. In order to advance the understanding of this area of research, it was considered useful to develop a framework to be used as a heuristic to guide analysis of how trade and investment liberalization facilitates corporate power in NCD prevention policymaking. The conceptual framework is presented in Chapter Two and again as part of the paper included in Chapter Four.

1B: Identify existing evidence for how the trade and investment system facilitates corporate power in NCD prevention policymaking to better understand how the power relations between trade, health and corporate actors have emerged and as such, why NCD policy non-decisions persist.

Chapter Four presents a realist review synthesizing evidence of different forms and mechanisms of power active in trade and health decision-making spaces to build understanding of why NCD prevention policy inaction persists and to identify strategies that may generate the necessary changes in power relations between health, trade and corporate actors to drive transformative policy change. The evidence identified in the realist review was also used to develop and validate the pathways included in the conceptual framework.

Chapter Five presents a second realist review focused on developing understanding of how, why and under what circumstances the international investment system may facilitate corporate actors to advance their interests within NCD policy decision-making. The review considers how the international investment system facilitates corporate power instrumentally through the ISDS mechanism that offers corporations a potentially favourable legal tool to prevent regulatory development and generate policy/regulatory chill; but also structurally since governments' are increasingly dependent on attracting foreign investment.

Aim 2:

Make an empirical contribution to understanding how the international trade and investment system affects NCD prevention policymaking in a middle-income country context

Objectives:

2A. Apply an integrated political economy and power analysis approach to explore how the international trade and investment system facilitates corporate power in nutrition and alcohol harm reduction policymaking in South Africa.

The realist reviews presented in Chapters Four and Five confirmed a clear lack of empirical evidence of the linkages between the international trade and investment system and domestic NCD prevention policymaking, particularly in a developing country context. Scholarship in this area has only started to emerge in recent years, primarily with researchers considering how international trade provisions may affect health policy space. Only a few recent empirical studies have adopted a political economy approach to understand

how trade and investment liberalization shapes actors interests and actions and how this may affect public health policymaking (242-246), with just two in LMIC settings. Further, no trade and health policy studies, to the best of my knowledge, have explicitly analyzed how actor power generated or facilitated by trade and investment liberalization may affect health policymaking. Chapter Six therefore presents a case study of South Africa where an integrated political economy and power analysis approach is adopted to understand how power relations and dynamics emerging as a result of the international trade and investment regime, influences domestic nutrition and alcohol regulatory development.

2B: Explore how international trade and investment agreements contribute to a chilling effect on nutrition and alcohol harm reduction policy development in South Africa.

The realist reviews presented in Chapters Four and Five confirm limited empirical research investigating the potential for corporate actors to generate trade or investment dispute-related public health policy/regulatory chill. In Chapter Seven an empirical case study of South Africa is conducted with the purpose of understanding to what extent trade or investment agreements/rules are used by industry or potentially also economic policy actors as a tool to promote nutrition and alcohol policy non-decisions; to what extent, why and how the threat of an investor-state dispute as compared to a state-state WTO dispute contributes to public health policy/regulatory chill; which types of chill may be occurring; and to identify any contextual factors, particularly relevant for LMICs, that may be either protective or increase vulnerability to policy/regulatory chill.

Aim 3:

Make a methodological contribution to the field of health policy analysis.

Objective:

3A. Apply a novel method for analysing power in health policy process

System dynamics modelling is increasingly recognised as a potentially valuable tool for managing the causal complexity of health policy problems, however, to the best of my knowledge these methods have yet to be used for analyzing NCD prevention policy decision-making processes in the context of trade and investment liberalization. This work utilises system dynamics modelling methods to develop a system model of the relationships between trade and investment liberalization, corporate power and diet-related NCD policymaking in South Africa. The model is presented in Chapter Nine to develop understanding of the key political economy and power structures generating diet-related NCD policy non-decisions and to identify key potential leverage points to facilitate system change that promotes transformative policy action.

3B. Explore the utility of system dynamic modelling methods for analysing power in health policy process analysis

Chapter Eight reviews the utility of system dynamics methods for analysing power in health policy process analysis. This chapter proposes that the use of system dynamics analysis within a power theory perspective may extend the utility of system dynamics for understanding highly political and complex social system problems and assist in further developing system dynamics methods to accommodate different forms of power and power differentials between stakeholders.

Aim 4:

Identify strategies and governance mechanisms governments, public health actors and civil society can use to promote transformative and coherent NCD prevention policy action to achieve desired health outcomes

This work is not intended to exclusively contribute to the academic literature, but also to provide strategies for promoting trans-sectoral NCD prevention policy action. While public health experts and guiding NCD strategy documents have repeatedly called for policy action that moves beyond abdicating responsibility for NCDs to individuals and towards addressing the multiple system drivers that promote the consumption of health harmful commodities including in agriculture, trade, investment, public policy and marketing (12, 30, 33-35), little in practice has been achieved. This work proposes that it is only by making visible the different forms and dynamics of power at the nexus of trade and health policymaking that it becomes possible to identify and evaluate strategies for generating the necessary changes in power relations between health, trade and corporate actors to drive transformative policy change. Chapters Four to Seven and Nine each offer strategies and governance mechanisms governments, public health actors and civil society can use to promote transformative and coherent NCD prevention policy action.

This thesis is presented in research paper style. As such, while each chapter is linked to the others, presenting a coherent body of work, each chapter does stand independently. Consequently there is some repetition, particularly of the methods throughout this thesis.

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CHAPTER TWO: THEORETICAL AND CONCEPTUAL FRAMING

CHAPTER OVERVIEW

This chapter outlines the theoretical grounding of this thesis. The conceptualization of this thesis was guided by three complementary and overlapping theoretical perspectives – political economy of health, power theories, health policy process theories. They also informed the analytical approach taken throughout the thesis and were synthesized to develop a novel framework for analyzing power in health policymaking that is applied in Chapters Four and Six.

2.1 POLITICAL ECONOMY OF HEALTH

Although political economy factors are integral to the problem of NCDs and therefore also the policy responses, the study of the interaction of political and economic factors and their health/social implication has, until more recently, largely remained limited in NCD policy research (1). Like the structural approach to health presented in the WHO's Commission on SDH (2) and outlined in Chapter One, a political economy of health perspective focuses on the upstream 'causes of the causes' of health outcomes and their distribution (3-5) and the policy responses to them. Reich defines political economy of NCDs as 'how the allocations of political resources and economic resources affect who gets what, when, and how in relation to NCDs' (6). Describing the political economy of health as an analytical approach, Kreiger states: 'analysis of causes of disease distribution requires attention to the political and economic structures, processes and power relationships that *produce* societal patterns of health, disease, and wellbeing via shaping the conditions in which people live and work' (7). These conditions include the NCD-relevant policy environment (the key outcome of interest in this work), and as such, broadly speaking, a political economy approach to health policy analysis considers the interaction between economic and political factors in explaining policy change (8).

The practical application of a political economy approach to health policy analysis has developed in recent decades and includes critical examination of how actors, their interests, ideas, institutional factors (including political and economic structures and both formal and informal 'rules of the game') and resulting power relations ultimately shape policy processes and decisions (6, 9, 10). Applied political economy analysis helps identify obstacles to policy change by assessing the political landscape (key stakeholders, power relations between them and an estimate of political feasibility for policy change), how political strategies shape the feasibility of policy change, and the role of political economy factors throughout the policy cycle (11).

2.2 POWER THEORY

The exercise of power implicitly and explicitly is the central phenomenon within every policy process (8) and understanding it is essential to promoting the policy change necessary to address health inequities, including those relating to NCDs (12). While consideration of power is critical to a political economy approach there are conceptual gaps in the tools of political economy analysis that tend to underestimate the complexity of power (13). Power theory, shaped by a range of disciplines (14), offers a very useful conceptual basis for understanding power sources and dimensions and how the expression of power, either overtly or covertly and both formally and informally, underpins resistance

to policy change as well as how it can enable such change (8). This thesis argues there is significant utility in integrating power theory into political economy analysis. This section outlines a broad overview of some key theories and frameworks on power most relevant to health policy process analysis as applied in this work.

One useful definition of power is that it is 'the ability to influence people, and in particular to control resources' (15). However various definitions of power exist and debates are ongoing over the meaning of power, including for example whether power is best understood as '*power over*' (the ability to influence others) or '*power to*' (achieve one's own goals) (12). Power is multi-dimensional and is generated from, or constrained by, the broader historical, social, political, cultural and organizational context of policymaking (8). Gaventa also points out that power is expressed at different levels (local, national and global) and in different spaces (closed, open and claimed or created) (16).

Different theories exist and remain contested regarding where power lies. The power of structure or networks of relations in shaping social phenomena, including the structure of language and organizations, has been argued historically by social anthropologists, particularly Lévi Strauss (17). Others have focused more on agency-based power – an actor's ability to achieve their own goals or an actor's ability to act independently of the constraints of social structure (18). For example, agency in both these forms feature prominently in Weber's argument concerning the mechanisms through which the spirit of modern capitalism emerged (18, 19). Giddens' structuration theory integrates both structure and agency-based power. Giddens argues that power can both be voluntarily exercised by actors via agency and expressed through the social structures actors are embedded within (20). He describes a 'duality of structure' whereby the structure of social systems has the power to constrain and enable social action and interaction but is, at the same time, produced and reproduced through social action and interaction over time (20). Foucault rejected both agency and structural forms of power and instead claimed 'power is everywhere' (21). He argued that power is embedded within accepted forms of knowledge, scientific understanding and 'truth' that are produced under multiple forms of constraints and determine acceptable discourse and behaviour in society (22, 23).

Power is often described in relational terms and there are varied perspectives on the possible distribution of power. Some argue power is concentrated in the hands of a few. For example, the Marxist perspective argues that the source of power lies in the economic system which determines who owns the mode of production and the distribution of capital. Under capitalism, where capital is accumulated by the ruling class, the ruling class thus hold all the power over the working class (24).

Mills argues decision-making power is held by a combination of business, political and military elite (25). In contrast, the pluralist view on power held by Dahl and others asserts that there are multiple possible sources of power (e.g. legal authority, skills, knowledge, prestige, money, charisma) and that while decision-making power is located primarily within the framework of government, certain other groups can also exert influence, although elite pluralism acknowledges that some groups have more power than others (26).

Another key aspect of power relates to how it is expressed. For some, including Dahl, power lies in decision-making in the formal political arena where 'A has power over B to the extent that he can get B to do something that B would not otherwise do' (27, 28). Bachrach and Baratz added to this second 'face' of power as agenda-setting where power is exercised when A reinforces social and political values and institutional practices that limit the scope of issues considered on the agenda (29). Similarly, Gavanta describes 'hidden power' – 'certain powerful people and institutions maintain their influence by controlling who gets to the decision-making table and what gets on the agenda' (16). In relation to the power of corporations, Fuchs and Lederer also describe agenda-setting power as 'structural power' (30) including under this broad concept Bachrach and Baratz's second face of power but also political economy theory on the 'structural dependence of state elites on private sector profitability' (30) giving corporations significant bargaining power (promising jobs and income) to shape the policy agendas of host governments (30). Fuch and Lederer also argue that underlying economic structures can place corporate actors in positions of making decisions themselves – the second aspect of corporate structural power (30).

Lukes' built on these existing theories adding a 'third face of power' to explain how the powerful secure the wilful compliance of those they dominate. Coined 'thought control', Lukes claims that power is also exercised by shaping people's perceptions and interests without their own awareness, stating:

'is it not the supreme and most insidious use of power to prevent people, to whatever degree, from having grievances by shaping their perceptions, cognitions, and preferences in such a way that they accept their role in the existing order of things, either because they can see or imagine no alternative to it, or because they see it as natural and unchangeable, or because they value it as divinely ordained and beneficial (31)?'

Lukes suggests thought control can be achieved through the control of information, mass media and socialization (31). Lukes' third face of power is partially rooted in Marxist thinking that working class subordination is secured via the socialization of dominant ruling class ideologies and values through

key institutions that generate a ‘false consciousness’ within the working class (24). On unconscious wilful compliance Foucault has also been highly influential pointing to the ways that social norms can be so embedded that they are in fact beyond our awareness, causing us to ‘discipline’ ourselves without being coerced by others (32). Building on Foucault’s work, Gramsci described power as ‘hegemony’, where dominant ideas are reproduced through the media, educational and religious institutions to ‘manufacture consent’ among certain groups (33).

Others in international politics have developed theories of power that have been increasingly applied in health policy research (12, 34). Barnett and Duvall for example, define four types of power: compulsory power as ‘direct control over another’ including material (e.g., military or economic), symbolic and normative power; institutional power, how certain actors influence the rules and procedures of formal and informal institutions that constrains the actions of others; structural power, how we define ourselves in relation to others in ways that privilege some over others; and productive power, how meaning is created through knowledge and discursive practices that lead to certain ways we think about the world to be considered normal and unquestionable (34, 35).

Additionally, Sriram and colleagues (12) outline various sources of power identified by theorists interested in actor agency. These include power derived from technical expertise (knowledge, skills and information) (36); personal attributes, Weber for example identified ‘charismatic authority’ (37); material or financial power (38); networks and access; political power derived from political authority (37); and bureaucratic power derived from the authority of bureaucracies and administrative machinery that design policies (39).

Lastly, a number of frameworks and tool-kits have been developed based on existing concepts of power to assist researchers, practitioners and activists to undertake power analysis in different political spaces (12). This involves mapping the types of power which they seek to challenge and identifying and assessing strategies for doing so with the aim of shifting power relations and dynamics in the real-world to facilitate positive change (12, 16, 40, 41). The ‘Power Cube’ developed by Gaventa (2005) (16) is one such key framework made of three related dimensions—forms of power that draws heavily on Lukes’ three faces of power (31); spaces that may be open, closed or claimed; and levels (from local to global) in which they operate. In their participatory guide on people-centred public decision-making, VeneKlasen and Miller (2002) provide a typography of both positive and negative expressions of power including ‘power over’ (taking it from others and using it to dominate); ‘power with’ relating to ‘finding common ground among different interests and building collective strength’

(42); 'power to' referring to everyone's unique autonomous potential to shape themselves and the world); and 'power within' relating to a person's sense of self-worth and self-knowledge (42).

2.3 HEALTH POLICY THEORIES

As mentioned in the introduction chapter, health policy processes and decisions are the main outcome of interest in this work. Policy scholars have developed several theories and frameworks to help understand the underlying political and institutional factors that interact in complex ways to influence the policymaking process, this section briefly outlines a few key frameworks particularly relevant to this work.

Earliest models of policy formulation outline the process as relatively simple, linear and stepwise. For example, the Stages Heuristic Model first introduced by Lasswell in 1956, includes four stages: agenda-setting, policy formulation, implementation and evaluation (43). Kingdon later rejected such simple, systematic models of policymaking and in 1984 developed the multiple-stream model to explain the complexity of political agenda-setting (44). Kingdon proposed that rare 'windows of opportunity' for government action only occur at particular junctures when three processes or 'streams' merge: the problem, policy and political streams (34). The problem stream contains the problems of society that have been identified as requiring government intervention to resolve them. The policy stream is filled with alternative solutions to the problem identified by researchers and others. The political stream includes factors that have political influence including for example interest group advocacy campaigns, change in leadership, social pressures and the national mood (34, 45).

Baumgartner and Jones' (1993) punctuated equilibrium theory applied to health policymaking proposes that most policymaking processes exist in extended periods of stability with minimal or incremental policy change, which may be punctuated by bursts of sudden rapid transformation (46, 47). The concepts of policy image and policy venue are core to their theory (47). The policy image is the conceptualization of a given problem and its potential solutions; and the policy venue is the range of actors and institutions charged with decision-making on certain issues (47). One policy image may dominate over an extended period, but at some point may be challenged as new perceptions of the problem and alternative solutions arise; and certain policy actors may hold all the power but will eventually be challenged by new actors with alternative policy images (47).

In 1994 Walt and Gilson incorporated insights from political economy to develop a more structured framework – the policy triangle model – that facilitates the analysis of various variables that shape the

policy process (15, 48). These include actors (their positions in power structures, values and expectations); context (political, ideological, historical or cultural); process (how issues get onto the policy agenda and how they are addressed once there); and the content of policy which will reflect the interaction of the other dimensions (48). Walt and Gilson emphasise the interaction and interdependency between these variables in shaping the policy process (48). Along similar lines, the '3Is' theoretical framework combines common factors used to explain public policy development processes in political science. These include actor interests and the different power relationships between stakeholders and government; the set of ideas that characterise a problem and the policy options to address it including stakeholders' values and knowledge/beliefs and how these determine actor framing of problems and perception of solutions as effective, feasible or acceptable; and institutions including governance structures, policy networks and policy legacies (e.g., constitutions and past policies) (49).

In 2007, Shiffman and Smith designed a framework on the determinants of political priority for different global health initiatives. The framework includes four elements: the power of the actors involved, the influence of the ideas used to portray the issue, the political contexts in which they operate, and characteristics of the issue itself (50). Rushton and Williams draw on work by Campbell, Sabatier and Hall to develop a framework for analysing global public health policymaking with different explanatory levels and pathways of influence. At the most immediate level Rushton and Williams' framework includes issue framing by different stakeholders which lie in the foreground of policy debates (51). This is linked to deeper ideational paradigms that structure how actors perceive and understand the world and their assumptions about how the world works, which limit the range of policy options considered useful (51, 52). Also at this level is distribution of power in the international system including, for example, material power (e.g. economic resources) increasing an actors coercive capacity, bureaucratic authority and authority over knowledge production and what kind of knowledge is valued (51). At an even deeper level they argue global health policymaking is structured by a 'deep core' of embedded beliefs (identified as neoliberalism in the contemporary global political economy) that 'provides an overarching logic and a background set of assumptions and values that has influence across policy areas and social spaces' (51).

While there are significant strengths of the theories proposed so far, there are also some limitations and challenges in applying them to analysing policy processes. For example, none are designed specifically to explain the dynamics of policymaking in LMICs and while some include power variables, relatively limited conceptualizations of power are used; with the exception of Rushton and Williams'

framework. Many of the theories or models briefly outlined here, were considered during the development of the conceptual model for analysing power in health policymaking discussed in the next section.

2.4 CONCEPTUAL FRAMEWORK OF POWER IN TRADE-RELATED HEALTH POLICYMAKING

To the best of my knowledge at the time of this work, a framework explicitly designed for analysing power in health policymaking was absent from the existing literature. It was therefore necessary to develop such a framework to be used as a heuristic to guide the case study analysis of how the international trade and investment system facilitates corporate power in NCD prevention policymaking. Moreover, grounding the analysis in theory makes it easier to later draw analytical generalizations such that the lessons learnt from the case study may be more widely applicable (53).

An initial purposive search was undertaken to identify existing conceptual frameworks and theories considered potentially useful for understanding health policy processes (including the role of corporations) and that were grounded, at least to some extent, in political economy theory and/or that included concepts of power. These frameworks and theories are presented in table 2.1.

Table 2.1: An overview of the identified theories and frameworks relevant for analyzing power in health policy processes

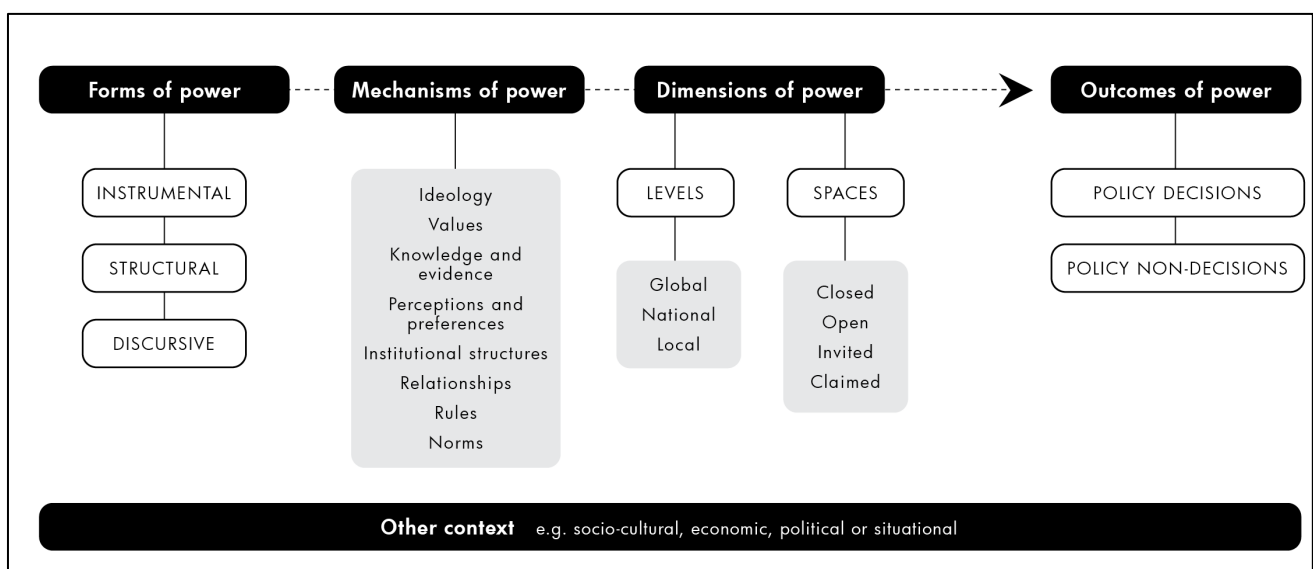
Author and year of publication	Title of Framework Document	Key features	Key relevant limitations/gaps
Bachrach and Baratz, 1962	The Two Faces of Power	Theory on two faces of power as decision-making and agenda-setting (hidden) power (29).	Does not consider power can also be exercised by shaping peoples' perceptions and preferences without their own awareness.
Lukes, 1974	Power: A Radical Approach	Theory on three faces of power as decision-making, agenda-setting and preference shaping (31).	Alone does not provide guidance on all the various different mechanisms by which these three different forms of power can be expressed.
Kingdon, 1984	Agendas, Alternatives, and Public Policies	The multiple-stream theory proposes that policy change occurs when three different streams- problem, policy and political - align to open a 'window of opportunity' for political agenda-setting and policy decision-making (44).	Does not consider power in policymaking.
Sabatier and Jenkins-Smith, 1993	Policy Change and Learning: An advocacy coalition approach	Theorises policy outcomes are reached within a complex policymaking system. Policymaking occurs within a policy subsystem where different policy coalitional beliefs, goals and strategic behaviours influence policy change and impacts. The wider political environment provides resources, opportunities and constraints to policy coalitions (54).	Assumes nature of a policy problem is determined by relatively stable parameters and can't readily be shaped by policy actors. Does not provide explanatory theory for how actor beliefs/perceptions might be changed. Potentially over-emphasises the role of evidence/technical information in policymaking with less consideration of relevant political economy influences. Adopts a very limited and vague definition of power.
Walt and Gilson, 1994	Reforming the health sector in developing countries: the central role of policy analysis	Policy Triangle policy analysis model emphasising how context, content, process and actors all interact to shape policy formulation (48).	The framework does not explicitly include a conceptualization of power. Does not clearly give a sense of process.
Barnett and Duvall, 2005	Power in international politics	Taxonomy of four types of power: compulsory, institutional, structural, and productive power (35).	While it outlines four different types of power, it does not explicitly and comprehensively consider all the potential mechanisms by which these different types of power may be expressed. Is specific to international

			politics and does not explicitly consider the outcome of power in a policy process.
Gaventa, 2006	Finding the spaces for change: A power analysis	Integrates Lukes' Three Faces of Power theory into the Power Cube theory on different forms (visible, hidden and invisible), spaces (closed, open, claimed) and levels (global national, local) of power active in different political spaces (16).	Is not specifically designed for health policy. Does not consider the various mechanisms by which each form of power may be expressed and does not explicitly consider the various potential outcomes of power in policymaking.
Farnsworth and Holden, 2006	The Business-Social Policy Nexus: Corporate Power and Corporate Inputs into Social Policy	Theory on corporate structural and agency-based (political engagement, institutional participation and provision/production) power in social policy (55).	Focused singularly on corporate power in decision-making.
Fuchs and Lederer, 2007	The power of business	Theory on the instrumental, structural and discursive power of corporations (30).	Focused singularly on corporate power in decision-making.
Shiffman and Smith, 2007	Generation of political priority for global health initiatives: a framework and case study of maternal mortality	Framework for understanding political priority for different health initiatives including the strength of the actors involved, the power of the ideas they use to portray the issue, the political contexts in which they operate, and characteristics of the issue (50).	Focused primarily on political priority or the agenda-setting stage of the policy process.
Rushton and Williams, 2012	Frames, Paradigms and Power: Global Health Policymaking under Neoliberalism	A framework for analyzing global health policymaking focusing on various inter-linked explanatory levels including through the framing of policy debates linked to deeper ideational paradigms and forms of power each of which is shaped by (and shapes) a 'deep core' of embedded beliefs (51).	Focused specifically on global health policymaking and policymaking under neoliberalism so perhaps less generalizable to purely domestic policy processes and policymaking under alternate underlying paradigms. Focuses on issue framing, ideas and beliefs but doesn't consider how power is constituted through use of knowledge/evidence, institutional structures or rules in policymaking.

Gauvin, 2014	Understanding policy developments and choices through the '3-i' framework: interests, ideas and institutions	The '3Is' theoretical framework focuses on how institutions (processes, context), interests (actors, power) and ideas (content, evidence, values) influence problem definition, policy development and choices (49).	The framework does not explicitly include a conceptualization of power. Does not consider the different spaces or levels of power.
Madureira Lima and Galea, 2018	Corporate practices and health: a framework and mechanisms	Uses Lukes' Three Faces of Power theory (31) to explain how different corporate practices can translate into expressions of power, depending on the context in which the practice is deployed (56).	Focused solely on corporate 'practices of power' rather than providing a more general framework that can be used to explore the power of different actors or how power can emerge from the system structure itself. Is not specifically focused on how power is used in policy processes and how this affects policy outcomes, particularly non-decisions. Does not consider ideology or norms as 'vehicles of power'.

In an iterative process, relevant and compatible elements from several of these frameworks and theories were synthesized to develop the conceptual framework for analysing power in contemporary public health policymaking used in this work (Figure 2.1 below). I developed the initial framework then shared it with three health policy experts (including both my supervisors) for their feedback. I subsequently revised the framework in three iterations. The final conceptual framework builds on the three key forms of power outlined in Fuchs and Lederer’s framework with a strong focus on Lukes’ Three Dimensions of Power (31). Each form of power is expressed via various mechanisms adapted from the Policy Triangle Model (48), the ‘Three Is’ framework (49, 57), Shiffman and Smith’s framework (50) and Rushton and Williams’ framework (51) and with examples drawn from Madureira Lima and Galea’s framework of corporate practices and health (56). Mechanisms are active in different spaces and at different levels as described in Gaventa’s Power Cube (16). Outcomes of power can be either policy decisions to act or non-decisions expressed as inaction. Every policy process is affected by context, as emphasized in the Policy Triangle model (48).

Figure 2.1: Conceptual framework for analysing power in contemporary public health policymaking



While the *forms, mechanisms, dimensions* and *outcomes* of power are shown in Figure 2.1 as separate elements, there is significant interdependence both within and between elements (58). Additionally, various forms and mechanisms of power are generally involved in any given policy process (58).

Focused on the direct influence stakeholders have over formal political decisions, instrumental power is closely aligned with Lukes’ first dimension of power (58) where actor A is deemed to have power over actor B, if actor A can convince actor B to do something she/he would not otherwise do (31). Corporations for example strategically build close relationships with political decision-makers (e.g. through political financing) and undertake extensive lobbying in an effort to directly influence policy decisions (58). While this kind of power is often visible, it can also be hidden to policy outsiders and the public.

Structural power is usually hidden and includes political agenda-setting (16, 31, 58) where powerful actors reinforce and capitalize on social and political values, economic structures and institutional practices to limit the issues for consideration, those included in decision-making spaces, and consequently the scope of potential solutions (29, 30, 58). As such, powerful actors are often able to maintain the political status quo (30). For example, tobacco control policies are held off the political agenda in certain tobacco-producing countries (58). Rule-setting can be another element of structural power where existing economic and institutional structures/processes mean actors other than policymakers take on a rule-setting role (30, 58). For example, participatory budgeting allows community members to decide how to allocate part of municipal funds (59) and public-private partnerships can allow corporations to influence the design, implementation and enforcement of certain programs and rules (30).

Discursive power is usually invisible and is the most insidious form of power (58). It involves controlling how individuals perceive the world and shaping their interpretation and understanding of important issues (30, 31) such that significant problems and potential solutions are not only kept off the agenda, but also outside the minds of actors involved, including those directly affected by the problem (16, 58). Consequently, actors with less power can be prevented from elevating significant policy issues and/or potential solutions in their own real interest (16, 31). Framing is a key mechanism of discursive power for example, the food industry widely communicates an individual-level framing and narrative relating to peoples' diets, effectively excluding the need for supply-side solutions as appropriate options. Discursive power can also be generated at the system-level as a function of dominant ideas and institutional arrangements/practices that over time generate powerful cognitive and behavioural norms (58).

These different forms of power can be exercised by powerful actors and/or emerge deterministically at the system-level via eight distinct but often interdependent *mechanisms* (58). These include ideologies (e.g. the neoliberal political 'project'); values (e.g. individual freedom); knowledge and evidence (e.g. corporations funding education and research 'made to specification'); perception and preference-shaping (e.g. issue framing and narratives disseminated through corporate foundations, think tanks, opinion leaders and media capture); organizational structures (e.g. institutionalization of corporate participation in government agencies, committees and commissions); relationships (e.g. revolving doors between government, corporate lobbying and corporate political donations); rules (e.g. trade agreements and investment treaties); and norms (e.g. prioritization of economic over health objectives in political decision-making) (58).

Dimensions of power include different *levels*— international, national or sub-national — where power resides or is contested (58). Notably, for example, the determinants of health are increasingly recognised to arise from decisions made at the international level (60). *Spaces* of power are defined as formal or informal

opportunities where actors can ‘potentially affect policies, discourses, decisions and relationships’ relevant to their interests (16, 58). Spaces may be closed, open, invited, or claimed and are interdependent, evolving over time as actors and ideas strive for legitimacy (16, 58). The World Health Assembly for example is a formal invited space where power is exercised shaping how global health issues are understood, agendas are set and decision are made (61). Important health-relevant decisions are also made in spaces closed to health actors (e.g. WTO forums) (58).

The *outcome* of power may be a *policy decision* defined here as any kind of policy action- optimal or suboptimal (58). Alternatively, the outcome may be a *policy non-decision*, defined here as a voluntary decision not to act (e.g. decision-makers deliberately prioritize economic over health objectives); an involuntary failure to act (e.g. health policymakers are forced not to pursue a desired measure to avoid a trade dispute); or inaction due to a psychological boundary issue (e.g. supply-side policy options may not be considered by policy actors since they do not align with the dominant interpretation of NCDs as an issue of individual risk and responsibility (58).

Lastly, different broader political, economic, socio-cultural or situational *contexts* can dampen or activate different mechanisms of power resulting in different outcomes. For example, LMICs can have limited financial, organizational, technical and strategic capacities to effectively exercise instrumental power to balance both their economic and health objectives during trade rules or agreement negotiations (62).

An additional overarching *paradigms* variable was added to the framework after applying the framework in the realist review presented in Chapter Four. This was done to reflect the broad influence of paradigms at the system-level on processes of power in health policymaking.

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CHAPTER THREE: METHODS

CHAPTER OVERVIEW

This chapter describes the rationale for selecting the methods used in this thesis as well as the methods themselves, with a particular focus on the specific challenges encountered during the data collection and analysis phases. Ethical considerations and a critical reflection on my positionality are also included.

3.1 REALIST REVIEW

3.1.1 Rationale for using a realist review method

Complex realist theory argues that reality results from ‘complex interaction between dynamic, open, stratified systems, both material and non-material, where particular structures give rise to certain causal powers, tendencies, or ways of acting’ (1), referred to by Bhaskar as ‘generative mechanisms’ (2). The realist review method attempts to translate this theory into useable tools for better understanding the interacting causal mechanisms – ‘the causal forces, powers, processes or interactions that generate change within an intervention including the choices, reasoning, and decisions that people make as a result of the resources provided to them’ (3) – driving complex social phenomenon. Realist methodology uses evidence to refine explanatory theories about how and why a complex situation leads to certain outcomes in particular contexts (4, 5). This approach was therefore considered useful to move beyond a description of the problematic trade and investment rules (visible), to developing a broader understanding of the political economy and power mechanisms (less visible) linking the international trade and investment system to NCD prevention policy processes and decisions, as well as the contexts in which these mechanisms operate (6). Central to realist approach is the recognition of context in shaping how and why certain outcomes do or do not occur (3). The realist approach emphasises purposeful searching for, and synthesis of, a wide range of evidence using different methods and various disciplines (including public health, social epidemiology, economics, international law and political economy), to establish these mechanisms and contexts, which is particularly useful given the multi-disciplinary nature of trade and health research. Further, the realist approach offered a method that links up existing research to develop a more complete picture of the complex relationships between the international trade and investment system and NCD prevention policy.

The realist review was undertaken to map existing evidence against theories grounded in the conceptual framework developed for analyzing power in health policy processes with the purpose of better understanding how the power relations between trade, health and corporate actors have emerged and as such, why NCD policy non-decisions persist.

3.1.2 Methods

The review (which was subsequently separated into two reviews) was conducted according to an adapted protocol based on Pawson’s five iterative stages: identifying and articulating the explanatory theories; searching for and appraising the evidence; extracting the data; synthesizing the evidence; and drawing conclusions (7). These stages are outlined in the following sub-sections. The reporting of both reviews adhere to RAMSES publication standards (8).

3.1.2.1 Initial scope of the literature and explanatory theory development

A context-mechanism-outcomes configurations (CMOs) is an explanatory theory about how a particular causal mechanism works in a certain context to lead to specific outcome (3) and reflects the core analytical units of realist evaluation (3). To develop an initial set of explanatory theories, a rapid scoping of relevant literature in Google Scholar and Scopus was conducted as well as citation tracking, snowballing and a grey literature search (5). Relevant explanatory information from different sources was mapped against the conceptual framework in an iterative process of preliminary theory development (5). Like others, I initially found it challenging to describe real-world phenomena in strict CMO configurations (4, 9, 10). Often it was unclear whether what I was describing was really the mechanism or part of the context affecting the mechanism or simply a feature of the underlying trade and investment system. After discussion with experts within the Realist and Meta-narrative Evidence Synthesis: Evolving Standards (RAMSES) Research Group, I decided to move away from attempting to describe the preliminary explanatory theories strictly within the CMO construct. Instead, while I broadly applied the realist logic to guide theory development considering 'IF context A includes... THEN mechanisms X, Y, Z are activated LEADING TO outcome O' (22, 23) and many of the resulting preliminary explanatory theories were constructed to include one explanatory mechanism and one or multiple outcomes (4), I did not limit theories to only those that could be expressed in this way since alternative explanatory constructs were also informative. Additionally, contextual elements were mostly not embedded within the initial explanatory theories, rather a preliminary list of potentially relevant contextual factors was developed alongside the explanatory theories. This approach was taken since multiple contextual factors were considered to potentially affect the behaviour of a single mechanism. During the course of the realist review process, and as my thinking developed, many of the explanatory theories unravelled and were reconstructed multiple times.

3.1.2.2 Searching and appraising the evidence

Main search

A systematic review of the literature was carried out with the aim of identifying the most relevant evidence to support or dispute the elements within the initial set of explanatory theories. In reality, the explanatory theories themselves evolved through the process of developing the main search strategy, which in turn led to further refinement of the search strategy concepts. Initially, the review sought to identify studies that focused on how *formal* international trade policies, processes and structures might directly empower corporations to influence NCD prevention policy processes and decision. However, as the explanatory theories developed, the literature search evolved to also identify research that elucidated the '*informal*' mechanisms of power facilitated by the modern trade and investment system and used by corporations to influence health policy decision-making.

The final search strategy included combinations of search and indexed terms for the concepts of international trade and investment liberalization, regulatory chill, policy process, health-relevant transnational corporations and three trade-sensitive health policy areas considered relevant to NCD prevention: nutrition, tobacco control and alcohol regulation (5) (Appendix One). These concepts were developed iteratively with repeated testing for appropriateness in MEDLINE, review of search results, refinement of explanatory theories and subsequent concept development (5). Once the concepts were established, the search terms were also developed iteratively, again through repeated testing in MEDLINE, Global Health, Econlit, SCOPUS, Web of Science and PubMed, to balance the need for reasonable sensitivity and specificity (considering project time constraints) and the realist approach of searching broadly (5).

Systematic searches in all six databases were conducted in January 2020 and limited to English language publications between 1st January 2008 - 15th January 2020. This time constraint was deemed reasonable given that trade and health research was relatively limited prior to 2008 (11). Bibliography searching was conducted for studies identified as specifically focused on THCCs' use of the international trade and investment system to influence NCD prevention policy decisions since they were considered particularly important for theory development and bibliography searching ensured I included any further relevant articles that may not have been captured in the initial database search.

I also conducted searches in Google and Google scholar to identify material not published in journals. Finally, online repositories of relevant institutional websites including the WHO, WTO, United Nations Conference on Trade and Development and the International Institute of Sustainable Development were searched for grey literature, selected on the basis of relevance to the initial explanatory theories.

All articles were downloaded to an Endnote database and duplicates removed. Electronic searches yielded 1585 results. After duplicates were removed, 940 unique items remained from the database search. An additional 51 items relevant to corporate power in health policymaking facilitated by the international *trade* system; and 53 items relevant to corporate power in health policymaking facilitated by the international *investment* system were identified through bibliography searches, citation tracking and searches of Google/Google Scholar and institutional websites (5).

At this stage an initial rapid scoping of included literature ascertained that the scope of the review was simply too broad to allow for in-depth analysis in a single review paper. Therefore, the decision was taken to divide the work into two stand-alone realist reviews. The first review presented in Chapter Four, focuses on how and why the international *trade* system may facilitate corporate power to influence nutrition, tobacco control and alcohol policy areas. Chapter Five focuses exploring how and why the international *investment* system may facilitate corporations to advance their interests within these policy areas.

Inclusion criteria

Consistent with Pawson's approach to realist synthesis, that inclusion of sources of evidence in both reviews was based on relevance to explanatory theories, whether the source material contains discernible 'nuggets' of evidence, and evidence of trustworthiness (12), no study was excluded based on a single aspect of quality (5). The criteria applied are outlined in Table 3.1.

Table 3.1: Realist review inclusion criteria

<p>Include the study if:</p> <ul style="list-style-type: none">• It contains 'nuggets' of evidence that provide insight into the review questions, such that even where the aims of the study diverge from the main focus of this review, if a 'nugget' of evidence relevant to the review questions is provided, this article is included. <p>AND</p> <ul style="list-style-type: none">• It is assessed to go beyond a superficial description or commentary, i.e. is a competent attempt at research, enquiry, investigation or study (13). This can include qualitative studies using key informant interviews and policy document reviews, surveys, expert legal analyses, case studies, reviews of primary research (if the method was stated) or descriptive models/frameworks (if based on primary data). <p>Exclude the study if:</p> <ul style="list-style-type: none">• The focus is on agricultural policy, food safety, genetically modified foods/GM food labelling, or biotechnology.• It analyses trade and investment agreements, WTO disputes but do not also explicitly analyze the impacts (or potential impacts) on health policy processes (prospectively or retrospectively) OR policy space• It examines how trade liberalization impacted on health determinants and outcomes but not on health policy processes.• Books and book chapters (since including these would expand the scope of the review beyond the available time and resource for this review and it was judged a reasonable assumption that the majority of key evidence would be published in journal articles or in grey literature).
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Given the realist approach and scarcity of studies specifically analysing how the international trade and investment system facilitates corporate power in NCD prevention policy processes and decisions, an intentionally inclusive approach was taken throughout the selection process. A first screening for both reviews was conducted with articles selected based on the test for inclusion outlined in Table 3.1 as judged by the titles and abstracts (5). Commentaries (unless based on empirical evidence or offering key anecdotal evidence), editorials, opinion pieces, conference abstracts, and data-free models/frameworks were excluded (5).

To ensure reproducibility and reduce possible confirmation bias in screening, a second reviewer screened 10% of all references at this first stage of screening in both reviews. Differences in opinion regarding evidential relevance or study quality were resolved via discussion. It was deemed that anywhere below 10% inter-reviewer discrepancies was acceptable given the complex nature of the source material. This was achieved in both reviews and as such, I conducted the rest of the first round of screening for inclusion alone.

For each review, full texts were retrieved for articles included after the first round of screening. Full texts were then assessed for relevance based on the test for inclusion (Table 3.1). Again, at this stage in each review, 10% of the full texts were reviewed by the second reviewer and 100% inter-reviewer agreement was achieved in both reviews. The remaining texts were therefore assessed for inclusion by me only. Ultimately 101 records/articles were included in the first review focused on the international trade system, and 87 records/articles were included in the second review focused on the international investment system. The number of records/articles retrieved, included and excluded at each stage of the screening process for each review is provided in the screening flow diagrams 3.1 and 3.2 below.

Figure 3.1: Screening flow diagram for review focuses on how and why the international trade system may facilitate corporate power in nutrition, tobacco control and alcohol policymaking.

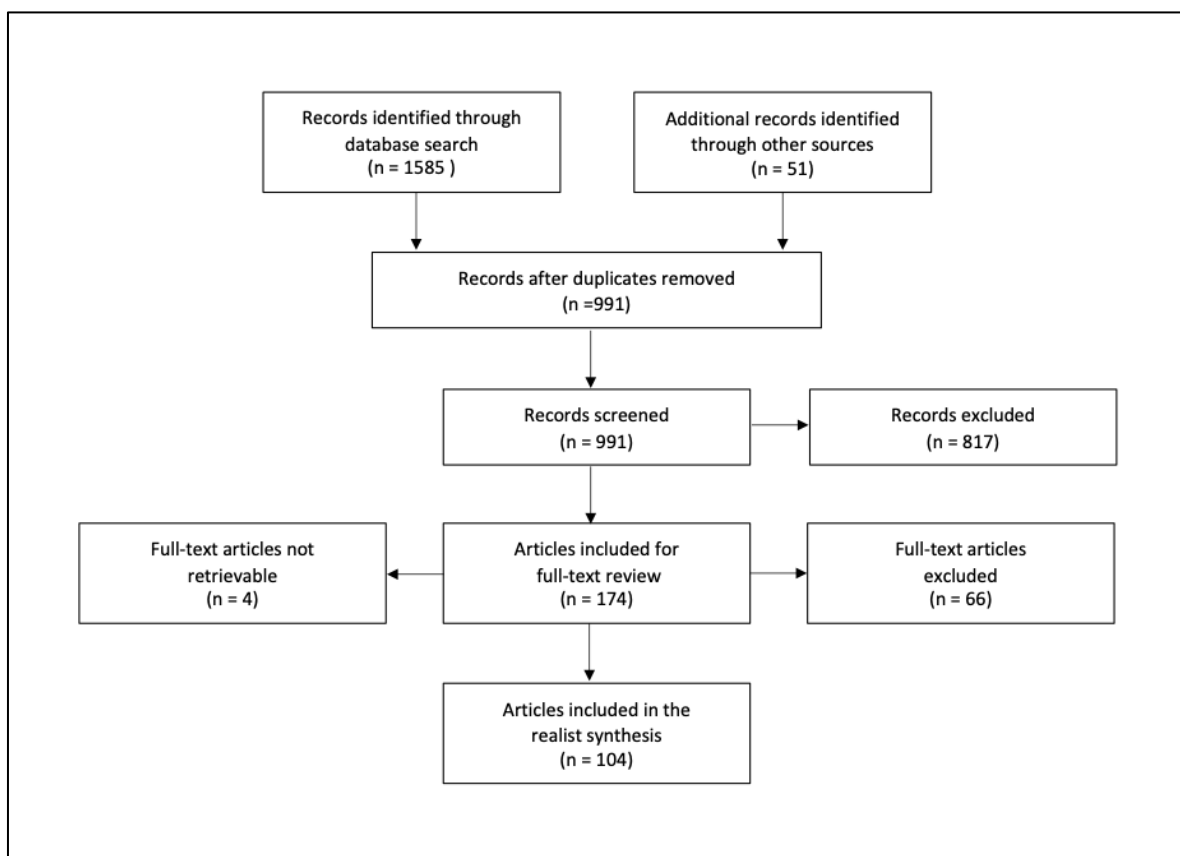
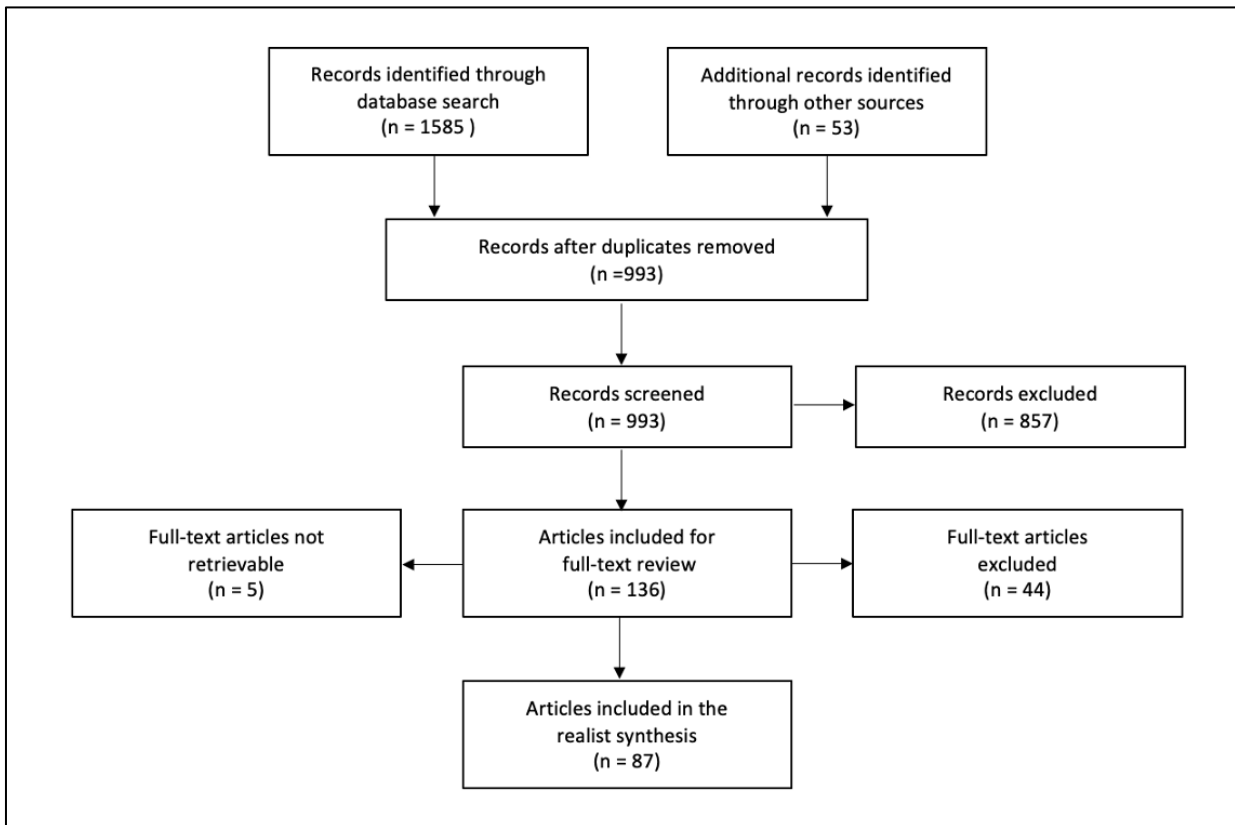


Figure 3.2: Screening flow diagram for review focused on how and why the international investment system may facilitate corporations power in nutrition, tobacco control and alcohol policymaking.



To ensure transparency in the screening process, a screening tool was used to document the rationale for final inclusion/exclusion in each of the realist reviews. This included a set of queries regarding study relevance and reliability adapted from the test for inclusion used in a realist review by Williams et al. (5, 14). Appendix Two provides an example of how the screening tool was populated. The diversity of included articles in terms of discipline and methods, made it impossible to apply a single recognized quality appraisal assessment tool to report on overall quality of the studies included in the review (5). Instead, I adopted the realist approach which refrains from judging each entire study on quality but instead judges each nugget of relevant evidence identified within a primary study on its reliability and relevance to theory development (5).

3.1.2.3 Data extraction, analysis and synthesis

At this stage, NVivo was used to facilitate a robust process of data analysis but also to improve transparency by providing an audit of the data analysis process (5). Within NVivo, ‘nodes’ were generated for each preliminary explanatory theory (5). I then extracted data from each included article that I considered relevant and useful for theory development, including data that supported or challenged each explanatory mechanism and the linked policy outcomes as well as relevant contextual factors (5). As noted by Punton et al, this process was very much an interpretive rather than mechanical one, requiring judgement on my part to decide how best to categorize the data (4). As I became more familiar with the source material, a number

of additional useful theories were identified for which I generated new nodes in N-Vivo and populated with relevant extracted data. The data extracted under each node were imported into a Word document. Patterns were then identified in the data and data analysis and synthesis to refine and develop the preliminary explanatory theories was undertaken. This was a highly messy process and one which may have been made easier but significantly more time intensive by using an Excel spreadsheet where extracted data is entered into rows allowing for easier searching and filtering of the findings using different criteria to help identify patterns in the data for refining explanatory theories (4).

Overall, despite the strategies mentioned to control the scope of the reviews and work within the given time and resource constraints, the realist review process proved much more time consuming than initially anticipated, potentially taking time away from the empirical work. It is also important to note that the quality of the explanatory theories developed in this work is highly dependent on the availability of data to support or challenge them. I identified significant gaps in research examining how trade and investment systems facilitate corporate power in health policymaking, and particularly limited evidence relating to context.

The final challenge identified in the reviews relates to the complexity of including inter-dependence and feedback between the mechanisms linking the trade and investment system to corporate power and influence in NCD prevention policymaking. While it has been argued that realism and complexity theory are highly compatible and complimentary (15), complexity means the impacts on NCD policymaking cannot be understood by considering the individual mechanisms in isolation. Westthorp (2012), Jagosh et al. (2015) and Punton et al. (2016) have attempted to partially resolve this challenge by conceptualizing mechanisms as 'levels of a system' (4, 15, 16), for example, inter-personal, organizational, society. They have also layered theories where an outcome at one level becomes the context at a higher level (16), linking causal mechanisms across the system making it possible to identify feedback mechanisms (4). Due to the additional time required, I decided against taking this approach as part of the realist reviews conducted in this PhD. Instead, I chose to apply complex systems methods (specifically system dynamics methods) designed and thoroughly tested to analyze complex problems, as part of the empirical component of this work. These methods are outlined later in this chapter and again in detail in Chapter Eight, the results are presented in Nine.

3.2 HEALTH POLICY PROCESS ANALYSIS

3.2.1 Rationale for using case study analysis

A single case study design was adopted for this research given the explanatory focus of this work and the associated need for in-depth exploration of how and why the international trade and investment system may facilitate corporate power within NCD prevention policy processes and decisions. Moreover, given the complex inter-connection between health policy processes and the socio-political and economic context in

which they arise (17), the case study approach is useful since it allows for investigation of these policy processes within the context that is essential for explaining them (18).

3.2.2 Methods

3.2.2.1 Case study selection

Selecting a low- or middle-income country case study context for this research was time consuming and challenging given the combination of political, economic and health characteristics required to allow for testing and potentially challenging the theories proposed in this thesis. South Africa, a middle-income country, was ultimately selected as the context for in-depth analysis since it most closely fulfilled these criteria. In selecting South Africa as the case study, a scoping review of South Africa’s trade and investment agreement and relevant health policy context was undertaken. Relevant country characteristics are outlined in detail below and why they contributed to the selection of South Africa as the case study for this work.

Trade and investment liberalization

After democratic transition in 1994, South Africa underwent a relatively rapid period of trade and investment liberalization in order to access foreign markets for South African goods and promote foreign direct investment (FDI) into the country. South Africa became a member of the WTO in 1995 to boost the country’s engagement in international trade and signed a Free Trade Area with the Southern African Development Community (SADC) in 1996, a further 22 bilateral investment agreements between 1997 and 2003 and a bilateral trade agreement with the European Union (EU) in 1999 (19). Through these international trade and investment legal structures, South Africa is subject primarily to WTO rules and obligations as well as international investment protection laws, including the investor state dispute settlement mechanism. South Africa’s current trade and investment agreement commitments are outlined in Table 3.2.

Table 3.2: South Africa’s Trade and Investment Agreements

Bilateral investment treaties currently in force:	- China
	- Zimbabwe
Multiple other BITS have been terminated including with the UK, Germany, France, Denmark, Netherlands, Spain, Switzerland.	- Sweden
	- Senegal
	- Russia
	- Nigeria
	- Mauritius
	- Korea
	- Italy
	- Iran
	- Greece
	- Finland
	- Cuba

Trade agreements with investment protection provisions	<ul style="list-style-type: none"> - EU-SADC EPA Group Agreement -Botswana, Eswatini, EU, Lesotho, Mozambique and Namibia – (2016) - SACU-US TIFA- United States (in force 2008) - TIDCA SACU-USA (2008) - SADC Investment protocol (2010) - EFTA-SACU FTA (European Free Trade Association) (2008) - Cotonou Agreement (EU) (2003) - EC-South Africa Cooperation Agreement (EU) (2004) - SADC Treaty (1993) - AU Treaty (1994)
WTO agreements	<ul style="list-style-type: none"> - GATS - TRIPS and DHa Declaration (2001) - TRIMS - GATS

Within this context South Africa has been subject to both trade and investment challenges. As outlined in the Introduction to this thesis, in 1997 forty pharmaceutical companies brought a domestic legal challenge against South Africa claiming the country's 1997 Medicines and Related Substances Control Amendment Act allowing the use of parallel importation and compulsory licensing of affordable generic medicines was in violation of TRIPS (20). The claim was subsequently dropped after massive domestic and international pressure. Since then South Africa has continued to advocate for TRIPS reform at the WTO to ensure access to affordable medicines.

The risk of investment arbitration is also within the political consciousness of South Africa, given the recent ISDS cases against Australia and Uruguay for proposed tobacco control regulations and South Africa's own previous exposure to two investor-state disputes (although not public health policy-related) that (along with other cases globally) prompted the South African government to review all South Africa's BITs in 2010. The review concluded that South Africa's BITs potentially opened the door for narrow foreign commercial interests to challenge legitimate, constitutional, democratic public policy in unpredictable international investor-state arbitration (21). Based on the review's recommendations, the South African government has formally notified for termination 14 existing BITs and instead developed a new Investment Act to provide investor protection. Together with the other SADC countries, South Africa participated in developing a new model BIT (21) that confirms South Africa's commitment to an open, transparent environment for foreign investment that supports sustainable development and international human rights law, allows South Africa to opt-out of ISDS in any future BITs, requires investors to exhaust local remedies before proceeding to arbitration, and provides the basis for government counter-claims and legal action against investors for treaty breaches (22). In 2019, South Africa made a submission to the United Nations Commission on International

Trade Law on ISDS reform in which it seeks a ‘paradigm-shift’ in investment law (23). Overall rebalancing protection between investment protection and government’s right to regulate in the public interest has become central to debates over future BITs. However, South Africa remained subject to potential investor-state arbitration under a number of ongoing BITs to which it is party, and under ‘survival’ clauses of 12 terminated or lapsed agreements.

This context means South Africa continues to be exposed to potential trade and investment challenges and creates awareness amongst policymakers in South Africa (including public health policymakers) of both WTO and BIT obligations and dispute risk. This allows for analysis of how these risks may be used by external actors, including industry and trading partners, to effectively influence public health policy decision-making and how they may be perceived and responded to by health policy actors.

Trade and investment liberalization, the food and alcohol environments and health impacts

Although research specific to South Africa is highly limited, trade liberalization has been associated with an increase in the importation of ultra-processed foods (UPFs) and alcohol. For example, the importation of soft drinks and processed snack foods (24) increased by 92 and 83 percent respectively between 1995 and 2010 and liquor imports increase by 167 percent between 2005 and 2009 (24). These trends are likely to reflect the adoption of the South African EU Free Trade Agreement (25-27). A more recent study found significant growth in sales of UPFs and beverages in South Africa between 2006-2019 (28).

The impacts of increasing consumption of ultra-processed foods, sugar sweetened beverages and alcohol in South Africa are significant. South Africans aged 15 and older are among the heaviest drinkers in the world on average (29). In 2015 alcohol was the fifth leading cause of death and disability in South Africa (30) accounting for approximately 7% of all deaths annually and 6% of disability adjusted life years (31) and alcohol is a key risk factor for sexually transmitted infections and interpersonal violence, two leading causes of deaths in South Africa (32-35). The high proportion of women reporting drinking alcohol during pregnancy correlates with South Africa having the highest rate of foetal alcohol syndrome globally (36). There is also a socio-economic dimension to alcohol-related harm in South Africa. While high-income earners have the highest drinking prevalence, low-income earners consume on average more alcohol, spend a greater percentage of their house hold income on alcohol and experience a higher burden of alcohol-related illness, injury and mortality (32, 37, 38). This inequitable distribution of alcohol-related harm is compounded by persistent inequalities in the health and social systems, remnants of South Africa’s history of colonial oppression, apartheid dispossession and ongoing post-apartheid challenges (32, 39). Moreover, harmful use of alcohol amongst low income-workers has deep political roots in apartheid systems of social control where

farm workers were given alcohol as a benefit of employment, known as the 'dop' system, institutionalizing mass alcohol consumption (40).

Along-side continuing high levels of underweight and nutritional deficiencies, overweight and obesity amongst children and adults has significantly increased in South Africa in recent years, with a parallel increase in the per capita food supply of fat, protein and total calories (41). An estimated 68% and 31% of South African women and men respectively, are overweight or obese (42). Similarly, at 13% childhood overweight is on the rise in South Africa (42) and is more than double the world average (43). In 2000, an estimated 36,504 deaths (7% of all deaths) in South Africa were attributed to excess body weight (44) and overall, NCDs now account for 51% of all deaths annually, the majority of which are attributable to cardiovascular disease, cancer, chronic respiratory diseases, diabetes and injuries (45).

Given the rising burden of NCDs and persistently high alcohol-related harm in South Africa, healthy diets and reducing harmful alcohol consumption have become key public health priority reflected in the Strategy for the Prevention and Control of Obesity in South Africa 2015-2020 and Strategic Plan for the Prevention and Control of Non-Communicable Diseases 2013-17, which both outline the aim of taking a multi-sectoral approach to address NCDs, obesity and alcohol harm reduction (46, 47). Existing recognition of the significant public health challenge of NCDs in South Africa and the government's stated commitment to tackling them and their risk factors including unhealthy diets and harmful alcohol consumption, is another important reason for selecting South Africa as a case study since it allows for investigation of any malalignment between stated priorities relating to reducing unhealthy diets and alcohol-related harm and the necessary policy action to achieve them (outlined below).

NCD prevention policy focal areas

The specific 'case' under investigation in this research is recent or current NCD prevention-relevant nutrition and alcohol policy non-decisions (voluntary decision not to act, involuntary failures to act, or inaction due to a psychological boundary issue (5)) in South Africa. The decision to focus on nutrition and alcohol policy as opposed to also including other relevant NCD policy areas such as tobacco control was taken to ensure in-depth analysis of the selected policy areas could be undertaken, and based on preliminary discussions with policy insiders in South Africa and their opinions on which policy areas would be most useful to study. While investigating the suitability of South Africa as a case study an initial scoping review of the trade and relevant health policy context in South Africa, it was identified that although the South African government has adopted a number of internationally recommended policies for the prevention and control of NCDs in the areas of nutrition and alcohol (48, 49), there are certain policies/regulations that have been proposed but significantly delayed in the policy process, drafted but not progressed, or adopted but re-formulated such

that their effectiveness is reduced (see Table 3.3). Previous research has also identified a broad lack of necessary multi-sectoral action for NCD prevention (49), including a lack of policy coherence between trade and investment policy and NCD prevention objectives in the areas of nutrition and alcohol harm reduction (19).

Table 3.3: Brief overview of alcohol and diet-related NCD prevention policy non-decisions in South Africa

Policy or regulation	Status
Ban on marketing of unhealthy food and non-alcoholic beverages to all school aged children	Drafted in 2014, not progressed.
Mandatory front of pack nutrition labelling of food and non-alcoholic beverages	Drafted in 2014, remains under development.
Tax on sugar sweetened beverages	Introduced in 2019 at 11% despite evidence indicating 20% would be more effective.
Ban on Marketing of Infant Formula	Adopted in 2012 but policy process significantly delayed.
Ban on marketing of alcoholic beverages	Currently under the Liquor Act of 2003 it is prohibited to advertise alcohol targeting minors or to use false or misleading advertising (50). A new Control of Marketing of Alcoholic Beverages Bill drafted in 2013, includes provisions to ban advertising, sports sponsorships and promotion of alcoholic beverages (51) has not progressed.
Health warning labelling on alcoholic beverages containers	In 2017 draft amendments to existing health warning labelling regulation (2007) were published, increasing the size of warning labels and requiring regular rotation of seven health warning messages (52), but were later repealed in 2020.
Increasing the drinking age to 21, banning alcohol trade within 100 metres of schools and churches, liability clauses for alcohol retailers.	The draft Liquor amendment Bill of 2016 (53) contained these among other regulations including restrictions on marketing of alcoholic beverages, but has been stalled.
Control the production and sale of certain alcoholic products by changing the alcohol content of what was deemed as liquor from 1% of volume to 0.5% and to regulate the import and export of certain alcoholic products.	The Liquor Products Amendment Bill 2016 (54) contained these among other regulations has undergone three revisions and remains under consideration.

Additionally, given its position geographically, infrastructure and relatively open economy, South Africa is a strategic hub from which transnational health harmful commodity corporations (THCCs) can develop new markets across Africa (32). This combined with South Africa’s recognition as a regional policy leader, may mean THCCs have particular interest in securing and maintaining a favourable regulatory environment in South Africa to prevent regional and continental policy transfer.

In summary, NCD prevention policy non-decision-making in South Africa was selected as a case study to conduct in-depth investigation of how the international trade and investment system may facilitate

corporate power and influence within domestic NCD prevention policy processes given a combination of characteristics within which the theoretical propositions made in this thesis are located (17). These characteristics include a relatively open economy; exposure to international trade and investment rules and dispute systems; health policy actor awareness of trade and investment obligations and dispute risk; recognition of unhealthy diets and alcohol related harm as public health problems requiring policy action; and significant multinational food and alcohol corporate presence in South Africa with interests to limit the regulatory environment. This then allows for the case study to be used to confirm or extend proposed theories, or challenge them and ascertain whether some alternative explanations are more relevant, allowing this work to make a contribution to both knowledge and theory building (17).

3.2.2.2 Data sources

Rationale for using in-depth interviews

Understanding the often hidden aspects of health policymaking requires gaining insight from policy actors directly involved in the process, as such in-depth semi-structured interviews were selected as the primary source of evidence for the case study. Using the semi-structured interview structure allowed for probing to gain deeper explanatory insights into the policy process and factors influencing it and for stakeholders to provide perspectives beyond the boundaries of my questions.

Due to the highly political nature of the topic area and highly unequal power relations between stakeholders, one-on-one interviews were selected over focus groups. One-on-one interviews allowed me to capture divergent views and experiences; avoided the skewing effect of dominant stakeholders that can occur in focus groups; through offering anonymity it provided the best chance of frank and open discussions and exposure of participants views and experiences even when they may diverge from accepted norms (55, 56). Finally, one-on-one interviews were also most feasible given the significant time commitment required from time-pressured key informants to engage in longer group discussions, or model building (as could have been used for the qualitative system dynamics modelling component of this work discussed later in this chapter).

Sampling strategy

Stakeholders (or policy actors) are defined as an individual or group with a substantive interest in the policy issue, including those with some role in making a decision or executing it (57). Stakeholders were selected to participate in this research purposively on the basis of their knowledge, experience or interest relating to diet-related NCD and alcohol harm reduction policy issues and processes with potential relevance to international trade/investment or their involvement in trade and investment policy development and negotiations. In order to map a representative sample of the broad range of key stakeholders, an initial stakeholder mapping was undertaken with input from local experts within academia (nutrition and alcohol

policy researchers) and the Department of Health (DH). Stakeholders were categorized into six groups based on their institutional affiliation which later expanded to nine groups through snow-ball sampling. Given the cross-cutting nature of the research topic identifying key stakeholders and recruiting them from the wide range of possible stakeholder groups (e.g. various different government departments) was challenging and time consuming. Table 3.4 presents a brief outline of the rationale for including each stakeholder group.

Table 3.4: Rationale for selection of stakeholder groups

Stakeholder group	Rationale for inclusion
Department of Health	Involved in both diet-related NCD prevention and alcohol harm reduction policy making, implementation and monitoring.
Department of Trade and Industry	Responsible for the national trade and investment strategy and policy development as well as trade and investment agreement negotiations. Also holds primary responsibility for alcohol regulation under the Liquor Act (2003).
National treasury	Responsible for developing the tax on sugar sweetened beverages.
Department of Agriculture, Forestry and Fisheries	Involved in food system policy and alcohol regulation.
Department of Social Development	Involved in developing and implementing substance abuse services and facilities programmes, including relating to alcohol abuse.
Inter-governmental organizations, non-government organizations and civil society organizations	Active in health policy processes by providing technical support, research and policy advocacy and can provide important insights into policy processes and factors influencing them that government officials may not be willing to disclose.
Multinational food and alcohol corporations (originating both from within and outside South Africa)	Engaged in both trade and diet-related NCD prevention and alcohol policy processes via both formal and informal channels. Also involved in trade and investment policy and agreement negotiations.
Academia	Engaged in providing evidence to support diet-related NCD and alcohol policy development. Academics have also played an important role in advocating for policy change to address unhealthy diets and alcohol related harm. Provide valuable historical overview of policy development/change and may also be another source of important insights into policy process and factors influencing them that government officials may not be willing to disclose.
Health Attachés for South African Permanent Mission to the United Nations Office in Geneva or South African Embassy in Washington DC (current or past)	Involved in global health diplomacy at the international level. This may include involvement in trade discussions/negotiations.

Recruitment

I began contacting stakeholders identified during the stakeholder mapping, via email (and telephone if necessary), introducing myself, the purpose of the research, why they'd been selected for participation in this research and inviting them to participate in a one-hour semi-structured interview. In addition, they were provided with a standard study information sheet providing details about the purpose and aims of the

research. For many of the DH stakeholders, assistance was provided from a DH employee to make the first contact, introducing me and the research, after which time I followed up with an additional email including the details outlined above. Being introduced in this way or mentioning the name of a common acquaintance who had provided me with the details of the potential participant increased the likelihood of receiving a response to my initial recruitment email. During this initial round of recruitment, I prioritized those identified during stakeholder mapping who were most closely involved in relevant health, trade and investment policy processes. Thereafter, participants were identified through snow-ball sampling of stakeholders identified by participants during each interview. To ensure I had included as far as possible all relevant stakeholders, at the end of each interview participants were asked if there were others they would recommend to participate in this research. This proved useful for not only identifying new potential participants but also confirming the appropriateness of those already included in the research. In total 77 stakeholders were contacted and invited to participate in the research. At least two additional follow-up attempts were made to contact non-responders by emails and/or phone. In total 39 potential participants agreed to participate in an interview, 25 did not respond and 13 declined to be interviewed but often referred me to others more appropriate or simply more 'junior' than themselves. The challenges of 'elite' interviewing are discussed in more detail below within the Reflexivity section.

Participant characteristics

Thirty-eight interviews were initially conducted with 39 participants (presented in Table 3.5) between April 2019 and February 2020 either in-person in Cape Town/Pretoria or via phone/teleconference. The DH and Department of Trade and Industry (DTI) were intentionally over-represented in the participant group given their respective primary health and trade/investment mandates. Given the multi-sectoral nature of unhealthy diets and alcohol-related harm, it was important to include a range of government departments. However, significantly fewer participants were recruited from the National Treasury, Department of Agriculture Forestry and Fisheries (DAFF) and Department of Social Development (DSD) as compared to the DH and DTI given their relatively limited or isolated involvement in relevant nutrition or alcohol-related harm reduction policies/regulations. All government participants were Chief or Deputy Directors within their respective departments with one Deputy Director General. Significant effort was made to conduct interviews with government stakeholders in both senior technical and more political roles (including Director Generals, Ministers and Health Attachés), however it was extremely challenging to gain access to the latter group despite repeated attempts including with assistance from a DH employee, as is frequently the case with accessing 'elite' interviewees (56, 58). Industry representatives were governance and regulatory experts; and inter-governmental organizational (IGOs), non-governmental (NGO) and civil society organization (CSO) representatives had each been engaged in recent relevant nutrition or alcohol policy processes in South Africa.

Table 3.5: Summary of study participants

Stakeholder group	Key stakeholder invited for interview	Key stakeholder interviewed			Total interviewed	Total included in the analysis
		Nutrition	Alcohol	Cross-cutting		
Department of Health	17	7	1	3	11	10
Department. of Trade and Industry	14	0	2	6	8	7
National treasury	4	1	0	1	2	2
Department of Agriculture, Forestry and Fisheries	6	2	0	0	2	2
Department. of Social Development	1	0	1	0	1	1
Inter-governmental organizations, non-government organizations and civil society organizations	8	4	2	0	6	6
Multinational food and alcohol corporations (originating both from within and outside South Africa)	10	2	2	0	4	3
Academics	11	3	2	0	5	5
Health Attachés for South African Embassy in Geneva or Washington DC(current or past)	6	0	0	0	0	0
Total	77	19	10	10	39	36

3.2.2.3 Data collection

Aware of my lack of familiarity of the study context, I spent six months in South Africa during data collection to deepen as far as possible my understanding of the policy context. After reviewing the literature included in the realist reviews and relevant policy documents, reports and media releases in the initial scoping exercise of the South African trade and NCD prevention policy context, semi-structured interview guides unique to each stakeholder group were developed. These were designed to ask, wherever possible, open-ended ‘how’ and ‘why’ questions relating to stakeholders’ perceptions of the risks and benefits of the international trade and investment system for NCD prevention policy and the associated health determinants and outcomes; their perceptions of how the international trade and investment system influence diet-related NCD and alcohol harm reduction relevant policy processes in terms of participants interests, values, knowledge, perceptions and power in relation to NCD prevention policy decisions; and the strategic approaches adopted by stakeholders to achieve their desired trade/health objectives. Notably, given the potential sensitivity of discussing power in policy processes, as suggested by Erasmus and Gilson (59), I avoided very direct questions on power, instead, using questions considered to provide relevant information in a more oblique way. The semi-structured interview guides were reviewed by my PhD supervisors and subsequently tested with a local DH policymaker and adapted accordingly before finalizing (Appendix Three). However, the interview guides did evolve to some extent throughout the data collection phase of the research as I became more familiar with the most effective language and ways to ask questions such that they were both understood by

participants and not perceived as overly confronting. For example, changing from 'why' questions to 'how' questions proved useful to avoid defensiveness on the part of the interviewee (17). I also attempted to check answers to questions to identify additional issues that needed following up during the interview in order to deepen my understanding (60).

All interviews were conducted in English and took place at participants' workplace in either Cape Town, Pretoria or via telephone when an in-person meeting was not possible. Prior to commencing all in-person interviews, participants were again provided with the standard information sheet outlining the purpose and aims of the research and were encouraged to ask any additional questions. During phone interviews the purpose and aims of the study were explained verbally. Written consent was obtained before all in-person interviews. Verbal consent was obtained before all telephone interviews unless written consent had already been given. Written consent was obtained for all except three telephonic interviews on follow-up. After two stakeholders failed to respond to repeated requests for written consent on follow-up after each interview, the decision was made to exclude these participants from the analysis. Additionally, one stakeholder indicated on their written consent form that they did not give consent for the information they provided to be included in my research publications and were therefore also excluded from the analysis. However, notably little insightful information was in fact shared by these stakeholders in their interviews so excluding them did not alter the findings of the research in any substantive way. Ultimately 35 interviews with 36 stakeholders were included in the analysis as is reflected in Table 3.5.

At the start of each interview, I introduced myself, the aims of the interview, reminded the interviewee that they were free to stop at any time or decline to answer any question they did not feel comfortable responding to and gave them an opportunity to ask any questions before starting the formal interview. During each interview I attempted to prioritize the most important questions for each specific stakeholder to prevent time constraints limiting the quality of the data collected. I attempted to avoid leading questions and frequently used probing questions to elicit more information or deeper explanations for given responses.

Each interview lasted on average one hour and all except two interviews were recorded. One stakeholder provided brief written responses to key research questions but refused to be interviewed in relation to these questions (and was later excluded from the research since they did not give consent for the information they provided to be used in research publications). I took notes during (and at times after) the interviews to assist in identifying further topics for exploration either in the same or subsequent interviews. Care was taken to take detailed notes of the two interviews that were not recorded. One participant responded in writing to key interview questions but declined to be interviewed in relation to these questions. Each recorded interview was later transcribed in full. Following each interview, the audio recordings and notes were reviewed to inform adaptations to questioning for subsequent participants and for identifying topics for

further exploration as well as the need for further interviews. I also took field notes in preparation before most interviews to ensure I covered any new or particularly important topics with each participant within the time available. Each recorded interview was later transcribed verbatim by a transcriber and I subsequently checked them for accuracy. I also typed out written notes in full for use in the analysis.

3.2.2.4 Data management

Audio files of recorded interviews were saved on my personal drive, password-protected, on the LSHTM server. Audio files were encrypted and password protected when shared with the transcriber. All files shared with the transcriber were destroyed once transcription was completed. Interviews were anonymised and given unique identification code and all names of participants, their affiliated organizations, and names of other individuals mentioned during the interview were removed from all transcripts. Although I did not transcribe the interviews myself, I checked them for accuracy and in doing so replayed the audio files to familiarize myself with the data.

3.2.2.5 Analysis

A thematic analysis method was the first method adopted to analyse the qualitative interview data collected in this research. Thematic analysis was selected given its relative accessibility in providing a method for coding and analysing qualitative data systematically and for its theoretical flexibility allowing for both deductive/theory-driven as well as inductive data coding (61). As such thematic analysis provided a useful method to assist in developing a detailed understanding of how the international trade and investment system facilitated corporate power in NCD prevention health policy processes and decisions in South Africa. The five-stage framework approach recommended by Pope et al (2000) for analysing policy-relevant data was broadly adopted: familiarisation with the data; identifying a thematic framework; indexing; charting; mapping and interpretation (62).

I began familiarizing myself with the data during data collection at which time I reviewed the audio recording and notes made during each interview to start to identify key ideas and recurrent themes in the data as well as identify gaps and further lines of enquiry. To deepen the analysis and strengthen external validity, an initial coding frame was initially developed based on the forms and mechanisms of power outlined in the conceptual framework for analysing power in health policy processes developed earlier in this research (17, 63). In addition I considered Schram et al's described theory on the three different forms of regulatory chill (these are detailed in Chapter Seven) (64). Within NVivo, 'nodes' were generated for each code. While I used this conceptual framework and theory to develop and deepen my understanding of the problem I also tried to use the data collected to challenge my developed theory and when the theory did not 'fit' with the data, I instead turned to inductive analysis rather than trying to fit the data into the framework. Additional codes

of explanatory mechanisms that were not captured within the conceptual framework were subsequently developed inductively during the data extraction and analysis process.

In the indexing step, all transcriptions and interview notes were coded in NVivo (version 12.6.0) to enable an iterative coding process while still maintaining transparency. To improve transparency in the coding process, identify any missing explanatory mechanisms and to show the basic analytical frame has meaning that extends beyond myself as an individual researcher (65), two transcripts were reviewed and coded by one of my supervisors. We subsequently reviewed each of these transcripts together, line by line, to discuss and resolve any discrepancies in coding. Given the interpretive nature of analyzing power in qualitative data and the usefulness of having knowledge about the context and non-verbal cues that comes with being the data collector, there were some differences in the way we each coded the data, however these were resolved through discussion which also promoted greater reflexivity on my part.

During the charting phase all coded extracts were then transferred into separate Word documents and clustered together according to themes. Within each theme, data were rearranged as patterns or conflicting evidence was identified across the data to build explanations and ensure I addressed rival explanations (17). In separate Word documents for each theme, distilled summaries of the perceptions and experiences of stakeholders along with key quotes were charted. These then formed the basis of the two papers presented in Chapters Six and Seven of this thesis. During the 'writing up' phase, themes and relevant data extracts were organised and re-organised to ensure each paper told an accurate, convincing and coherent story about the data that addressed the research question in a meaningful way. Some further analysis of the themes and data also occurred at this stage.

3.2.2.6 Triangulation

A review of relevant policy documents was also undertaken to contextualize and triangulate evidence provided in the interviews for the thematic analysis. These included the National Development Plan 2030, Industrial Policy Action Plan, South African Trade Policy and Strategy Framework, Strategy for the Prevention and Control of Obesity in South Africa 2015-2020, Strategic Plan for the Prevention and Control of Non-Communicable Diseases 2013-17, The National Policy on Food and Nutrition Security for the Republic of South Africa, and The National Drug Master Plan 2019-2024. At the time of this research South Africa did not have a national strategy to reduce the harmful effects of alcohol use.

3.3 SYSTEM DYNAMICS MODELLING

3.3.1 Rationale for using system dynamics modelling methods

During the course of this research, the causal complexity of NCD prevention policy (non-) decisions and the role of corporate power in the context of the modern international trade and investment system, became increasingly apparent. NCD prevention policy (non-) decisions are the result of multiple inter-dependent context-sensitive causal processes involving various political economy factors and different forms and mechanisms of power across different levels (political, economic and institutional). While traditional methods applied to health policy process analysis are well suited to in-depth analysis of individual causal mechanisms, they are restricted in their capacity to manage the feedback and interdependence between mechanisms that is fundamental for understanding how corporate power in NCD prevention policymaking has become entrenched over time (66). System science considers that an observed phenomenon, such as diet-related (DR) NCD policy inaction, emerges from the system structure where the phenomenon cannot be explained by examining parts of the system in isolation, rather the dynamic relationships between the parts are fundamental to understanding causality (67, 68). A systems thinking approach that takes a 'holistic, broad, long-term, dynamic view' (69) considering the function of the system as a whole and the dynamic feedback between its components, has been promoted as useful for understanding such complex public health problems and informing effective action (70-81). Systems thinking approaches (using the system dynamics methods discussed below) have for example, been used to understand the drivers of obesity and other forms of malnutrition (82-84), inequities in healthy eating (75), tobacco control policies (85-87), infectious disease epidemiology (88, 89), NCD management (90, 91), neonatal mortality (92), the social determinants of health (93) and have been proposed for use in analyzing the commercial determinants of NCDs (80).

A broad range of systems thinking methods aiming to improve understanding of complex problems are available. System dynamics offers one of the most sophisticated systems thinking methods available and was selected for use in this work for a number of reasons. Aligned with a critical realist philosophy, system dynamics involves integrating both agency and structure to understand causation and attempts to find a balance of both objectivism and subjectivism (68). System dynamics is also pragmatic in that it assumes despite the real world exhibiting a high degree of complexity, it is possible to capture that complexity in a model which can be used to better understand, analyze and predict dynamic real world behaviour (94-96). System dynamics modelling (SDM) allows for the consideration of feedback between variables, non-linearity and time delays in cause and effect relationships between variables, and emergent effects and patterns across the system over time (69). SDM involves visually describing the causal structure of a system problem by defining the feedback relationships between elements in causal loop diagrams (CLDs) (97) to help capture the interconnected, dynamic and evolving nature of the problem (69). Where CLDs visualize the

variables/system elements, the causal relationships between them (including feedback where relevant) with an indication of their relational polarity, signifying the effect of change one variable has on another (98, 99).

Adopting a formal system dynamics approach to model conceptualization by following guidance on methods for problem articulation (67), data collection and analysis (98), model development (55, 99, 100) and model validation (99, 100), this work develops several causal loop diagrams (CLDs) representing the *DR NCD policymaking system* to visualize and analyse the various inter-connected and dynamic political economy and power-related barriers to DR NCD policy action. This is a relatively novel use of SDM methods since while these methods have been applied to assess complex public health policy problems and the impacts of health policy decisions (as shown in the examples outlined above), they have, to the best of my knowledge, very rarely been used to assess a health, or specifically and NCD prevention policymaking process itself. I identified just one previous study by Waqa et al (2017) that has applied SDM methods to understand aspects of the policymaking process which attempts to identify the causes and consequences of poor evidence use in food-related policymaking in Fiji (101).

The decision to focus only on DR NCD prevention policy for this part of the research was taken given that during the data collection phase of this work I had been able to access and interview a greater number of stakeholders involved in DR NCD prevention policymaking as compared to alcohol harm reduction policy and therefore had more data in this specific policy area to draw on for model building.

I accept Forester's warning that qualitative SDM of a complex problem in CLDs alone (without moving to quantitative model simulation) cannot quantify predictively how interventions will affect the dynamic behaviour of the system over time. However, I suggest, as others have, that for problems involving multiple 'soft' system elements/variables (such as is the case in public health policymaking) for which numerical data is not available and quantitative modelling to predict system behaviour would not be worthwhile, qualitative modelling can give a very useful sense of the system dynamics and help identify potential high leverage points in the system to drive desired system change (102).

3.3.2 Methods

3.3.2.1 Problem articulation and system boundaries

A key initial step in SDM is to define the problem being investigated. The aim of this process is to focus the research such that the system boundaries can be delineated and to provide sufficient details such that the problem being explored is endogenously produced. This then guides which key concepts and system elements (variables, links, delays and feedbacks) to include or exclude from the CLDs (67, 100). Problem definitions evolve iteratively during the research process as understanding of the problem deepens (103). In

this work the very initial problem definition identified early on in the research process focused largely on how transnational corporations may be empowered by international trade and investment agreement rules and dispute mechanisms to restrict policy space and generate a chilling effect on DR NCD. However, this initial problem definition developed significantly as I become more familiar with the research area through conducting the realist review and policy analysis work, as well as through the modelling process itself. It became clear during the course of undertaking this work that, while important, trade and investment rules were only one aspect of the ways in which the international trade and investment system can affect NCD policy action. The trade and investment system also influences (and is influenced by) various political economy factors and the associated forms of power active in NCD prevention policymaking spaces. As such, the final problem definition reached for this part of the research is as follows:

Trade and investment liberalization is a key component of most middle-income countries' economic development agenda. There is however growing recognition of tensions between trade and investment policies and DR NCD prevention objectives. Corporations have used their economic power to shape the international trade and investment system in their own interest, contributing to the consolidation and growth in economic power of ultra-processed food corporations, which in turn incentivizes governments to involve them and more heavily weight their interests in DR NCD prevention policy processes across sectors. Trade and investment rules may also restrict domestic policy space and provide corporations with legal tools to influence health policy decisions. Over time these inter-linked processes may create barriers to strong and coherent DR NCD prevention policy action and entrench already weak pro-nutrition policy norms.

In this research, the system boundaries were limited to South African trade and health stakeholders' understanding of the political economy factors operating within domestic policymaking spaces to inhibit or promote domestic DR NCD prevention policy action.

3.3.2.2 Data source

Semi-structured interviews with a broad range of stakeholders with varied perspectives and experiences of the system under study can 'reveal causally and dynamically rich discussions' about the system problem that may well be absent from published literature/data, increasing model validity (55). As such, of the 39 participants included in the policy analysis component of this thesis, the 29 participants with relevant knowledge or experience with diet-related NCD policy processes were included in this part of the analysis (Table 3.6). Four interviews were however subsequently excluded during the data analysis phase on the grounds that they did not provide written consent for their interviews to be included in research publications and/or did not provide the explanatory data needed for model building, resulting in 24 interviews with 25 participants ultimately being included.

Table 3.6: Summary of stakeholders involved in conceptual model-building

Stakeholder group	Key stakeholders invited to participate	Key stakeholders interviewed	Stakeholder interviews included in model conceptualization
Department of Health	13	10	10
Health Attachés for South African Embassy in Geneva or Washington DC (current or past)	6	0	0
Department of Trade and Industry	8	6	4
National treasury	3	2	2
Department of Agriculture	3	2	2
NGOs/CSOs/IGOs	6	4	4
Academics	5	3	3
Industry	5	2	0
Total	49	29	25

3.3.2.3 Data analysis

Individual causal loop diagram development

Purposive text analysis (PTA) was initially selected as the method of qualitative data analysis for this work since it offers a systematic approach to identifying system variables/elements and causal statements linking one variable to another within stakeholder dialogue to inform model conceptualization (55, 100). In PTA coding is usually initially inductive/theory-building, later also employing a deductive approach as a coding frame develops during the text analysis process. However, in this work while I did adopt PTA's systematic approach to identifying causal structure within stakeholder interview data, I adopted a theory-testing approach widely used by the system dynamics community (104), to inform data interpretation and model conceptualization. I again drew on the conceptual model for analysing different forms and mechanisms of power in health policy processes developed in this thesis and previously applied in the thematic analysis component of this empirical work.

To both facilitate the analysis process and ensure transparency in the PTA process, for each interview transcript all data segments describing a causal process were extracted and documented on a PTA coding chart and the cause-and-effect variables and relationships identified were documented. The cause variable, effect variable and the polarity of the relationship was then represented in a simple words and arrow diagram (55, 100). Appendix Four provides an example of the PTA coding chart. These were then merged into causal loop diagrams (CLDs) for each participant using Vensim simulation software. Each CLD represented each participant's mental model of the system problem. As PTA and individual CLD building progressed, standardised concepts (system variables) were developed in an iterative process to capture varied

descriptions of the same causal phenomena by different stakeholders in a single more generalized variable/relationship (55). During CLD building, some causal relationships were also decomposed further by identifying implicit structures implied by the context (this is explained in detail in Table 8.2 in Chapter Eight) (55).

Shared causal loop diagram development

It was important to adopt a systematic approach to individual CLD combination to ensure all stakeholder viewpoints were considered and weighted equally (100) and to make this time-intensive process as streamlined as possible. As such, I adopted an approach similar to that taken by Tomoaia-Cotisel (2018) (100). In an initial stage, groups of two to four individual mental models (CLDs) of participants with different perspectives on the same policy issue (e.g. front of package food labelling or sugar-sweetened beverages tax) were established. I then combined the individual CLDs in each group to generate seven shared CLDs based on different but related DR NCD prevention policy issues. Each of the seven 'policy issue' CLDs then underwent 'mild pruning' (100) – keeping delays and feedback structures but removing linear linkages that it was clear would not connect to any other part of the mental model even after combination. In a second stage, the seven shared 'policy issue' mental models were then combined into a final shared mental model (SMM) for all participants (100).

At each stage I combined CLDs systematically. Combination started with the two most complex CLDs followed by addition of the next most complex CLD and so on. When two CLDs were merged and all differences were complimentary, I used a basic additive approach (Table 8.2 in Chapter Eight provides an example of basic CLD combination). While the vast majority of stakeholders' different perspectives provided additive rather than conflicting views, there were rare occasions where one or more stakeholders identified a relationship that another stakeholder expressly denied. In these instances, I decided to include the relationship identified by the stakeholder with the closest experience of that part of the system in the final SMM.

By this stage I had a highly complex SMM with over 100 variables and linkages that was of questionable usability in the real-world. I decided therefore in a third stage, to simplify and generalize the SMM for improved usability. This involved further pruning (100) of the SMM, removing remaining linear linkages not included in feedback processes. The problem definition were also reviewed and any variables that fell outside of this definition were removed (100). I also undertook an additional process of generalizing and simplifying the model structure where model structures describing similar phenomena, but in varied detail were combined into aggregate variables and relationships at a higher level of abstraction (see Table 8.2 in Chapter Eight) (55, 100). These steps proved particularly important to reduce the number of variables and linkages in the model to allow for model validation and more meaningful analysis.

Now that I had a deeper understanding of the interview data and broad sense of the overall system structure, in a forth stage, I was able to clarify certain parts of the model including feedback processes that had not initially been obvious during the PTA and additional structures implied by the context. This was done in an iterative process of moving from the SMM to the PTA coding charts and back. This process proved particularly important for identifying and clarifying loops which were composed of variables and linkages each identified by different stakeholders or at different points in an interview with a single stakeholder.

Finally, to further develop the SMM I drew on the findings of the realist review presented in Chapter Four (5). An additional four variables and 14 linkages were identified from the realist review. These were initially included in the model with dashed lines (see Figure 8.1 in Chapter Eight and Appendix Five) to be reviewed for real-world relevance by stakeholders during model validation. Overall CLD building was a highly time-intensive process.

3.3.2.4 Model validation

To build confidence that the SMM, as closely as possible, represented the aspects of the system that are relevant to the problem under investigation, I applied three validity tests. First, in a qualitative exercise, I assessed whether the variables identified meet the model's purpose. This was done by reviewing whether the SMM included all elements and dynamics expressed in the problem statement (100). Where discrepancies were identified I assessed whether re-analysis of model development using interview transcripts or revision of the problem statement was necessary. This process primarily resulted in increasing the detail provided in the problem statement of the dynamic relationship between trade and investment system, corporate power and DR NCD prevention policymaking.

The second step was to assess SMM 'saturation' to determine whether the SMM conveyed the complete 'story' stakeholders described. SMM 'saturation' was achieved by demonstrating that the addition of one or more 'policy issue' CLD did not modify the existing SMM (100). This is similar to data saturation used in qualitative data collection where an assessment is made about which point the addition of one or more interview adds no new information. To determine SMM saturation, as policy issue CLDs were combined, newly added variables and relationships were recorded and saturation curves (See Figure 8.2 and 8.3 in Chapter Eight) were constructed and reviewed for saturation. Since the curves tended to flatten towards the end of 'policy issue' CLD combination, indicating no new concepts were emerging, I was confident that I had achieved SMM saturation.

The final and most important step was to validate the resulting SMM via structured dialogue sessions (94, 105) with eight key stakeholders who had intimate knowledge of the system problem being examined and including representation from each of the stakeholder groups. These sessions were conducted in November

2020 and lasted on average 60-90 minutes each. Each interview focused on the model's structure, behaviour and structure–behaviour connections (105) by presenting interviewees with all relevant ‘causal chunks’ of the SMM along with relevant explanatory narratives for each corresponding to their area of expertise/experience (105). Participants were encouraged to question the real-world validity of the variables and feedback structures presented to them and highlight flaws or missing structures (105). I took detailed notes during these sessions. The purpose of the validation process was to ‘uncover flaws and hidden assumptions, challenge preconceptions, and expose assumptions for critique and improvement’ (67). It also helped clarify some parts of the model structure that had not been fully understood from analysing the original interview data and provided the opportunity to ask additional probing questions regarding additional variables, linkages and loops. Particular effort was made to validate the variables and linkages added to the CLDs that had been sourced from existing literature. If these were not validated by stakeholders, they were removed. Once the SMM was adequately revised to address the flaws and missing structures identified by stakeholders, it was considered to be the final conceptual model (100). The pre-validated SMM is included in Appendix Five.

3.4 ETHICAL CONSIDERATIONS

One key ethical issue in health policy research relates to safeguarding the scientific validity and trustworthiness of the research (106). Part of this is ensuring the researcher had sufficient training and experience in using the interview methods applied in this research (106). During my Masters in Public Health in 2014, I underwent training in qualitative data collection using semi-structured interviews and subsequently applied this learning during a qualitative research undertaken in Guinea and Sierra Leone in 2016 that combined involved more than 90 one-on-one interviews and over 50 focus group discussions. While this did not provide me with extensive experience in conducting interviews, I considered it was sufficiently adequate to safeguard the validity and trustworthiness of the research.

Another key consideration to ensure validity and trustworthiness of the research findings relates to the researcher having a sufficient understanding the research context to enable them to contextualize their interpretation of the data (107). I recognize that being South African or having lived in South Africa for an extended period prior to conducting this research would have been optimal. However, since this was not the case, I attempted as far as possible to deepen my understanding of the political, economic, social and historical context both prior and during the data collection phase through talking with South Africans of different colour, ethnicity, socio-economic class and professional background, reading relevant books, articles and news publications and watching documentaries. I additionally relocated my family from London to Cape Town for six months prior to and during data collection to further develop my understanding of the South African context.

Careful consideration must also be given to ensuring a favourable risk-benefit ratio of the research for individual participants and, in this case, the organizations they represent and the wider population (106). At the start of the research I engaged with local stakeholders to ascertain the relevance of the framing of the research questions to real-world concerns in the South African context and to select the policy areas to focus on- ultimately deciding on nutrition and alcohol policy based on stakeholder feedback on what would be most relevant and valuable. Again, towards the end of the research I consulted stakeholders regarding what would be the most useful approach to disseminating the research findings amongst research participants and their wider stakeholder groups. One significant ethical issue surfaced around the inclusion of corporate stakeholders in the research. While I felt it was important to include them given their key role as policy stakeholders, by including them I was also obliged to provide them with the research findings and recommendations if requested. This potentially raised the issue of conducting research that could then be used to the advantage of food and alcohol corporations.

Risks to research participants were also carefully considered. Given the political nature of the research topic there was the potential for research participants to feel uncomfortable disclosing their personal opinions/experiences in an interview or be concerned that openly expressing opinions that were counter to the norm of their respective institution may, if publicly disclosed, have professional repercussions for them. To ensure participants were protected from these risks and felt as safe as possible participating in the research, strict confidentiality assurance was provided to all participants in relation to their personal participation in the research and all information they provided in the interview. The informed consent form allowed them to select the level of anonymity they felt most comfortable with in regards to reporting the research findings. Organizational affiliation were only used for those participants who provided written consent to do so and care was taken to ensure no personal identifying information was disclosed in reporting. Ensuring confidentiality was also important to as far as possible encourage participants to provide an open account of their perspectives and experiences without grandstanding or deferring to accepted norms within their organizational context. Many of the relationships established between myself and the research participants as part of the consent process and during the interviews were maintained or further developed during the research process either through follow-up questioning, engagement of stakeholders in model validation and/or sharing of research findings and participant feedback.

To ensure participants felt comfortable and respected, interviews were conducted in a location of their choice unless major scheduling challenges meant it was necessary to conduct a phone interview/teleconference. However, phone interviews were only conducted with participants who were comfortable with this option and for the small number who were not, interviews were delayed until such time as an in-person interview was possible. On a few occasions participants requested access to the research

questions prior to being interviewed, which I agreed to provide. The reasons for this included for participants to check or be assured they were the most suitable person to be interviewed or to prepare for the interview. In one case this request was made and the participant subsequently provided very brief written responses on which he refused to elaborate in an interview. At the beginning of each interview I attempted to build rapport and a sense of trust with each participant by showing respect for and interest in their knowledge and experience and by adopting an explicitly non-judgmental stance. During the interview I also attempted to take a neutral stance on issues being discussed to ensure participants did not feel judged by the responses they provided. However, I found that quite often I felt compelled to affirm the participants' statement either verbally or non-verbally to encourage them to continue to share their perspective. Quite often during an interview I would recap a participant's response to check my understanding but also to indicate that I was interested and engaged in their responses.

An ethics application was submitted to the London School of Hygiene and Tropical Medicine (LSHTM) for this research. After a number of clarifications including how anonymity of participants would be protected and explicitly including on the consent form that participants can withdraw from the study at any time during the research, ethical approval was granted. I subsequently applied to the Human Research Ethics Committee at the University of Cape Town (UCT) for local ethics approval. After a number of clarifications including how local experts would be identified to take part in the stakeholder mapping exercise, if they may also take part in the study and if they would require informed consent; how the contact details of local participants would be obtained and ensuring the consent forms were in line with the Human Research Ethics Committee's Standard of Practice; and resolving concerns relating to the potential need for a data transfer agreement between the UCT and LSHTM, ethical approval was granted. However, the commencement of data collection in South Africa was significantly delayed (by approximately 3 months) due to prolonged discussions regarding the necessity of a data transfer agreement. Ultimately it was agreed by both universities that given my status as an independent visiting PhD researcher to UCT, a basic research agreement between myself as an LSHTM student and UCT would be sufficient. The agreement outlined my role as an independent 'visiting researcher' at UCT, the purpose of my visit to South Africa, how the data collected during this period will be used, Professor Lucy Gilson's supervisory roles and that UCT would not be providing any material support for this research.

3.5 REFLEXIVITY

Reflexivity can be defined as 'recognizing that the researcher is part of the process of producing the data and their meanings, and a conscious reflection on that process' (56). Reflexivity thus requires conscious reflection on how the researcher's backgrounds and beliefs might enter their own qualitative research practice (108), while also acknowledging that it is not possible to be aware of all the subconscious ways in which our

assumptions shape our approach to research (109). Adopting a reflexive approach throughout the research process is important part of striving as far as possible for objectivity and neutrality in critical qualitative research.

First, it is important to recognize that the research questions of this PhD were not developed from the 'bottom-up' by stakeholders in South Africa, but rather by me in response to my own experiences enabled by my position as a middle-class white woman from a high-income country (HIC). My interest in the structural determinants of health (including trade and investment policy) and corporate power in health policymaking, particularly in LMICs started over a decade ago and has developed through a combination of experiences working as a clinician primarily in New Zealand but also in a number of LMICs and observing how powerful the wider social, economic and structural determinants of were in shaping the health outcomes of my patients; and through educational experiences, for example learning about the implications of the WTO's TRIPS Agreement on access to medicines in LMICs during a Masters of Public Health in 2014. Additionally, my education, experiences and socio-historical background have shaped my normative starting point- that it is the responsibility of both the state and inter-governmental organizations (IGOs) to protect and improve people's health (both in their own country and abroad) and for ensuring health policymaking is free from undue corporate influence. It is from this experiential and normative starting point that I was initially motivated to pursue this line of research.

Without a background in anthropology, international relations or political science, my initial beliefs and assumptions about why and how the international trade and investment system may increase corporate influence in health policymaking was relatively limited, focusing primarily on trade and investment agreement rules and dispute mechanisms. However, through the process of conducting an initial scoping of the literature and subsequently the realist review as well as considering feedback on the potential theoretical and conceptual basis of this work from my supervisors and other senior health policy researchers, my perspectives significantly expanded, leading me to adopt a much broader combined political economy and power approach to the empirical work undertaken as part of this PhD, shaping the research design, interview questions and data interpretation. Given my position as researcher from a HIC with some but limited experience in LMIC settings and no previous experience in the South African context, my initial theories on how policymaking in LMICs may be uniquely or particularly affected by the trade and investment system were limited to what was described in the academic literature primarily authored by other HIC researchers. While this may have limited my lines of enquiry during data collection, the interview was intentionally 'semi-structured' to allow the interviewee to share knowledge, perceptions and experiences they considered were most relevant to the research's aim and most of the questions included in the guide were purposefully open for the same reasons.

My 'outsider' position as a relatively junior public health researcher from a foreign research institution in a HIC primarily engaging with 'elite' policy stakeholders in South Africa likely affected a number of aspects relating to data collection in a variety of complex ways. First, it likely affected who was willing to participate. Many high-level 'elite' policymakers declined or did not respond to repeated invitations to take part in this research indicating both their ability to protect themselves from intrusion and probably also my outsider status and lack of seniority as a researcher. Others, particularly corporate actors may have ignored my invitation to participate in this research for similar reasons but also potentially due to concerns that as a public health researcher my interests may lie in being critical of them and their practices. Given my public health background, I got the sense that I was, in that limited regard, considered somewhat more of an 'insider' or at least an ally amongst some health policymakers as well as academics and NGO/IGOs, potentially making them more willing to find time in their busy schedules to take part in an interview.

Significant efforts were made to address the recognised challenges of recruiting 'elite' stakeholders (56, 58). These included by respecting their status and position (e.g. by referring to them by their titles), indicating knowledge of their background and expertise and outlining the unique and important contribution they would make to this research in correspondence; through introductions by respected 'insider' intermediaries; and by repeated follow-ups (in some cases up to six times) via email or phone. However, after six months of data collection I was successful in securing just one interview amongst the most elite stakeholders (Director a Generals, Deputy Director Generals, Ministers or Health Attachés). Not having the opportunity to include more elite policymakers and politicians may well have limited the breadth of perspectives obtained on factors that affect health policy processes in South Africa and may mean that there are certain more political dimensions of the policymaking process missed in this research. Having said that, I was advised by one stakeholder that cabinet meetings are confidential and high-level policymakers and politicians are not at liberty to share confidential policy discussions nor would they be willing to disclose the content of informal private meetings, indicating that securing interviews with these stakeholders may not necessarily have provided significantly richer explanatory data.

Positionality may also have affected data collection. I found that health policymakers as compared to trade/investment policymakers or other stakeholders tended to be somewhat more defensive in their responses during interviewing. On reflection this may have been partly due to the politically-sensitive nature of the research topic and the questions asked but potentially also their knowledge that I was of a public health background from a HIC public health research institution and therefore potentially came with a set of preconceived ideas and judgements about health policymaking in their country. For example, a health policy during one model validation session asked me 'when will it be considered that we've done enough as health policymakers?'. While I attempted to build rapport and trust before and during each interview by being respectful, interested, encouraging and remaining as neutral as possible, my positionality may have meant

that I did not manage to get as open or honest information as otherwise might have been possible from some health policymakers. Likely given the perceived 'anti-corporate' stance of public health researchers, one food corporation representative adopted a particularly guarded and intimidating approach to the interview, providing very short answers to questions which they refused to elaborate on. Ultimately the interview was cut very short as I realised it was not going to result in the collection of any meaningful explanatory data. In contrast, alcohol corporation representatives appeared significantly more open during interviewing, potentially due to their accepted status as legitimate stakeholders and arguably even partners in alcohol policymaking making a public health researcher seem relatively unthreatening. Trade/investment policymakers also appeared relatively open during interviewing which may be due in part to my lack of authority as a public health researcher to judge their performance given their entirely non-health mandate with exclusively economic goals and performance indicators.

As an outsider I had the freedom to ask taboo or 'obvious' questions during interviews and possibly to elicit fuller explanations than perhaps an insider might have been able to. I also came with a 'clean slate' which some argue may have allowed for a more objective analysis of the policymaking process (46)(110). However, as mentioned, a number of challenges comes with being an 'outsider' including lack of access to stakeholders and having a less authentic understanding of the policy culture under study (46)(110). To manage these weaknesses I was assisted by Moeketsi Modisenyane, a South African Department of Health official who was able to utilize his insider status to negotiate access certain elite stakeholders I would not otherwise have had access to and we met a number of times during the data collection phase to discuss my findings to which he provided valuable additional historical and cultural context. He was also involved in reviewing my analysis to ensure my interpretation of the data was sufficiently contextualized. Despite Moeketsi's valuable input, I acknowledge that as an outsider conducting research within a relatively short time frame there remains a risk of me telling only part of the story or a superficial layer of it.

The power dynamics between the researcher and the researched in this work was shaped by my position as a relatively junior foreign researcher and the research participants who each held positions of relative authority and influence in government, their respective NGOs/IGOs or corporation, or within academia. While as the researcher I had power over the research topic and the questions asked, interviewees exercised power by determining if, (usually) where and when the interview would take place and what information was shared. As such elite interviewees hold significant power over the depth and quality of data collected and consequently the analytical output.

A number of factors may have affected the quality of my data analysis. First, my position as a policy outsider risks leading to 'superficial and decontextualized analyses of the policy process' (111). Aware of this risk, as mentioned previously, I took steps to familiarise myself as much as possible with the social, economic,

political and historical South African context, relocated to South Africa for a period of six months and worked with a local policy insider to check my interpretation of the data was appropriately contextualized. However, without 'closeness to the operational reality' (107) of policymaking in South Africa, translating the research findings in actionable (not generic) recommendations in the South African context was challenging. Second, I recognise that given my lack of previous experience engaging with theories of power, I may have applied them to the data in a somewhat superficial manner. Additionally, my lack of previous experience using SDM methods may have affected the quality of the purposive text analysis and model conceptualization. To reduce this risk as far as possible I attended a course in system dynamics prior to commencing that part of the research.

Finally, balancing the responsibility of caring for a new baby with the demands of a PhD required me to exercise a degree of pragmatism at times. For example, it is possible I conducted a few more interviews telephonically (due to on occasions not being able to travel with my child) than I otherwise would have had I not been a new parent. I was also forced to become more efficient with my time and motivated to adhere to my workplan as far as possible to ensure I completed my PhD as close as possible to my funding end-date.

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RESEARCH PAPER COVER SHEET

Please note that a cover sheet must be completed for each research paper included within a thesis.

SECTION A – Student Details

Student ID Number	1602951	Title	Dr
First Name(s)	Penelope		
Surname/Family Name	Milsom		
Thesis Title	International trade and investment liberalization, corporate power and non-communicable disease prevention policy: A case study of nutrition and alcohol policy non-decisions in South Africa		
Primary Supervisor	Helen Walls		

If the Research Paper has previously been published please complete Section B, if not please move to Section C.

SECTION B – Paper already published

Where was the work published?	Health Policy and Planning		
When was the work published?	December 2020		
If the work was published prior to registration for your research degree, give a brief rationale for its inclusion	n/a		
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Stage of publication	Choose an item.
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SECTION D – Multi-authored work

For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)	I conceptualized the review topic and aim, developed the methodology, conducted the systematic review of the literature, the formal analysis, wrote the original draft, and undertook revisions/edits of the draft to generate the final manuscript. I also developed and undertook revisions of the conceptual model developed in the review.
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SECTION E

Student Signature	
Date	12/05/2021

Supervisor Signature	
Date	14 May 2021

CHAPTER FOUR: CORPORATE POWER AND THE INTERNATIONAL TRADE REGIME PREVENTING PROGRESSIVE POLICY ACTION ON NON-COMMUNICABLE DISEASES: A REALIST REVIEW

CHAPTER OVERVIEW

Chapters Four and Five provide the theoretical and thematic underpinning of the empirical work presented in this thesis. In the research paper presented in this chapter, I develop the conceptual framework for analyzing power in health policymaking building on existing frameworks for analyzing health policy processes and integrating both political economy and power theory. The realist methodology then allowed for mapping of existing evidence from a wide range of disciplines against theories derived from the conceptual framework to understand and explain how the international trade system facilitates corporate power in NCD prevention policymaking in different countries. The review also identified important evidentiary gaps, guiding the focus of the empirical work conducted in this PhD.

The review presented in this chapter was published under an CC-BY license in *Health Policy and Planning* by Oxford University Press in November 2020 (Milsom P, Smith R, Baker P, Walls H. Corporate power and the international trade regime as drivers of NCD policy inactions: A realist review, *Health Policy and Planning*. 2020, doi: 10.1093/heapol/czaa148.)

For purposes of this thesis, changes have been made to table and figure numbering, supplementary texts have been included in the appendices and reference to previous thesis chapters have been added where appropriate.

Notably, given the research paper style of this thesis, there is a degree of repetition of previous chapters, particularly in the methods section of this chapter and in Chapters Five to Nine.

ABSTRACT

Background: Transnational tobacco, alcohol and ultra-processed food corporations use the international trade regime to prevent policy action on non-communicable diseases (NCDs); that is, to promote policy ‘non-decisions’. Understanding policy non-decisions can be assisted by identifying power operating in relevant decision-making spaces, but trade and health research rarely explicitly engages with theories of power. This realist review aimed to synthesize evidence of different forms and mechanisms of power active in trade and health decision-making spaces to understand better why NCD policy non-decisions persist and the implications for future transformative action.

Methods: Power-based theories explaining how transnational health-harmful commodity corporations (THCCs) utilise the international trade regime to encourage NCD policy non-decisions were iteratively developed. To support theory-building, a conceptual framework for analysing power in public health policymaking was also developed. Six databases and relevant grey literature were searched, and evidence extracted, synthesized and mapped against the proposed theories grounded in the conceptual model.

Findings: 104 studies were included. Findings were presented for three key forms of power. Evidence indicates THCCs attempt to exercise instrumental power by extensive lobbying often via privileged access to trade and health decision-making spaces. When their legitimacy declines, THCCs have attempted to shift decision-making to more favourable international trade legal venues. THCCs benefit from structural power through the institutionalization of their involvement in health and trade agenda-setting processes. In terms of discursive power, THCCs effectively frame trade and health issues in ways that echo and amplify dominant neoliberal ideas. These processes may further entrench the individualization of NCDs, restrict conceivable policy solutions, and perpetuate policymaking norms that privilege economic/trade interests over health.

Conclusions: This review identifies different forms and mechanisms of power active in trade and health policy spaces that enable THCCs to prevent progressive action on NCDs. It also points to potential strategies for challenging these power dynamics and relations.

1. INTRODUCTION

Understanding how corporations constrain public health policy action, or in other words promote policy ‘non-decision-making’, has been a growing concern for nearly half a century. Over the past few decades public health researchers have exposed multiple strategies used by THCCs to prevent regulation of health-harmful commodities (HHCs) (1-7). One increasingly relevant tactical area relates to international trade. Scholars have focused on analysing corporate use of trade rules and disputes, finding that by shaping trade rules THCC’s can limit future domestic public health policy space for regulating HHCs (8, 9) and by threatening or triggering a trade dispute it may be possible to generate regulatory chill across multiple countries (4). These analyses have led to calls by public health advocates for transparency and accountability in trade agreement processes with greater participation of health actors; and ensured protection of public health policy space in trade agreements (10). But little in practice has been achieved to transform patterns of exclusion of public health actors and concerns in trade policy development (11). This may be in part be due to a failure to expose and adopt strategies that challenge the underlying power dynamics and relations at the nexus of trade and health.

Understanding the nature and mechanisms of power is increasingly recognised as critical to understanding contemporary public health policy processes and outcomes (12-16), including non-decisions. Yet trade and health policy analysis has rarely engaged directly with theories of power. Only limited more recent empirical research has adopted a politically-informed approach that examines certain aspects of power operating at the nexus of trade and health policy (17-19). Research on framing in trade policy has described how a dominant neoliberal discourse privileges export interests over health (20), including transnational ultra-processed food and alcohol exporters (21). Studies have also explored strategies used by public health advocates to claim authority and legitimacy in trade negotiations (22). Other analyses have highlighted power asymmetries in access to decision-making spaces between business and public health actors (19).

A more explicit and rigorous integration of theories of power in trade and health policy analyses could expand our understanding of how and why NCD policy non-decisions persist as well as why, so far, relatively limited progress has been made towards increasing attention to NCD risk factors in trade policy. By making visible the different forms, mechanisms and spaces of power at the nexus of trade and health, it becomes possible to identify and evaluate strategies that may generate the necessary changes in power relations between health, trade and corporate actors to drive transformative policy change (23).

This realist review attempts to fill this gap in the literature. Building on established theories of power, a conceptual framework for analyzing the interrelationship between different forms, mechanisms and spaces of power in health policymaking is developed. Existing evidence is then mapped against theories grounded

in the framework with the aim of better understanding how the power relations between trade, health and corporate actors have emerged and as such, why NCD policy non-decisions persist. By exposing power in this way, it also becomes possible to start identifying strategies to effectively challenge it. While evidence is included from countries across all income groups, the focus is, where possible, on LMICs since they have become the focus for expansion by many transnational health-harmful commodity corporations (THCCs) (24-27) but generally have limited capacity— financial, institutional, technical and strategic – to resist attempts by THCCs’ to influence health policy processes (28).

2. METHODS

The realist review methodology is based on identifying, interpreting and synthesizing a wide range of evidence to develop and refine explanatory theories about how and why a complex situation results in specific outcomes in certain contexts (29). Thus, it is useful for expanding trade and health policy analysis beyond a description of problematic trade rules, towards gaining insights into the political economy of trade and health policy.

The review was undertaken according to an adapted protocol based broadly on Pawson’s five iterative stages: identifying and articulating the explanatory theories; searching for and appraising the evidence; extracting the data; synthesizing the evidence; and drawing conclusions (30). However, during stage one, development of a conceptual framework was integrated as an additional step. Here, based on synthesis of existing substantive theory relating to health policy processes, a conceptual framework for analyzing health policy decisions and non-decisions was developed. The substantive theories embedded within the framework were used to facilitate explanatory theory development and ensure theory robustness. The reporting of this review adheres to RAMSES publication standards (31).

2.1 Initial scope of the literature and explanatory theory development

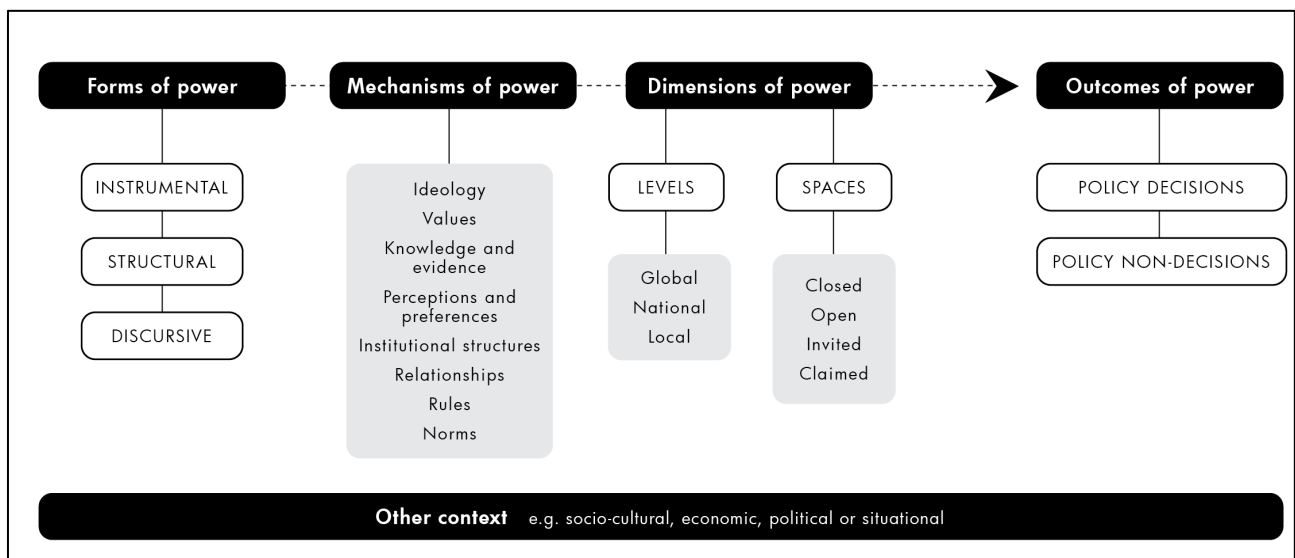
Initial explanatory theories were developed through a rapid scoping of relevant trade and health policy literature. This was conducted using concept searches, e.g. ‘regulatory/policy chill’, ‘policy space’ or ‘trade and health policymaking’ in Scopus and Google Scholar, citation tracking and snowballing. Grey literature was also searched, and key studies suggested by other trade and health researchers known to the authors were sourced. Relevant explanatory information from different sources was interpreted, synthesized and mapped against the conceptual framework in an iterative process of preliminary theory development.

2.1.1 Development of conceptual framework for analysing power in public health policymaking

Existing conceptual frameworks and theories useful for understanding the underlying causal mechanisms of contemporary health policy processes that were judged to be grounded, at least to some extent, in political

economy theory, or included concepts of power, were identified through purposive searching (23, 32-42). In a process running parallel to explanatory theory building, relevant elements from several of these frameworks and theories were synthesized in an iterative process to develop a conceptual framework for analysing power in contemporary public health policymaking (Figure 4.1). The new conceptual framework builds on the three key forms of power outlined in Fuchs and Lederer’s framework with a strong focus on Lukes’ Three Dimensions of Power (32). Each form of power is expressed via various mechanisms adapted from a number of key frameworks (37, 43-45) and with examples drawn from Madureira Lima and Galea’s framework of corporate practices and health (35). Mechanisms are active in different spaces and at different levels as described in Gaventa’s Power Cube (23). Outcomes of power can be either policy decisions to act or non-decisions expressed as inaction. Specifically, the new conceptual framework was designed for analyzing why and how certain public health issues and solutions are recognised and lead to meaningful policy action while others are either never recognised, suffocated before they make it onto the political agenda or are minimised or re-interpreted in the decision-making stage such that transformative policy action rarely occurs. The purpose of this was to further develop relevant substantive theory in which our explanatory theories could be grounded. The existing evidence found in the formal literature search was then mapped against these theories derived from the framework.

Figure 4.1: Conceptual framework for analysing power in contemporary public health policymaking



Although the *forms, mechanisms, dimensions* and *outcomes* of power are diagrammatically presented in Figure 4.1 as separate elements, there is interdependence with dynamic feedback both within and between elements. Further, multiple forms of power usually influence any given policy process.

Instrumental power is similar to Lukes’ first dimension of power and is focused on the direct influence different actors have over formal political decisions. Actor A is considered to have power over actor B if actor

A can persuade actor B to do something she/he would not otherwise do (32). For example, corporations use political financing to build relationships with politicians and undertake extensive lobbying to directly influence political decision-makers.

Structural power is generally hidden and includes setting the political agenda (23, 32). This is achieved by powerful actors reinforcing and taking advantage of social and political values, economic structures and institutional practices that limit the issues for consideration, who is included in decision-making spaces, and the scope of potential solutions (34, 36). As a consequence, certain actors are prevented from raising to the political agenda issues that may be detrimental to more powerful actors who seek to defend the status quo (34). Tobacco control, for example, does not make it onto the political agenda in certain tobacco-producing countries. The second aspect of structural power refers to rule-setting power whereby underlying economic and institutional structures and processes place certain actors in the position of being able to make rules themselves (34). For example, public-private partnerships enable corporations to influence the design, implementation and enforcement of certain rules, including via self-regulation schemes (34).

Discursive power is the most insidious form of power and shapes the ideational and psychological boundaries of participation with significant problems and potential solutions not only kept from the decision-making table, but also outside the minds of actors involved, including those directly affected by the problem (23). Controlling how individuals perceive the world, shapes their interpretation and understanding of important issues and preferred solutions (32, 34). As such, less powerful actors are prevented from elevating significant policy issues and/or potential solutions in their own real interest because they are inconceivable, considered unacceptable or because they accept the status quo as natural and unchangeable or are socialised into believing an alternative is more beneficial (23, 32).

Groups of individual actors perceived as legitimate may strategically exercise discursive power (34), for example, the alcohol industry widely communicates an individual-level framing and narratives of alcohol-related harm, effectively excluding supply-side solutions as conceivable options. However, discursive power also emerges at the system-level as a function of dominant ideas and institutional arrangements/practices that, over time, generate powerful cognitive and behavioural norms.

Each form of power may be exercised by actors or emerge from the system via eight different but interdependent mechanisms. These are ideologies (e.g. the neoliberal political 'project'); values (e.g. individual freedom and choice); knowledge and evidence (e.g. 'science to specification', funding education and manufacturing doubt); perception and preference-shaping (e.g. issue framing and narratives communicated through corporate foundations, front groups, think tanks and public relations companies, opinion leaders, media capture and marketing and advertising); organizational structures (e.g. corporate

participation in government agencies, committees and commissions and in policy development); relationships (e.g. corporate lobbying, revolving doors and political donations); rules (e.g. trade agreements and investment treaties); and norms (e.g. prioritization of economic over health imperatives in political decision-making).

Dimensions of power include the different *levels* – international, national or sub-national – where power resides or is contested. Dimensions of power also include different *spaces*, defined here as formal or informal opportunities where actors can ‘potentially affect policies, discourses, decisions and relationships’ relevant to their interests (23). Spaces may be closed, open, invited, or claimed and are interdependent, changing over time as actors and ideas struggle for legitimacy (23). The drivers of ill-health are increasingly recognised to arise from supra-national policy decisions beyond the control of national governments (46). At the same time, power over such decisions can reside in spaces closed to health actors, both formal spaces (e.g. WTO forums), and informal spaces (e.g. private meetings between industry and government).

The *outcome* of power may be a *policy decision* defined here simply as policy action. This may be voluntarily or involuntary and optimal or suboptimal, for example, adopting a 10% tax on sugar sweetened beverages rather than a preferred 20% tax evidenced to have a more optimal impact on consumption. The alternative outcome is a *policy non-decision* which is defined in this work as a voluntary decision not to act (e.g. deliberate prioritization of economic over health objectives); an involuntary failure to act (e.g. health actors do not pursue a desired measure to avoid a trade dispute); or inaction due to a psychological boundary issue (e.g. supply-side issues are never considered by policy actors since they so strongly contravene dominant perceptions of NCDs as an individual risk and responsibility issue).

Finally, certain *contexts* – political, economic, socio-cultural or situational – can inhibit or activate different mechanisms of power generating different outcomes. For example, LMICs very often have limited capacities – human, financial, organizational, technical and strategic – to exercise instrumental power in relation to negotiating trade rules or agreements in such a way that balances both their economic and health objectives. Lobbying as a form of instrumental power may be constrained where there are clear processes for managing conflicts of interest or restrictions on lobbying in governance spaces. The rule-setting (structural) power of THCCs may be enabled in contexts where there is a strong preference for market-led approaches to governance. Discourses that promote the primacy of markets and involvement of private sector in governance may be resisted in country contexts with strong human rights norms.

2.2 Searching and appraising the evidence

2.2.1 Main search

A systematic search of the literature was undertaken with the aim of identifying the most relevant evidence to support or dispute the initial set of explanatory theories. The final search strategy included combinations of search and indexed terms for the concepts of international trade and investment liberalization, regulatory chill, policy process, relevant transnational corporations and three trade-sensitive public health policy areas: nutrition, tobacco control and alcohol regulation (Appendix One). These concepts were developed and refined iteratively with repeated testing in MEDLINE, review of search results, development/refinement of explanatory theories and, in turn, further concept development. The search terms were then developed through repeated testing in six databases: MEDLINE, Global Health, Econlit, SCOPUS, Web of Science and PubMed in order to balance reasonable sensitivity and specificity (given project time constraints) and the realist approach of searching broadly.

All six database searches were conducted in January 2020 and limited to English language publications between 1st January 2008-15th January 2020. It was considered reasonable to limit the search from 2008 onwards given that engagement with and understanding of trade issues by health academics was relatively limited prior to this (47). Bibliography searching was conducted on studies particularly relevant for theory development. The final reference list was reviewed to ensure all relevant papers identified in the initial scoping review were included.

Searches were also conducted for relevant grey literature in Google and Google Scholar and online repositories of the WHO, WTO, United Nations Conference on Trade and Development and International Institute of Sustainable Development. All articles were downloaded to an *Endnote* database and duplicates removed.

2.2.2 Inclusion criteria

Pawson suggests that inclusion be based on relevance to program theories and explanatory potential, whether the source material contains discernible ‘nuggets’ of evidence, and evidence of trustworthiness (48), or, in other words, ‘whether it is good and relevant enough’ (48). Consistent with Pawson’s approach, no study was excluded based on a single aspect of quality. The criteria applied are outlined below in Table 4.1.

Table 4.1: Inclusion criteria

<p>Include the study if:</p> <ul style="list-style-type: none">• It contains ‘nuggets’ of evidence that provide insight into the review questions, such that even where the aims of the study diverge from the main focus of this review, if a ‘nugget’ of evidence relevant to the review questions is provided, this article is included. <p>AND</p> <ul style="list-style-type: none">• It is assessed to go beyond a superficial description or commentary, i.e. is a competent attempt at research, enquiry, investigation or study (49). This can include qualitative studies using key informant interviews and policy document reviews, surveys, expert legal analyses, case studies, reviews of primary research (if the method was stated) or descriptive models/frameworks (if based on primary data). <p>Exclude the study if:</p> <ul style="list-style-type: none">• The focus is on agricultural policy, food safety, genetically modified foods/GM food labelling, or biotechnology.• It analyses trade and investment agreements, WTO disputes but do not also explicitly analyze the impacts (or potential impacts) on health policy processes (prospectively or retrospectively) OR policy space.• It examines how trade liberalization impacted on health determinants and outcomes but not on health policy processes.• Books and book chapters.
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2.2.3 Selection and appraisal of documents

Electronic searches yielded 1585 results. An additional 51 items were identified through bibliography searches, citation tracking and searches of Google/Google Scholar and institutional websites. After duplicates were removed, 991 unique items remained. Given the realist approach and the limited literature, an intentionally inclusive approach was taken throughout the selection process.

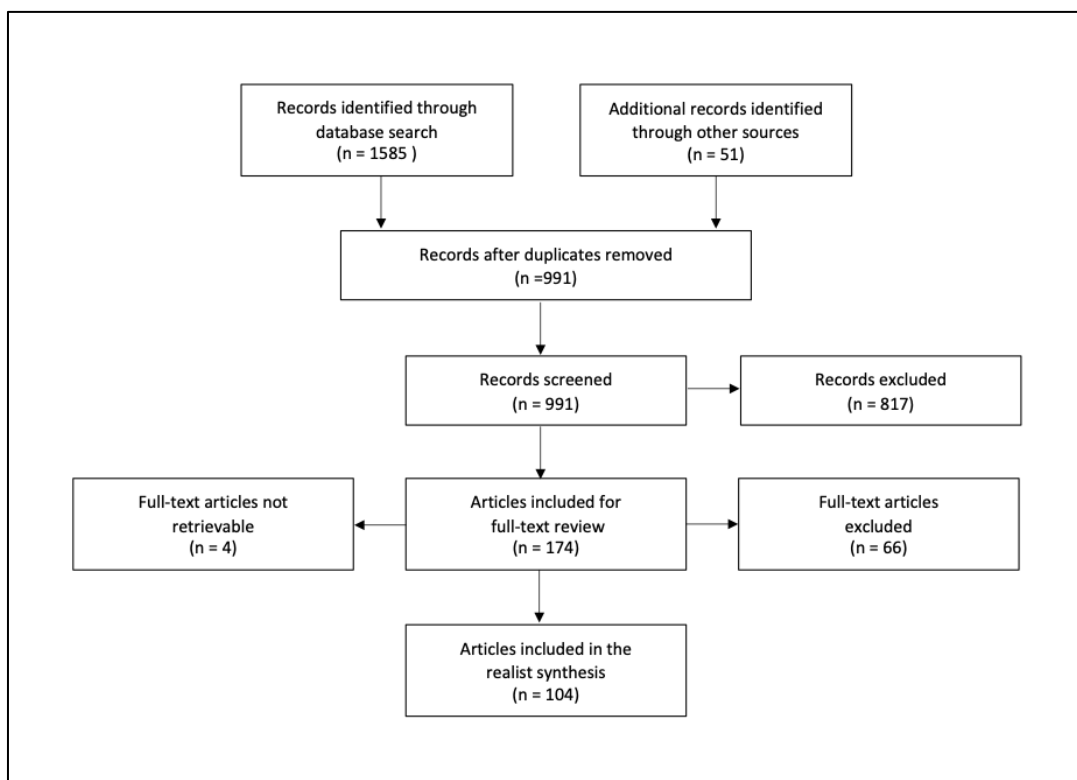
In a preliminary screening, articles were selected based on the test for inclusion derived from realist principles (Table 4.1), as judged by the titles and abstracts. Commentaries (unless based on empirical evidence or providing key anecdotal evidence), editorials, opinion pieces, conference abstracts, and data-free models/frameworks were excluded. After a scoping of included literature, the review scope was narrowed – to ensure sufficiently in-depth analysis could be undertaken – to include just the impact of trade issues (excluding investment) on the three policy areas. With this limitation applied, the first reviewer’s

screen resulted in 174 texts being retained for full-text review. A second reviewer screened 10% of all references resulting in 2% differences in opinion regarding evidential relevance or study quality. Given discrepancies were below 10%, after resolving these differences via discussion, the remaining publications were single-screened.

Full texts were retrieved for 170 of the 174 articles included after initial screening with four articles not retrievable. The 170 full texts were again assessed for relevance based on the test for inclusion. Full-text review resulted in exclusion of a further 66 articles bringing the final number of relevant articles to 104 (Figure 4.2). 10% of the full texts were again reviewed by the second reviewer resulting in 100% inter-reviewer agreement. The remaining texts were assessed for inclusion by the first reviewer only.

A screening tool (Appendix Two) was used to document the rationale for final inclusion/exclusion in the realist synthesis. This included a set of queries regarding study relevance and reliability based on the test for inclusion adapted from a similar set of constructs (50). The final 104 articles included in the synthesis were imported into NVivo and stored as individual 'sources'. Given the diversity of included articles in terms of discipline and methods, it was not possible to apply a single recognized quality appraisal assessment tool to report on overall quality of the studies included in the review. Instead, the realist approach was taken by which each entire study was not assessed for quality but rather each nugget of relevant evidence identified within a primary study was judged on its reliability and relevance to theory development.

Figure 4.2: Screening flow diagram



2.3 Data extraction, analysis and synthesis processes

Within NVivo, 'nodes' were generated for each preliminary explanatory theory. The first reviewer extracted data from each included article that was considered relevant and useful to theory development, including data that supported or challenged each explanatory mechanism and the associated outcomes as well as relevant contextual factors. As additional useful theories were identified new nodes were generated and relevant data extracted. In addition, information on study characteristics (e.g., type of study, methodological approach, health issues covered) were recorded on the screening tool. NVivo was used to improve robustness of data analysis but also to improve transparency by providing an audit of the data analysis process. The data extracted under each node were imported into a Word document for analysis. They were analyzed and synthesized using a realist approach that was both deductive and inductive. The findings are presented in a narrative synthesis.

3. RESULTS

The 104 studies included in the review were from a variety of fields including public health, international law and political science. Accordingly, studies varied in design and methods including prospective analyses of trade and investment agreement texts, analyses of WTO committee meeting minutes and WTO disputes; surveys and key informant interviews; and critical analyses of industry and policy documents. Given that the review question requires investigation of policy decisions but particularly *non-decisions* and the role of power in these outcomes, we identified very few quantitative analyses for inclusion. Further, our enquiry is inherently multi-disciplinary in nature with legal, political and other social science research providing valuable insights. For these reasons the decision was made to include analyses based on expert opinion and deductive reasoning, not only empirical research. In most studies, formal power analysis was lacking or limited and understanding contextual elements was generally not included as a primary research objective and typically only discussed superficially.

The analysis presents the evidence for each explanatory theory/mechanism under theory areas based on the three power types outlined in the conceptual framework (Figure 4.1).

3.1 Instrumental power

Economic liberalization has facilitated increases in efficiency, profitability and global reach of THCCs (51-53). As regulation increases and risk commodity consumption declines in HICs, THCCs have responded by focusing on developing markets in LMICs (54). As such, THCCs are increasingly interested in influencing domestic risk commodity regulatory environments in LMICs, as well as international rule-setting bodies including the WTO and WHO. As THCCs grow in size and profitability (55), their capacity to fund ongoing intensive multi-level lobbying strategies gives them a powerful advantage over public health and civil society actors (34). Lobbying

activities occur in both open and increasingly closed spaces as THCCs are granted privileged access to political decision-makers due to concerns about economic growth and the increasing complexity of policy issues (34). International trade rules provide a valuable legal instrument for THCCs to influence health policy decisions. As a result of these processes, it can be suggested that less powerful health policy actors may voluntarily decide not to act or be forced to make involuntary non-decisions relating to risk commodity regulations.

A number of studies provided evidence of THCC lobbying across multiple trade and health political fora. For example, during China's WTO accession negotiations British American Tobacco (BAT) intensively lobbied the UK, EU and US officials to petition for among other things, lower tariffs on tobacco products and no restrictions on tobacco advertising (56). The alcohol industry has similarly lobbied for favourable trade arrangements (57). More recently, during the Trans Pacific Partnership Agreement (TPPA) negotiations ultra-processed food and beverage corporations undertook extensive lobbying advocating for increased market access, greater regulatory harmonization and investment protections, each with possible implications for nutrition policy space (58). THCC's also use various lobbying tactics to influence the development of international health governance instruments. For example, during negotiations for the Framework Convention on Tobacco Control (FCTC) BAT lobbied the WTO to ensure tobacco was not excluded from multilateral trade agreements (59).

Decision-makers can be motivated to grant certain business actors privileged access to decision-making spaces given the complexity of trade rules and concerns for economic growth. During both the TPPA and Transatlantic Trade and Investment Partnership agreement (TTIP) negotiations for example, tobacco companies met privately with US and European Commission trade officials to discuss the proposed agreements (60). A Canadian case study evidenced a close relationship between industry and the trade ministry with one interviewee indicating that the trade ministry was 'effectively an internal lobby for business' (61). A New Zealand study found that the food and beverage industry had a 'high relative capacity to directly access decision-makers' in relation to obesity and diabetes policy, as compared to other actor groups (62).

However, as their legitimacy declines, THCC's access to certain decision-making spaces can diminish (4). This may prompt THCCs to engage in 'venue shifting'- a strategy to claim alternative spaces of influence through shifting decision-making power to fora, in this case legal, including international trade venues, where their interests may be prioritised (4, 63). Various studies provide insight into the potential for international trade rules to be used by THCCs and their patron states to directly obstruct, delay or divert resources from progressive public health policymaking. These include WTO rules but also 'WTO-plus' rules, deeper than minimum WTO obligations (64-66) and 'WTO-extra' rules that extend further behind national borders to reduce what are considered to be non-tariff barriers to trade (64). While a detailed review of this literature

is included in Appendix Six, Table 4.2 summarises the key mechanisms by which trade rules may provide opportunities for THCCs to influence public health policy decisions (67).

Table 4.2: Key mechanism by which trade rules may limit public health policy space and provide opportunities for THCCs and their patron states to influence public health policymaking

- Substantive rules (e.g. in Technical Barriers to Trade (TBT) chapters)
- Criteria applied to decision-making and choosing between policy options e.g. fulfilling requirements of the ‘necessity test’ (discussed below)
- Processes to be used in making decisions e.g. pro-business regulatory impact assessments (this may increase THCC’s *structural power*)
- Required evidential basis for policy decisions to justify any measure considered trade restrictive under international agreements
- Documentation, disclosure, and reporting requirements for new regulations/policy
- Obligatory engagement with THCCs during policymaking processes (this may also increase THCC’s *structural power*)

While THCCs cannot themselves bring claims against governments at WTO for violating international trade obligations, there is evidence that corporations use international trade-related legal threats in an attempt to force involuntary public health policy non-decisions and prevent policy transfer regionally or globally, especially for tobacco control (68). For example, in the 1990s tobacco companies claimed Thailand’s proposed cigarette ingredients disclosure legislation violated the TRIPS Agreement and Canada and Australia’s proposed plain packaging violated intellectual property rights under NAFTA and TRIPS, respectively (60). More recently, at least four African countries have received warnings from the tobacco industry that their proposed tobacco laws violate international trade and investment agreements (69). At the supra-national level tobacco companies commissioned a number of legal analyses supporting their argument that the FCTC created both jurisdictional and substantive conflicts with international trade agreements (70).

When necessary, the alcohol industry is also adopting similar strategies. For example, the alcohol industry threatened a WTO dispute against Thailand if it adopted a proposed ban on alcohol advertising (71) and argued that the Scottish government’s legislation on minimum unit pricing of alcohol is a technical barrier to trade (72). In Canada’s Yukon Territory, the alcohol industry prevented adoption of specific health warning labels from bottles and cans by arguing the regulation would be in violation of a range of laws including international trade law (73).

Trade-related legal threats may be effective tools for THCCs to drive involuntary non-decisions by governments due to the complexity of establishing an adequate defence in a WTO dispute and the vagueness of WTO rules (74). First, a defending government must convince the dispute panel that their measure passes a 'necessity test'. This involves a complex multi-step process of proving that the measure is necessary to protect public health in relation to its effect on trade; effective in achieving a specific health objective; is no more trade restrictive than necessary; and there is no less trade restrictive alternative measure available (74, 75). The level of justification required is reduced if the measure is based on a relevant international standard (75). WTO dispute panels are required to weigh and balance these factors which can make the likely outcome of a dispute difficult to predict (74).

Passing the necessity test is particularly challenging and complex due to significant uncertainty regarding evidential requirements to prove the necessity of a health measure. For example, the SPS Agreement states a measure must be 'based on' scientific principles, evidence and risk assessment which leaves some scope for interpretation. Further, it may not be possible for a country to produce indisputable scientific evidence of effectiveness (74), particularly for a novel or preemptive policy attempting to mitigate a developing threat. For example, a number of countries opposing Brazil and Canada's ban on tobacco additives and Ireland's proposed plain packaging asserted there was no scientific evidence that these novel measures would effectively reduce smoking (76). More recent discussions about Thailand's proposed alcohol health warning labelling indicate WTO may accept health measures without indisputable evidence of effectiveness but which are grounded in existing science (77). However, there is concern that newer agreements like the TPPA will set a higher bar for evidential requirements to justify a health measure (67, 78). Concurrently, it is a recognized strategy of THCCs to generate their own opposing evidence that can confound a dispute panel's assessment (74).

Vagueness in trade agreement text has resulted in variable interpretations and rulings by dispute panels creating uncertainty when governments evaluate the risk of future potential WTO disputes in light of a trade-related legal threat (74). For example, 'necessity' was interpreted narrowly in the 1990 case over Thailand's ban on tobacco imports where it was ruled insufficient justification was provided for the ban as part of a comprehensive tobacco policy. Thailand was forced to reverse the ban and reduce tobacco excise duties (74). Similarly, in the 1997 United States–Gasoline case, it was ruled that the overall impact of the whole clean air policy could not justify individual provisions within it (74). In 2011 Samoa reversed a ban on a fatty meat cut after WTO members 'questioned the prohibition of a single food item in order to address the [...] complex problem of obesity' (79, 80). In the 2007 Brazil–Tyres case however, necessity was interpreted progressively and the cumulative contribution of individual measures within a comprehensive approach was accepted (74). While there has arguably been a shift towards more progressive interpretations of necessity by WTO panels

(81), overall interpretation variability and a lack of case law for alcohol or food policy may still create significant uncertainty of outcome for governments.

If the significant hurdle of proving necessity is passed, a government must establish that their proposed measure is not unjustifiably discriminatory between countries (74, 82). Satisfying this requirement however by applying a measure in a non-discriminatory manner may often not be politically feasible since most public health policy is the result of stakeholder bargaining (83, 84). Further, there is no consistent approach regarding what constitutes 'like' products when assessing for discrimination between countries (72).

While some anecdotal evidence exists, empirical evidence that THCCs can effectively promote non-decisions by health departments by generating real or perceived risk of a WTO dispute is, so far, limited. A 2014 Canadian case study found that particularly senior health and safety regulators were concerned with avoiding WTO disputes, although it was not generally reported as a key concern (85). The study also reported that trade disputes were not a primary concern of tobacco control regulators globally, although those considering plain packaging were concerned about the risk of violating intellectual property laws and potential WTO litigation and had adopted a 'wait and see' approach to Australia's WTO plain packaging dispute (85). Another 2016 Canadian case study reported that ministries had changed their decision-making to account for trade concerns, including but not limited to investment arbitration (86). A 2017 Brazilian case study found that most government stakeholders did not consider trade agreements to pose a threat to tobacco control in Brazil (87).

3.2 Structural power

With the majority of modern economies structured along neoliberal lines to facilitate open market competition (88, 89), political elites are dependent on private sector profitability to achieve set goals of job creation and economic growth (34). As such, institutional structures and practices may be reoriented to include private actors and prioritize their interests in both national and international decision-making spaces. Within these otherwise closed spaces, THCCs may have significant power to control the policy agenda and shape the rules. While it is challenging to quantify particularly the agenda-setting power of corporations (34), evidence was identified of institutionalization of industry involvement in policy processes.

Within international public health regulatory and norm-setting bodies, alcohol and food corporations are increasingly privileged with high levels of participation (90). For example, at Codex meetings where food standards are developed by the Codex Alimentarius Commission, national delegations increasingly consist of industry representatives, leading to concern that the Codex agenda and standards are heavily influenced by private industry (90). High-income country negotiating position on the UN's Political Declaration on the Prevention of NCDs was heavily influenced by the food and alcohol industries (91), and WHO's associated

Global Strategy on Diet, Physical Activity and Health (2004) openly commits the WHO to collaborate with the private sector. Further the WHO Global Action Plan for the Prevention and Control of NCDs encourages governments to consult with industry on policies and build partnerships with industry to strengthen implementation of NCD prevention measures (90). Given that international health guidelines and frameworks (such as those mentioned) heavily influence national health policy agendas, by influencing at the international level, THCCs also indirectly shape domestic health policy agendas and policy choices.

There is also substantial evidence that neoliberal political values are deeply embedded in trade institutional arrangements at both national and international levels (33, 89). As such, formal trade policy structures and practices institutionalise the participation of private actors in policymaking spaces. For example, consultation with private industry in the development of trade proposals is required by law in the US (57). During the TPPA negotiations, 85 percent of the US trade advisory committee members were private industry and trade group representatives (92). Analysis of tobacco industry documents indicate high levels of co-operation between the US government and industry in efforts to gain greater access to foreign tobacco markets (56). The European Commission's fourteen member advisory group of experts advising TTIP negotiators included at least seven representatives from various industries, and just one representative from a public health organization (92). Such frequent liaisons allow close relationships to develop between industry and government such that a revolving door between government and industry is acceptable and an effective strategy for industry to gain privileged access to closed decision-making spaces.

Conversely, public health actors are not generally perceived as legitimate actors within trade institutions and structures and are therefore not invited into otherwise closed and opaque trade policymaking spaces. Without meaningful participation, health actors especially from LMICs, are very limited in their capacity to influence domestic or international trade policy (93). For example, a health representative sits on just two of the US's sixteen trade policy advisory committees (94). An Australian case study found limited opportunity for civil society or academics to consult on Australia's overall trade policy or for parliament to consider social impacts/include non-trade objectives in trade agreements (21). In a 2018 study health actors across levels reported being excluded from trade negotiating processes and a lack of consultation to evaluate potential areas of trade and health policy incoherence (19). There are some examples of civil society and health actors being invited into domestic trade decision-making spaces through new institutional arrangements, but this does not necessarily result in increased influence (95). As a formal or ad-hoc observer on a number of relevant WTO committees, the WHO can contribute to discussions but are not officially permitted to be involved in decision-making (94). Further, many LMIC governments may have particularly limited financial, human and technical capacity as well as bargaining power to participate effectively in international trade and relevant health standard-setting spaces (e.g. WTO and Codex) restricting their ability to protect national public health interests (28).

The second element of structural power refers to rule-setting power (34). Some evidence was identified indicating that as THCCs seek to grow sales in new markets and governments prioritise export interests, THCCs are increasingly involved in domestic health policy decisions. This reflects the view that industry are legitimate collaborators and partners in national health policy decision-making, as indicated by a number of qualitative studies primarily conducted in LMICs (19, 96-99). Increased industry involvement appears to be linked with the adoption of individual-level health policy instruments with the least impact on industry profitability or alternatively, total policy inaction. A 2009 analysis of draft alcohol policy texts in Uganda, Malawi, Lesotho and Botswana for example, found that as a result of significant industry input, alcohol policies in all four countries largely reflected industry interests: focusing on the economic benefits of trade in alcohol; taking an individualistic rather than whole-population approach to alcohol harm reduction; emphasising active participation of alcohol industry in policy formulation and implementation and self-regulation of alcohol marketing (71). In Malawi the tobacco industry specifically plays a leading role on the National Working Group on Trade Policy and the Private-Public Dialogue Forum and Malawi remains one of the few countries yet to ratify the FCTC (100).

Given their perceived economic contribution and the increasing complexity of trade agreements, governments also widely perceive industry as key partners in developing domestic trade policy. For example, policy and legal documents in both the US and EU describe business as key partners in shaping national trade negotiation objectives to prevent trade policies that are unfeasible or negatively impact important industries (101). This suggests THCCs, including tobacco companies, may have significant influence over trade rules. Some evidence was identified to support this. For example, Phillip Morris International's (PMI) request for 'harmonization of legitimate, science-based regulations', an investor-state dispute mechanism, and a comprehensive 'Trade Related Aspects of Intellectual Property Rights (TRIPS)-plus' chapter within the TPPA (102) were all included in the US draft of the agreement (102).

3.3 Discursive power

The neoliberal ideology – that open and free competitive markets in all areas of life will achieve economic growth and shared prosperity (89) – is central to contemporary global and domestic policymaking processes across sectors and has deeply influenced the way trade and health policy actors think and behave (19, 33). This has included the individualization of disease aetiology, whereby exposure to a limited number of behaviourally defined risk factors is considered personal responsibility, not determined by complex structural and social forces (103). Assisted by their perceived legitimacy and high-level access to decision-making spaces, THCCs have effectively propagated neoliberal framings that has helped entrench these restricted ways of interpreting NCD cause and prevention. Consequently, policy space for addressing NCDs, has largely

been limited to measures that address individual choice (33, 104) but don't interfere with the 'free' market to trade goods and services within or across borders. Feedback between institutions and dominant neoliberal ideas, values and frames has entrenched 'trade over health' policymaking norms over time. As such, norm compliance is not dictated by interests alone but the function of the dynamics of discursive power.

There is evidence that neoliberal ideas have shaped the interpretation of issues at the intersection of trade and health. At the international level, the dominant perception amongst WTO officials included in one study was that international trade is essential for improving global public health without need for consideration of the possible harms (105). Similar perceptions were identified in studies of domestic nutrition policy with trade officials understanding NCDs as problems of 'individual responsibility' and demand for risk commodities an issue of choice, not a problem of supply facilitated by trade liberalization (19, 21, 99). In South Africa, dominant policy actors believed economic growth, achieved in part through international trade and investment, would resolve nutrition problems causing NCDs by increasing consumer wealth (99). Some LMIC governments also continue to perceive tobacco exports as important for economic growth (100, 106). In Malawi, one study found both health and non-health sector actors perceived tobacco as important for economic stability, job creation and to support health system and service strengthening (18).

Within this context, where the dominant understanding of NCD causation is congruent with neoliberal assumptions, relatively limited psychological boundaries around NCD prevention interventions have been established. Notably, despite frequent recognition of the upstream determinants of NCDs by relatively authoritative political and scientific institutions, policy decisions still tend to 'drift' downstream to those safely within these narrow boundaries (103). Specifically, in relation to risk commodities, conceivable options tend to consist largely of demand-side interventions while policies that address system and supply-side issues generally fall outside of policy actors' ideational boundaries. For example, in both Australia and South Africa nutrition has generally not been considered as a trade policy issue (19, 21, 99) and global NCD policy recommendations are broadly limited to individualized policy solutions (103).

As a result of these described processes, policymaking norms have emerged characterised by a persistent tendency for economic and trade objectives to be prioritised over health resulting in voluntary public health policy inaction. At the supranational level the WHO's 2004 Global Strategy on Diet, Physical Activity and Health states that no provision within it should be considered justification for trade restrictive measures, and important trade issues were left out of the 2011 Political Declaration on the Prevention and Control of NCDs after opposition by the US and the EU (107). The FCTC process also reflected the dominance of trade interests in policy decisions. Despite efforts by a number of countries to ensure the FCTC emphasised the priority of public health over international trade and investment objectives, the FCTC remains subordinate to WTO (59, 108, 109).

At the domestic level policy actors in Australia and Malaysia identified that export interests were often privileged over health objectives (19). A study in Kenya, Zambia and Malawi found that even health actors deferred to the 'dominant economic development norm' that tobacco is an economic commodity to be promoted (18). The Fijian Ministry of Health opted for a voluntary over mandatory front-of-package food labelling scheme due to concerns that mandatory labelling would negatively affect trade (96). Tonga is reported to not have proceeded with a proposed restriction on a fatty meat cut, concerned it would interfere with Tonga's accession to the WTO (110). Canadian policy-makers involved in health and safety regulatory development were reported to internalize trade norms through 'regulatory impact assessments' which include consideration of trade implications for any new regulation, and efforts by policy-makers to avoid obstructing the free flow of commercial goods/investment during policy design (85). THCC's perceived contribution to the economic growth objective is widely argued to prevent governments from regulating risk commodities in an effort to contain industry costs (19, 21, 96, 99, 111).

The narrative that exporting risk commodity industries are essential for economic growth and job creation can also compel governments to pursue the interests of THCCs in trade agreement negotiations and at WTO (112, 113). The US has threatened trade sanctions against at least five Asian countries if they did not open their markets to foreign tobacco products (114, 115) and nearly all trade and investment agreements negotiated by the US eliminate or reduce their trading partners' tobacco tariffs (9). In 2014 when Jamaica and Ireland were developing tobacco control legislation, the US claimed the measures would contravene intellectual property obligations under international trade and investment agreements (3). As recently as 2018, the EU, US, and UK supported tobacco companies to oppose cigarette ingredients disclosure in Thailand at the WTO (114).

As their legitimacy declines in HICs, tobacco companies have turned to more economically vulnerable LMICs to act on their behalf. LMICs have been encouraged to use WTO forums to make an economic development argument against tobacco control by raising Article 12.3 of the TBT Agreement that requires the special needs of developing countries to be taken into account. This was used to oppose Canada's ban on tobacco additives to help mitigate youth smoking, the European Union Tobacco Products Directive, Brazil's additives ban and Australia's plain packaging regulation (76, 84). Five LMICs were supported by the tobacco industry to mount the 2014 WTO challenge against Australia's plain packaging (113). The tobacco industry also supported Malawi to raise a trade concern at the TBT committee meeting over Canada's Cracking Down on Tobacco Marketing Aimed at Youth Act and Brazil's ban on flavoured cigarettes (18). At the supranational level, a number of member states strongly opposed including a recommendation to ban slim cigarettes in the FCTC policy guidelines based on an economic rationale (116).

The same trade and economic rationale has compelled governments to pursue the interests of the processed food and alcohol industries within WTO forums. Concerns have been raised at WTO's TBT Committee in the interest of the processed food industry including over Peru, Chile and Thailand's proposed food labelling regulations (75, 112). After the EU and US complained that Colombia's mandatory alcohol health warning labelling regulation was overly burdensome and costly to trade, Colombia reduced the range of alcohols covered by the policy and made regulatory compliance voluntary (112).

THCCs encourage the trade over health policy norm by using issue framing that resonates with accepted neoliberal logic, goals and values. Industry has widely used generic economic arguments that THCCs are vital for revenue and job creation (3). THCCs have also applied specifically trade-focused economic framing to argue against progressive tobacco policy including in New Zealand (116), Australia and the UK (117, 118). The food industry in Fiji has persistently argued that additional health protective food policies would have a significant negative trade/economic impact and make Fiji uncompetitive internationally (96).

THCCs also use trade rules to shift public and political discourse, from health to a legal/technical focus (113). The tobacco industry widely claimed that Australia's tobacco plain packaging legislation was in violation of international intellectual property rules despite consistent legal advice to the contrary (60, 68). This suggests the tactic was intended to create an alternative discursive reality (60, 117, 119) with the purpose of chilling regulatory progress and not necessarily to pursue and win a legal case. Lastly, tobacco companies have also capitalised on neoliberal values claiming that tobacco control is government overreach and threatens individual freedom of choice including in Australia, the UK and Canada (117, 120). Along similar lines, the alcohol industry have widely and persistently propagated an individual-level framing of alcohol-related harm (6).

4. DISCUSSION

This review identifies evidence of THCCs exercising and likely benefiting from each of the three key forms of power outlined in our conceptual framework expressed via various mechanisms. This power resides at both the national and international level and in spaces often closed to health and civil society actors but into which THCCs have been invited. The often hidden and invisible nature of power and non-decisions makes empirical analyses and drawing causal inference between processes of power and outcomes inherently very challenging. However, our findings do indicate linkages between power exercised by THCCs and public health 'non-decisions'. The framework also provides initial insights into how proposed strategies for change might effectively challenge existing power relations.

First, evidence indicates THCCs exercise instrumental power through their relationships (direct lobbying of trade policymakers), and rules (threats of trade rule violations or operating through governments to access legal mechanisms). Challenging industry's instrumental power over trade policy might include bans on both THCC political funding and lobbying itself as well as closing the revolving door between government and industry. However, such strategies remain largely unexplored in the trade and health literature. Strengthening countervailing public health lobbying will be challenging given existing money and resource imbalances.

Post-treaty implementation measures to defend health policy space and minimize the impact of trade-related arguments, legal threats and challenges include strengthening public health coalitions (81). For example, developing a multi-sectoral coalition and long-term relationship-building with trade officials meant Australian health actors were trusted to provide sound legal advice to government about the legality of standardised packaging (118). To counter industry legal threats broad international issue networks advocating for Canada and Brazil's tobacco additives bans were also established (81).

Other strategies to increase government confidence and ability to design policies that are consistent with trade rules include capacity building within national health departments on trade issues through technical training and cross-departmental collaboration (81, 110, 121). Close coordination between health and trade officials was observed in both Canada and Brazil when developing their tobacco additives bans to ensure compliance with trade law and pre-empt opposition (81). Neither case proceeded to a WTO dispute. Similarly, in Australia close coordination between health and trade officials was essential both in building cross-sectoral support for standardised packaging and for developing a sound legal argument to defend against industry threats and in the eventual WTO (and investment) litigation (81, 118).

In relation to international trade rules themselves, some experts have recently argued that the relevant WTO Agreements do in fact give governments significant space to design and implement, particularly tobacco control measures, but possibly also alcohol and food regulation, provided they are supported by evidence and are non-discriminatory (75, 81, 121, 122). While supporting evidence is primarily drawn from tobacco control-related WTO case law, there may also be some relevance of these arguments for carefully crafted food and alcohol regulations. Analyses of TBT Committee meeting minutes covering trade concerns raised over labelling regulations of processed foods and alcohol health warning labelling tentatively support this (75, 77). Table 4.3 presents a summary of key conditions that, if met, may reduce the scope for THCCs or other governments to use trade rules as a tool for preventing tobacco, alcohol and food regulation.

Table 4.3: Conditions that may reduce restrictions on tobacco, alcohol and nutrition policy space created by international trade rules

- Use by public health advocates of language familiar to trade practitioners (81).
- Clear attempt to integrate health and trade objectives rather than reject principles of free trade outright (81).
- Strong invocation of parties' legal commitments to international health agreements (e.g., FCTC) or compliance with international standards (74, 81, 83, 123).
- Sufficient evidence to support the legitimacy, effectiveness and necessity of the measure to achieve a specific health outcome. It may be acceptable that evidence is in the form of quantitative projections or qualitative reasoning (74).
- Consistent reiteration of the importance of the health objective (81, 124).
- Emphasis the policy is a necessary part of a mutually supportive comprehensive set of measures, meaning that adopting one measure is not an alternative to other complementary measures (75, 125).
- Policies are designed to be as least trade restrictive as necessary without compromising elements essential to the measures effectiveness (75).
- Policies are designed so as not to discriminate between similar imported and domestic products with clear argument for why the products have different end uses and physical characteristics. For example, a challenge that a labelling requirement for only certain types of calorie dense, low nutrition snack is discriminatory against certain imported foods, could be argued against by outlining these snack foods are not like products under the TBT to nutritious foods consumed at mealtimes (83).

It is important to note however that satisfying these conditions may not protect novel measures, particularly those not supported by an international convention or set of standards. They do not take into account the politics of policymaking that very often demands compromise resulting in regulations that may discriminate between like products from different countries (83). They also may not protect supply-side measures which may be highly trade restrictive by design, for example product bans. Further, having to satisfy these measures may be challenging for some developing countries with limited legal/technical resources to design policy to meet these conditions, the capacity to conduct their own research, or present a comprehensive defence in trade fora. Finally, more recently negotiated regional trade and investment agreements, like the TPPA and

TTIP may establish higher bars for meeting some of these conditions, in particular higher evidential requirements (67).

Second, neoliberal-oriented institutional structures, practices and goals mean THCCs are often granted privileged access to trade and health decision-making spaces where their interests limit the scope of the agenda. Mobilizing broad coalitions to claim greater access to trade policy decision-making spaces and increase the visibility and legitimacy of health interests on the agenda will be important to challenge structural power. For example, in Australia a broad network of tobacco control advocates managed to gain legitimacy within trade policy spaces while the absence of such a network mobilized on unhealthy diets and nutrition was an impediment to generating attention to this issue in Australian trade policy (21). A strong domestic issue network developed in support of Thailand's graphic warning label regulation for tobacco products was pursued despite subsequent industry legal threats (126).

Limiting industry representation on government trade committees as well as strengthening government institutional capacity for healthy trade policy will also be important to challenge THCC structural power. At the national level, Thailand is often cited as an example of how sustained investment in technical capacity-building and inter-departmental co-ordination between trade and health agencies can generate a common understanding of key health and trade policy issues and bring health actors and considerations into trade policy negotiating forums (79, 127). Importantly however, it is uncertain whether these strategies significantly changed Thailand's trade negotiating position highlighting the importance of exposing and challenging power in all its forms. These strategies may have contributed to the health agency's confidence to pursue tobacco control regulation including a graphic health warning labelling system, despite trade-related threats from industry (126). Strengthened global institutional capacity will also be important to strengthen attention to health interests in international trade policy including through stronger WHO leadership and engagement on health issues at the WTO; and providing technical assistance to governments to more effectively assert health goals in trade policy at the national level (47, 128).

Addressing industry structural power in relation to domestic health policy and international health standards, norms and laws will require structures and rules governing interactions between THCCs and both governments and international public health standard-setting bodies (90). The FCTC for example, legally obligates parties under Article 5.3 to adopt measures that protect 'their public health policies related to tobacco control from commercial and other vested interests of the tobacco industry' (129). However, there has been selective and incomplete implementation of recommended measures allowing significant ongoing opportunities for industry policy influence, again indicating other forms of power are at play (130).

Third, our findings suggest THCCs attempt to exercise agency over discursive power through reinforcing various framings of health issues in ways that resonate with neoliberal logic and values. While it is impossible to draw causal inference, there was evidence that decision-makers' individualized interpretation of health issues, the boundaries around acceptable solutions and resulting dominant policy norms of 'trade over health' aligned with industry framings.

Counteracting these processes include amplifying and propagating alternative framings of trade and health issues. In Australia for example tobacco control advocates focused on framing standardised packaging around the direct harms of tobacco and Australia's commitment to the FCTC and exposing the manipulative nature of the industry's previous legal attacks (118). They also successfully built understanding amongst trade actors of standardised packaging not as a trade barrier, but as contributing to economic prosperity, health and wellbeing (118). Due to issue complexity, engaging the public and political leaders on trade and nutrition or alcohol issues will however be more challenging. Advocates will likely need to develop simple frames that emphasize the immediate impacts of trade agreements on nutrition (21) or alcohol-related harm. This will be important to encourage the understanding of NCDs and risk commodity consumption as system-level problems helping to expand the range of acceptable policy solutions.

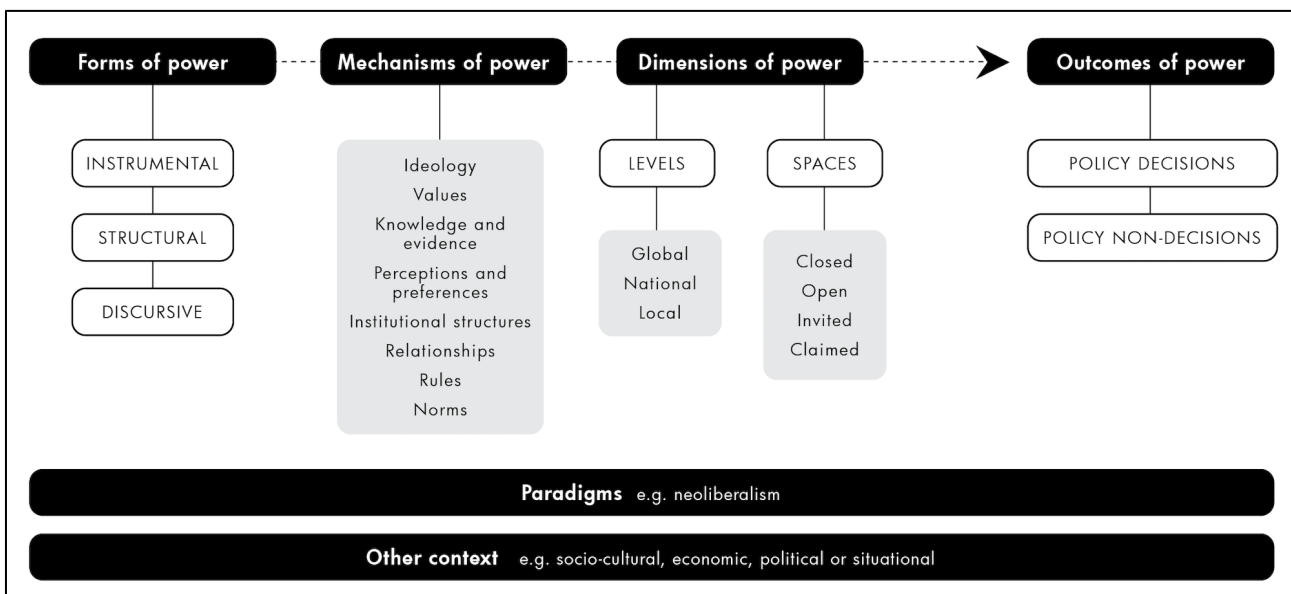
International health instruments including standards, guidelines and particularly legally-binding agreements can also contribute to shifting policy norms and increase governments' confidence in adopting health measures despite trade-related concerns or legal threats (83, 112). Given they provide evidence of effectiveness and to some extent indicate necessity, international health instruments can also support the assertion of health objectives more strongly in WTO fora (82, 109). Brazilian health policy actors have reported confidence in their right to regulate tobacco in a manner consistent with the FCTC (87) and relied heavily on the FCTC in its defence of a ban on cigarette flavouring and additives (81). Australia also drew on the FCTC in its WTO defence over plain packaging (81, 118).

While through their discursive power, THCCs can foster and reinforce neoliberal framings and norms, our findings suggest the pervasive individualistic interpretation of NCDs, limited scope of solutions and 'trade over health' policy norms cannot be explained by THCC agency alone. Rather, the findings of this review tend to support the 'structuration perspective' that discursive power is also generated from socio-political systems (34, 131) and the system theorists' view that system structures and goals are strongly, although variably, determined by a dominant paradigm (132) – in this case neoliberalism. Further, there is a duality to the neoliberal system in that while policy actors can shape it they are also enabled and constrained by it (131), including in relation to exercising or challenging discursive power but also other forms of power too.

Adopting the strategies to challenge THCC power described thus far, as well as their ultimate effectiveness, will likely be limited under the constraints of an overarching neoliberal paradigm and system. As such, sustainably transforming existing power relations that drive health policy non-decisions will also likely require the development and adoption of a new paradigm with public interest and sustainability values and goals, supporting similar recent calls from public health academics (133). While hugely ambitious, the COVID 19 pandemic and broader climate crisis may offer a rare window of opportunity for public health actors to work with social, environmental and new economics advocates and build support for such an alternative political and economic paradigm. The basis of such models already exist in indigenous communities and at grass roots level in the global South and in Europe; there is, for example, Raworth’s Donut Economics model that replaces the primary goal of economic growth with an equity-focused goal of meeting the needs of all within the means of the planet (134, 135).

This analysis tentatively supports the potential utility of the conceptual framework developed in this work for power analysis in public health policymaking. It further indicates that a possible revision of the conceptual framework to emphasize the broad influence of paradigms at the system-level on processes of power may be useful (Figure 4.3).

Figure 4.3: Revision to Conceptual framework for analysing power in contemporary public health policymaking



5. LIMITATIONS

This review has a number of key limitations. Given the multi-disciplinary nature of the review topic as well as the restricted capacity to undertake multiple secondary iterative literature searches in keeping with the

realist approach, it is possible that relevant explanatory mechanisms and data that supported or challenged them, was not captured in this review. Also, identification of explanatory mechanisms may have been limited due to the very few studies identified on trade and health policy that explicitly engaged with theories of power.

6. CONCLUSIONS

Exposing all forms of power and their associated mechanisms is essential for identifying and evaluating strategies that can generate the shifts in power required to achieve transformative governance and policy change in health, trade and other sectors for tackling NCDs. However, theoretical and empirical research examining power at the nexus of trade and health policymaking, and in health policy analysis more broadly, is currently very limited. More rigorously incorporating theories of power in health policy analyses would be useful for understanding how to push beyond the individualistic interpretation of NCD risk and outcomes and expand ideational boundaries to include strategies that address health-harmful product supply but also the social and economic conditions within which consuming these commodities occurs.

The findings of this review raise a range of other important research questions including for example, how do power relations and dynamics between trade and health actors (and their associated outcomes) compare in different contexts e.g. by varying levels of economic development or socio-economic inequality, or under different (and different combinations of) predominant political and economic paradigms? The framework developed in this work may provide a useful foundation for shaping a research agenda that covers these and other key questions, as well as providing a useful tool for future analyses of power in health policymaking.

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RESEARCH PAPER COVER SHEET

Please note that a cover sheet must be completed for each research paper included within a thesis.

SECTION A – Student Details

Student ID Number	1602951	Title	Dr
First Name(s)	Penelope		
Surname/Family Name	Milsom		
Thesis Title	International trade and investment liberalization, corporate power and non-communicable disease prevention policy: A case study of nutrition and alcohol policy non-decisions in South Africa		
Primary Supervisor	Helen Walls		

If the Research Paper has previously been published please complete Section B, if not please move to Section C.

SECTION B – Paper already published

Where was the work published?			
When was the work published?			
If the work was published prior to registration for your research degree, give a brief rationale for its inclusion			
Have you retained the copyright for the work?*	Choose an item.	Was the work subject to academic peer review?	Choose an item.

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SECTION C – Prepared for publication, but not yet published

Where is the work intended to be published?	Globalization and Health
Please list the paper's authors in the intended authorship order:	P Milsom, R Smith, P Baker, H Walls

Stage of publication	Under revision
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SECTION D – Multi-authored work

For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)	I conceptualized the review topic and aim, developed the methodology, conducted the systematic review of the literature and the formal analysis, wrote the original draft, and undertook revisions/edits of the draft to generate the final manuscript.
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SECTION E

Student Signature	[REDACTED]
Date	23/08/2021

Supervisor Signature	[REDACTED]
Date	23/08/2021

CHAPTER FIVE: INTERNATIONAL INVESTMENT LIBERALIZATION, TRANSNATIONAL CORPORATIONS AND NON-COMMUNICABLE DISEASE PREVENTION POLICY NON-DECISIONS: A REALIST REVIEW

CHAPTER OVERVIEW

While Chapter Four explored theories and evidence of how the international trade system may facilitate corporate power in NCD prevention policymaking, Chapter Five is focused on the implications of international investment. Chapter Five presents a second realist review in which I adopt a political economy approach in an attempt to expand the conceptualization of how the international investment regime may facilitate transnational risk commodity corporations (THCCs) to advance their interests within NCD prevention policymaking. Exploring literature across a range of disciplines I map existing evidence against a set of potential explanatory mechanisms and again identified empirical gaps in the literature helped shape the focus of the empirical work of this PhD.

This paper has been submitted for publication in *Globalization and Health* and is currently under review by the editors. For purposes of this thesis, changes have been made to table and figure numbering and reference back to previous thesis chapters have been added where appropriate.

ABSTRACT

Background: Public health concerns relating to international investment liberalization have centred on the potential for investor-state dispute settlement (ISDS)-related regulatory chill. However, the broader political and economic dimensions that shape the relationship between the international investment regime and NCD policy development have been less well explored. This review aimed to synthesise the available evidence using a political economy approach, to understand why, how and under what conditions transnational corporations may use the international investment regime to promote NCD prevention policy non-decisions.

Methods: Mechanisms explaining why/how the international investment regime may be used by transnational health-harmful commodity corporations (THCCs) to encourage NCD prevention policy non-decisions, including regulatory chill, were iteratively developed. Six databases and relevant grey literature was search, and evidence was extracted, synthesized and mapped against the various proposed explanatory mechanisms.

Findings: Eighty-seven sources were included. THCCs may be incentivised to use the ISDS mechanism since the costs may be outweighed by the benefits of even just delaying regulatory adoption, particularly since the chilling effect tends to ripple out across jurisdictions. Drivers of regulatory chill may include ambiguity in treaty terms, inconsistency in arbitral rulings, potential arbitrator bias and the high cost of arbitration. Evidence indicates ISDS can delay policy adoption both within the country directly involved but also in other jurisdictions. Additionally, governments are adopting standard assessments of public health regulatory proposals for trade and ISDS risk. Various economic, political and industry-related factors likely interact to increase (or decrease) the ultimate risk of regulatory chill. Some evidence indicates that THCCs take advantage of governments' prioritization of foreign investment over NCD prevention objectives to influence the NCD prevention regulatory environment.

Conclusions: While ISDS-related regulatory chill is a real risk under certain conditions, international investment-related NCD prevention policy non-decisions driven by broader political economy dynamics, may well be more widespread and impactful on NCD regulatory environments. There is therefore a clear need to expand the research agenda on investment liberalization and NCD policy beyond regulatory chill and engage with theories and approaches from international relations and political science, including political economy and power analyses.

1. INTRODUCTION

It is well known that tobacco, alcohol and unhealthy diets are key risk factors for non-communicable diseases (NCDs) which now account for more than 70 percent of global deaths annually. Over 85 percent of preventable NCD deaths occur in low- and middle-income countries (LMICs) (1). However, as markets for harmful products saturate in high-income countries, investment into the alcohol, ultra-processed food (UPF) and, in some cases, tobacco sector is increasing in many LMICs, particularly in Asia (2, 3). This investment allows corporations engaged in the production, distribution and sale of UPF, alcohol and tobacco to reduce production costs, gain efficiencies in distribution, and sell their products at a low cost domestically (4). Foreign direct investment (FDI) has consequently been associated with increased consumption of health-harmful products in a number of LMICs (5-9). Public health measures to reduce consumption of these products are in direct tension with the financial objectives of the corporations producing them. As such these corporations (referred to in this work as transnational health harmful commodity corporations or THCCs) may be increasingly interested in maintaining a limited regulatory environment in these countries. The relevance of understanding the linkages between the liberalization of cross-border capital flow and FDI, growth in the size and transnational reach of multinational corporations, and NCD prevention policy *non-*decisions is therefore increasingly pertinent. Where non-decisions are defined as a voluntary decision not to act; an involuntary failure to act; or inaction due to a psychological boundary issue (10).

Concern from the public health community regarding international investment liberalization has largely focused on the ISDS mechanism found in more than 3500 international investment agreements (IIAs) and in over 60 trade agreements including regional and more recently negotiated large multi-lateral trade agreements (11). A product of global constitutionalism, the ISDS mechanism provides a pathway for corporations to bypass domestic courts and bring claims for financial compensation against states in private international tribunals when a corporations perceives state action has compromised their investment (12, 13). ISDS originates from efforts by former colonial powers and international organizations, particularly the World Bank, to maintain influence within newly independent and developing countries (14) and multinational corporations have widely lobbied for its inclusion in international investment treaties and trade agreements. Public health concerns have centred around the potential for ISDS to be used by THCCs to block new policies aimed at protecting public health or to generate 'regulatory chill', a specific type of policy non-decision where a government fails to regulate in the public interest in a timely and effective manner due to a high perceived threat of investment arbitration (13, 15-18). As such, IIAs potentially provide THCCs with veto power over domestic public health policy decisions (13). Despite significant recent debates and steps by some countries to reduce their exposure to ISDS, the mechanism remains a standard model for resolving international investment disputes (19).

Public health concern relating to ISDS has not been unwarranted. In 2010 Phillip Morris International filed a dispute against Uruguay (under an agreement with Switzerland) for their tobacco graphic warning labelling regulations. The following year Philip Morris Asia initiated a dispute against Australia (under an IIA with Hong Kong) for their proposed tobacco standardized-packaging (20, 21). While the food and alcohol industry have not yet utilized the ISDS mechanism, there is evidence that they are increasingly adopting tobacco industry strategies to influence policymaking (22). Notably, LMICs may be particularly vulnerable to a potential chilling effect on progressive public health policy by investment protection provisions given their significant exposure through IIAs with high-income countries (HICs) where the majority of THCCs are domiciled, increasing investment by THCCs in LMICs and the limited administrative, legal technical and financial resources held by LMICs to successfully navigate an investor-state dispute.

A body of literature analysing the potential regulatory chilling effect of international investment agreement obligations on health policy decisions is developing. A 2018 critical review by Schram et al. including 33 articles, outlined the methodological approaches used to study investment dispute-related regulatory chill, the existing state of knowledge on the issue and developed a conceptual framework of the internalization of international investment agreements in public policy (23). However, the broader political and economic dimensions that shape the relationship between the international investment regime and NCD policy development have been less well explored. This work argues that adopting a political economy approach may provide further nuance to understanding how, why and under what circumstances the international investment regime may facilitate certain actors to advance their interests within NCD policy decision-making not only instrumentally (e.g., threats of investor-state disputes) but also structurally (e.g., by appealing to governments' interest in attracting foreign investment).

The aim of this realist review, therefore, is to synthesise the available evidence to understand why, how and under what conditions international investment liberalization may facilitate THCC influence over NCD prevention policy and to identify potential recommendations for minimizing such influence. While evidence is included from countries across all income groups, the focus, where possible, is on LMICs since they have become the focus for expansion by many THCCs (24-27) but often have limited capacity – financial, institutional, technical and strategic – to resist attempts by THCCs' to influence health policy processes (28).

2. METHODS

The realist review is one of the few mixed review methods that offers a 'systematic integration of contextual analysis in order to better understand *how* interventions produce outcomes' (29). This approach was therefore considered useful for providing insight into not only if international investment liberalization has affected NCD prevention policy action, but also how, why and under what circumstances.

The review was conducted according to a protocol broadly based on Pawson's five iterative stages: identifying and articulating the explanatory theories; searching for and appraising the evidence; extracting the data; synthesizing the evidence; and drawing conclusions (30). The reporting of this review adheres to RAMSES publication standards (31).

2.1 Initial scope of the literature and explanatory theory development

An initial rapid scoping review of relevant international investment and health policy literature was conducted using concept searches, e.g., 'regulatory/policy chill' and 'policy space' in Scopus and Google Scholar. Citation tracking and snowballing was then also used. Grey literature was also searched. Relevant explanatory information from different sources was interpreted and synthesized in an iterative process of preliminary theory development.

2.2 Searching and appraising the evidence

2.2.1 Main search

A systematic search of the literature was conducted to identify the most relevant evidence to either support or dispute the initial set of explanatory theories. The final search strategy used a combination of search and indexed terms for the concepts of international trade and investment liberalization, regulatory chill, policy process, relevant transnational corporations and three public health policy areas: tobacco control, alcohol regulation and nutrition (Appendix One) (10). These concepts were developed iteratively by repeated testing and reviewing of search results in MEDLINE, development/refinement of explanatory theories and subsequent further concept development (10). The search terms were then developed through repeated testing in six databases: MEDLINE, Global Health, Econlit, SCOPUS, Web of Science and PubMed.

Database searches were undertaken in January 2020 and limited to English language publications from 1st January 2008 to 15th January 2020. It was judged reasonable to limit the search from 2008 onwards given the only more recent interest in international investment treaties by public health researchers. Citation tracking and bibliography searching was conducted on studies of particular relevance to theory development (10).

A search for relevant grey literature was also conducted in Google and Google Scholar and online repositories of the WHO, WTO, United Nations Conference on Trade and Development (UNCTAD) and International Institute of Sustainable Development (10). All articles were downloaded to an *Endnote* database and duplicates removed.

2.2.2 Inclusion criteria

Inclusion criteria were consistent with Pawson’s approach that the decision be based on the source’s relevance to program theories and explanatory potential; whether the source contains discernible ‘nuggets’ of evidence; and evidence of trustworthiness with no study excluded based on a single aspect of quality (32). The criteria applied are outlined in Table 5.1

Table 5.1: Inclusion criteria (10)

<p>Include the study if:</p> <ul style="list-style-type: none">• It contains ‘nuggets’ of evidence that provide insight into the review questions, such that even where the aims of the study diverge from the main focus of this review, if a ‘nugget’ of evidence relevant to the review questions is provided, this article is included. <p>AND</p> <ul style="list-style-type: none">• It is assessed to go beyond a superficial description or commentary, i.e. is a competent attempt at research, enquiry, investigation or study (33). This can include qualitative studies using key informant interviews and policy document reviews, surveys, expert legal analyses, case studies, reviews of primary research (if the method was stated) or descriptive models/frameworks (if based on primary data). <p>Exclude the study if:</p> <ul style="list-style-type: none">• The focus is on agricultural policy, food safety, genetically modified foods/GM food labelling, or biotechnology.• It analyses trade and investment agreements, WTO disputes but do not also explicitly analyze the impacts (or potential impacts) on health policy processes (prospectively or retrospectively) OR policy space.• It examines how trade liberalization impacted on health determinants and outcomes but not on health policy processes.• Books and book chapters.

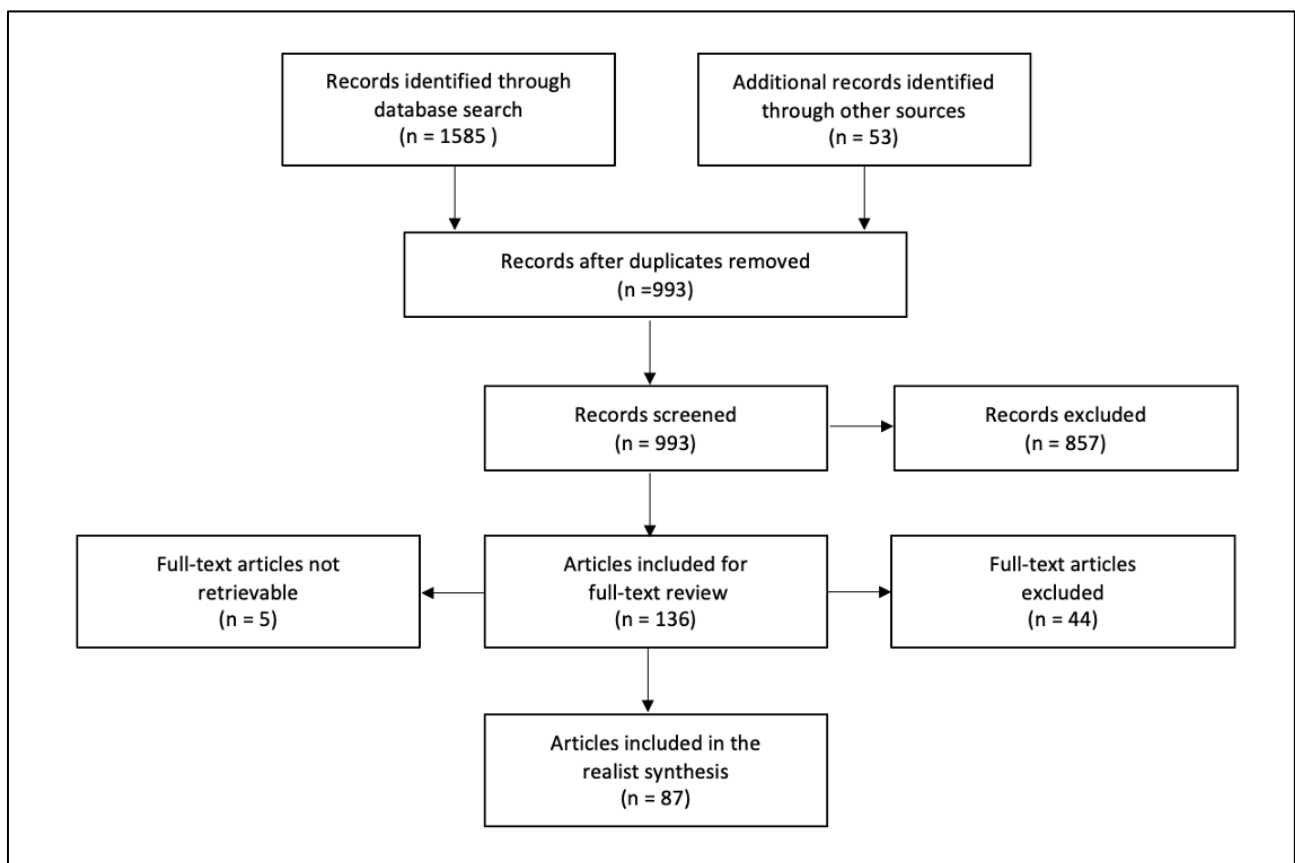
2.2.3 Selection and appraisal of documents

Electronic searches yielded 1585 results. A further 53 sources were identified through citation tracking, bibliography and grey literature searches. After removing duplicates, 993 unique sources remained. Following the realist approach and due to the limited literature, an intentionally inclusive approach was taken throughout the selection process (10).

Articles underwent a preliminary screening of their titles and abstracts using the inclusion criteria (Table I). Commentaries (unless based on empirical evidence or providing key anecdotal evidence), editorials, opinion pieces, conference abstracts, and data-free models/frameworks were excluded (10). After a scoping of included literature, this review was narrowed to include just the impact of international investment treaties on the three policy areas (international trade is explored separately (10)). The first reviewer's screen subsequently resulted in 136 texts being retained for full-text review.

Full texts were retrieved for 131 of the 136 articles. Five articles were not retrievable. The 131 full texts were again assessed for relevance based on the test for inclusion. Full-text review resulted in exclusion of a further 44 articles giving 87 relevant articles (Figure 5.1).

Figure 5.1: Screening flow diagram



Ten percent of the articles were reviewed by the second reviewer both at the preliminary screening and full text review stages. There was 100-percent inter-reviewer agreement on evidential relevance and study quality at both stages and the remaining texts were assessed for inclusion by the first reviewer only.

Information on study characteristics (e.g. study type, methodological approach, health issues covered) and the rationale for final inclusion/exclusion in the realist synthesis was documented on a screening tool

(Appendix Two) adapted from a similar set of constructs (34). It was not possible to apply a single recognized quality appraisal assessment tool to included studies due to the diversity of discipline and methods across included articles. Instead, following the realist approach, the focus was on assessing each nugget of relevant evidence identified within the study for its reliability and relevance to theory development (10).

2.3 Data extraction, analysis and synthesis processes

The final 87 articles included in the synthesis were imported into NVivo (QSR International). ‘Nodes’ were generated for each preliminary explanatory theory. Data considered useful for theory development, including data that supported or challenged preliminary theories and relevant contextual factors were extracted by the first reviewer. New nodes were generated as additional useful theories emerged and relevant data extracted. The data extracted under each node were imported into a Word document for analysis and synthesis.

3. RESULTS

The 87 articles selected for inclusion in the synthesis covered a number of different disciplines including public health, international law and political science. Articles varied in design and quality and included analyses of investment protection chapters and provisions; analyses of investor-state disputes; surveys and key informant interviews investigating policy-makers’ consideration of investment protection obligations in policy decision-making processes; case-studies of potential regulatory chill responses; and critical analyses of industry and policy documents.

We identified a very limited number of empirical analyses. A major reason for this is likely to be the significant challenges associated with studying policy non-decisions. In addition, our enquiry was inherently multi-disciplinary in nature with legal, political and social science research providing valuable insights. For these reasons analyses based on expert opinion and deductive reasoning as well as empirical studies were included. Notably, analysis of contextual factors was not included as a primary research objective in any of the studies and were typically only discussed superficially.

3.1 Political and economic drivers of international investment-related NCD prevention policy non-decisions

Very limited empirical research was identified that primarily or explicitly explores the more political and economic dimensions of how international investment liberalization may shape actor interests and priorities in ways that affect NCD policy.

The neoliberal paradigm follows that free, open and competitive markets will achieve economic growth, development and shared prosperity (35). Privatization and liberalization of cross-border capital flows are key elements of neoliberal policy reform (36). While the relationship between neoliberal reforms and FDI into developing countries is complex, private foreign investment is often, although not always, considered by governments to be a fundamental source of employment, production (and specifically for food, more efficient and reliable supply chains (4)), technology transfer, tax revenue (4, 37) and economic growth. As such, attracting FDI is a key pillar of the economic development plan in many LMICs, including investment into the processed food, alcohol and, in some cases, tobacco sectors (4). Thow et al. for example, found that a dominant 'Economic Growth' policy coalition in South Africa held the core belief that employment and economic growth were the primary mechanisms to achieve food and nutrition security (38). This coalition's beliefs that align with the neoliberal dispensation dominated in South Africa's policy documents governing the food supply. For example the National Development Plan 2030 includes objectives to increase investment in the agro-processing sector (of which food is a major sub-division) as a means of increasing the production of value-added processed goods and employment, despite national public health goals of reducing obesity and diet-related NCDs (38).

Given many governments' belief that FDI from private corporations is critical to job creation and economic development, THCC's access to, and influence within, political decision-making spaces may be significantly expanded (4, 9). Governments may also be independently willing to refrain from regulating in relation to THCC activities and products in order to attract FDI. For example, Uzbekistan's domestic tobacco company was privatized in a deal with British American Tobacco (BAT) in 1995, however the company delayed completing its investment (the largest single source of FDI into the country) until a proposed ban on tobacco advertising and smoking in public places and health warnings on packages was replaced with BAT's voluntary advertising code and cigarette excise tax rates were reduced by 50% (9, 39, 40). BAT went on to attempt to influence cigarette tax policy everywhere it sought to invest with documented efforts in Hungary, Belarus, Ukraine, Kyrgyzstan and Cambodia and other TNCs secured similar concessions as conditions of investment (9, 41). When the Laotian Government sold its domestic tobacco monopoly to a foreign investor, a stabilisation clause in the contract committed the government to freezing excise tax on tobacco products for 25 years (42).

In 2001 the Nigerian government signed a memorandum of understanding with BAT Nigeria to make an investment of 150 million USD to build a state-of-the-art factory, improve the quality and quantity of locally grown tobacco and develop potential for regional export (43). Following this there was a 10-year gap between Nigeria's ratification of the FCTC in 2005 and the formulation and passage into law of a comprehensive tobacco bill in 2015 (43). In Malawi, tobacco control advocates report in one 2018 study that

Japan Tobacco International, which has significant investment in manufacturing in the country, is driving Malawi's tobacco agenda (44).

Threat of foreign investor flight may also promote NCD policy non-decisions. For example, when food companies threatened to move their investments out of Fiji and that jobs would be lost when the government suggested regulating the food supply to create a healthier food environment, the government decided it was in their best interest not to pursue such options (45).

For THCCs, FDI, as opposed to trade, is considered the preferred and primary method for entering new markets since it can be more cost-effective than exporting products, it avoids trade barriers, optimises the effectiveness of branding and promotional activities and can rapidly assist them to gain market dominance (5, 46). For example, investment liberalization through NAFTA resulted in huge accelerations of FDI from American processed food corporations into Mexico and, various transnational food corporations have used FDI to expand into LMICs globally (46). Transnational tobacco companies (TTCs) have used foreign direct investment to gain access into LMICs markets by way of joint ventures or leaf development agreements with state-owned/local companies and the establishment of manufacturing facilities, including in Malawi, Nigeria, Mozambique, Uganda, Zimbabwe and South Africa (39, 47). In Vietnam for example, British American Tobacco took advantage of the government's 'need' for FDI to negotiate an advantageous joint venture partnership (48).

The cross-border investment practices of THCCs have contributed to the accumulation of vast material resources by THCCs. This translates into material power that THCCs can use to implement comprehensive, sustained and unparalleled efforts to influence regulatory environments in their host countries. Once dependent on foreign capital, TTCs have acquired the local companies taking control of the market in a number of developing countries, including Cambodia and Vietnam and a number of Former Soviet countries (39). During the 1990s TTCs made similar acquisitions of state-owned tobacco companies in Sub-Saharan Africa including RJ Reynolds in Tanzania, and Japan Tobacco International in both Malawi then later in 2011 in Sudan (47). Transnational alcohol companies have undertaken similar takeovers. For example through a number of share acquisition deals, Diageo became the majority shareholder in India's United Spirits Limited, taking a leadership position in the Indian alcohol market (49). Diageo and SABMiller, two of the world's largest alcohol corporations, have made significant strategic investments in production hubs across LMICs (50). THCCs also tend to invest at multiple points in a product's supply chain. While supply chains are often global, they can also exist largely in just one country, for example Coca Cola has invested in cane sugar refinement, beverage production, bottling and refrigeration of sugar-sweetened beverages in Brazil alone (4).

3.2 Drivers of ISDS-related NCD prevention regulatory chill

The majority of literature on international investment and health policy identified in this review focused on ISDS-related regulatory chill. Analyses suggest that the threat of an investor-state dispute can be used by THCCs as a mechanism to potentially prevent or stall NCD regulatory development at a relatively low cost (51, 52). This strategy of influence becomes particularly relevant when THCC legitimacy declines and their access to policymaking spaces is limited, prompting them to claim alternative spaces of influence (13). Where investor-state disputes are in fact brought, THCCs effectively shift health policy decision-making to private international arbitrators residing within international investment legal venues, where THCCs interests may be prioritised (53, 54). THCCs have strongly supported both the proliferation of IIAs and more recently have lobbied for the inclusion of investment chapters, and specifically ISDS, in multilateral trade agreements. For example, before the US withdrew from the agreement, Phillip Morris International submitted comments to the US Trade Representative indicating its support for protection of investor rights in the Transpacific Partnership Agreement (TPPA), describing the ISDS provision as ‘vital’ (37, 52).

3.2.1 Incentives for THCCs to use ISDS

There are minimal restrictions on the initiation of an investment dispute under the majority of IIAs giving THCCs wide discretion to file claims (55). Further, pursuing an investor-state challenge, regardless of ultimate success, may be in the corporate interest, since the economic value of simply delaying the implementation of a public health measure via lengthy legal processes that maintain uncertainty, may outweigh the expense associated with the arbitration itself (37, 56). This is supported by evidence that despite repeated legal advice that the TRIPS agreement provided no protection against tobacco health warning labelling or plain packaging, tobacco companies continued to threaten that expropriation of the companies’ intellectual property would result in significant financial damages. This contributed to a chilling effect on these regulations for more than a decade (57). When plain packaging was again on the agenda in 2011 Phillip Morris continued to use the same unsupported TRIPS-based argument and eventually initiated an investor-state dispute on these grounds (52). Australia and Uruguay’s tobacco control-related ISDS disputes lasted for four and six years, respectively (17), causing significant delays in policy adoption.

Further incentive for THCCs to proceed to an investor-state dispute comes from evidence of its ripple effect out across jurisdictions. By strategically targeting countries attempting to introduce precedential public health policy, THCCs may prevent a so-called domino effect regionally and globally (54, 56). For instance, the ISDS case filed against Uruguay for their requirement that health warnings cover 80% of a tobacco product’s package surface (51), and against Australia for their standardized packaging regulation, both precedential in nature, supports this hypothesis (52). Arguably, given these countries’ legal positions were relatively strong, legally challenging them sends signals to other countries that any similar measure may also be challenged,

and a number of countries delayed adoption of standardized packaging during this time (17, 56). Conversely, THCCs may exercise a degree of caution in proceeding to investment arbitration since it carries the risk that their arguments will be dismissed as illegitimate, undermining future use of such arguments in lobbying activities (52).

3.2.2 Ambiguity of international investment agreement rules

In threatening or pursuing an investor-state dispute, corporations take advantage of ambiguity in the definition of key terms/obligations within IIAs which effectively broaden the scope of investment protection and therefore opportunities for THCCs to challenge regulations, including those related to harmful products (37, 55, 58-64). 'Investment' is also defined very broadly in most investment treaties (17). In NAFTA, and in more recent agreements including the leaked draft of the TPPA, investment is defined as applying to any assets characterised by 'a commitment of capital or other resources, expectation of gain or profit, or assumption of risk' (65, 66). This makes it very difficult for a country to avoid investment arbitration on the basis that a THCC bringing a claim does not have a relevant investment (65). The TPPA's broad definition could potentially make trademarks, and therefore packaging and labelling of risk products, a covered investment protected under IIAs (67). The meaning of 'indirect expropriation' is also highly debated (17), the details of which are further explored in Appendix Seven which provides a review of the literature on IIAs investment protection obligations relevant to risk commodity regulatory space.

Additionally, arbitration panels are required to interpret IIA rules based on the agreement's overall purpose and objectives outlined in the preamble (68). Unless also included in the preamble, they are not obligated to consider public health or other social goods, including a state's other international obligations such as those under the Framework Convention on Tobacco Control (FCTC) (13). In disputes brought under NAFTA for example, arbitrators were required to interpret investor rights under the Investment Chapter in the context of NAFTA's overall objectives which were entirely commercial, although the preamble did include resolutions to preserve states' flexibility to safeguard public welfare (68). While NAFTA also included a provision within Article 1101 that appeared to carve out public health measures from liability under the investment protection chapter, these measures were required to be 'otherwise consistent' with the chapter (68).

Overall, the vagueness of substantive rules and broad protection offered to corporations in IIAs may contribute further to the uncertainty for governments in assessing a measure's potential to trigger an investment dispute. This may encourage governments to take a risk-averse approach and pursue a weakened regulation or refrain from regulating, including for measures that would in fact be compliant with international investment law (16, 58, 62, 69).

3.2.3 Inconsistency in interpretation of international investment rules

A number of legal analyses have determined investment law interpretation and arbitral outcomes in cases with relevance to public health have been somewhat unpredictable and inconsistent, making it challenging for governments to assess their risk of attracting or losing an investor-state dispute (60, 61, 70). For example, in 1998 Chemtura Corp initiated arbitration against Canada arguing NAFTA violations regarding a ban on the use of lindane, a hazardous pesticide (71). The arbitration panel rejected Chemtura's case stating that '[T]he rule of Chapter 11 Tribunal is not to second-guess the correctness of the science-based decision-making of highly specialized regulatory agencies' (71). In contrast, Tecmed filed a claim against Mexico in 2003 for revoking their permit to operate a landfill due to violation of various health and environmental regulations. In this case the arbitration panel stated 'we find no principle stating that regulatory administrative actions are per se excluded from the scope of the Agreement, even if they are beneficial to society as a whole —such as environmental protection' (69).

The inconsistency in past dispute decisions results from a combination of different factors. First, unlike for international trade, there is no single IIA protecting foreign investors and no single multilateral institution that governs international investment policy or arbitration (60). Consequently, governments have developed investment law on an ad hoc basis from which customary international law has emerged (60) and the interpretation of relatively vague IIA obligations is left to the discretion of each arbitration panel (17, 56, 60). Further, panels are not obligated to base their decisions on previous dispute decisions (17, 37, 61). This leads to different interpretations of the law and different assessment of cases involving the same facts (63), ultimately generating competing case law which provides a basis for future tribunals to reach different conclusions in almost identical cases (61, 63, 66). For example, while Australia's win on jurisdiction made it more politically viable for other states also to introduce similar tobacco standardised packaging regulations, future tribunals are not required to follow previous decisions, and therefore tobacco companies may pursue investment arbitration for similar regulations elsewhere (70). Uncertainty may be compounded by the lack of an appeal mechanism in investment arbitration through which parties can seek review of the interpretation of a law (16, 63, 66, 70, 72). Further, there has historically been limited transparency in ISDS proceedings (17). A combination of these factors makes it challenging for governments to evaluate the compliance of a proposed regulation with their investment obligations, creating uncertainty that may contribute to a chilling effect on certain public health-relevant regulatory development (16, 61, 69).

3.2.4 Cost of investment arbitration

The high costs associated with defending against an investor's claim, in the context of inequitable financial resources between corporations and states, may also make investment arbitration a powerful tool for THCCs to generate a chilling effect on domestic health regulation. When a regulation is pursued, despite implications

for international investors, the international investment system makes policymaking more complex and costly for governments. While arbitration panels don't have the authority to order reversal of regulations, they can award monetary compensation to investors covering the damage resulting from expropriation and loss of profits (56). Countries have faced investor claims up to US\$114 billion and actual awards of compensation averaging US\$545 million and as high as US\$1.77 billion (63, 73). Even if a government is confident that they can win a dispute, experienced investment lawyers cost millions regardless of the outcome (72, 74, 75). On average an investment arbitration case costs upwards of US\$8 million for a defending state, of which legal fees account for approximately 80% (63, 66, 70, 71, 76, 77). In Phillip Morris Vs Uruguay the defendants incurred expenses of US\$28.5 million however this was reimbursed when the tribunal dismissed the claims (17).

Only anecdotal evidence supporting the theory that high cost of investment arbitration can contribute to regulatory chill was identified (37, 67). Uruguay's government acknowledged it was only able to defend itself against Phillip Morris International's challenge after receiving support from Bloomberg Philanthropies to finance their legal team (37, 64, 78). In 2002, Indonesia granted exemptions from an open-pit mining ban in protected forest areas to a list of 13 companies after they threatened to initiate arbitration against the state (16, 69). The Indonesian government claimed they did not have the finances to pay the compensation to investors (69).

3.2.5 Biased arbitration panels

Uncertainty of investor-state dispute outcome may also be exacerbated by both explicit and implicit bias (real or perceived) in arbitral rulings (79). The arbitration community is fairly highly concentrated and the top 25 arbitrators have been represented in over one third of all arbitral appointments in a data set of 2676 cases (80). Arbitration panels are composed of three arbitrators, each party appoints one and the third is jointly appointed. Each arbitrator is compensated by parties to the dispute on a case-by-case basis without secure tenure. This has raised concerns over potential conflicts of interest, the independence and explicit bias created by the system (60, 61, 67, 81). If an arbitrator interprets provisions in such a manner as to favour investors, they may promote future use of the ISDS mechanism by foreign investors (13) and investors are more likely to appoint that arbitrator in future arbitration (16, 66). Conversely, if they develop a reputation for ruling in favour of states, they may be more likely to be repeatedly appointed by defending states. Additionally, arbitral appointment is heavily influenced by legal counsel which creates potential for special favours (80).

Implicit bias may arise since lawyers are free to rotate between roles as legal-counsel and arbitrators in different cases (60, 66, 72). This so-called 'double hatting' has been empirically confirmed to have persisted over time amongst a very small elite group of actors (80). Double-hatting is problematic since when making

a decision as arbitrator in one dispute, it may be difficult not to be influenced (consciously or subconsciously) by the arguments made as counsel in another dispute with similar legal issues (72, 80). Further, arbitrators are experienced international trade and investment lawyers, nearly all from high-income countries and typically have no expertise in public policy which may contribute to an implicit bias towards foreign investors (16, 58, 66). A number of arbitrators have also served as members of boards of multinational corporations creating significant conflict of interest issues (63).

The empirical evidence for bias in arbitral rulings is mixed. One analysis of 197 ISDS cases involving LMIC defendants from the UNCTAD database before September 2016 found that arbitral panels overall were not more likely to rule in favour of the claimant with a ratio of investor wins over state wins of 0.89 (82). The study did find evidence that panels identified a priori as biased towards investors were more likely to rule against LMIC respondents but the same biased rulings were not found in disputes involving HICs (82). Another empirical legal analysis of trends in legal interpretation in ISDS cases conducted in 2012 found tentative evidence that arbitrators favour investor claimants over respondent states (83). Regardless of whether this bias is real or perceived, it can nonetheless create uncertainty for governments in determining the likely outcome of a potential dispute and may therefore contribute to a regulatory chilling effect.

Notably, the high revenue gained through investment arbitration perversely incentivises law firms to promote the use of investment arbitration and the rise in investment arbitration annually since the 1990s has in part been attributed to such promotion (73). Arbitrators have also actively promoted the importance of ISDS to promote foreign investment and lobbied against reform (63, 84).

3.3 Evidence of regulatory chill

3.3.1 Response chill

Response chill refers to a chilling effect on a specific proposed or adopted regulatory measure after a government becomes aware of the risk of investment arbitration (12-14). This can result from the actual initiation of a dispute, threat of an impending dispute, or perceived threat based on other states' experience in relation to similar legislation (71). The evidence for this was primarily identified in individual case-studies. In the 1990s, the tobacco industry used NAFTA's Investment Chapter 11 to argue that Canada's proposed tobacco plain packaging regulation equated to illegal expropriation of its trademark requiring hundreds of millions of dollars in compensation (85). Threats of investment arbitration heavily impacted parliament's decision to abandon the proposal (85). In the early 2000s a ban on misleading cigarette labelling terms (e.g. 'light' and 'mild') were also delayed in Canada after Phillip Morris again argued the ban violated NAFTA (86).

In 2014 threats of investment arbitration by the tobacco industry over New Zealand's proposed plain packaging bill was a key reason adoption of the bill was delayed (87, 88). BAT New Zealand, for example, claimed the bill was in violation of New Zealand's IIA obligations and would entitle the company to 'an arbitral award requiring New Zealand to repeal the legislation and/or pay substantial sums in compensation' (88, 89). New Zealand and Thailand also delayed progress on plain packaging until the decision was known in the ISDS case against Australia (56, 69, 87, 90). It was also one of various factors that delayed the EU's draft Tobacco Products Directive and the UK's 2014 decision not to proceed with plain packaging (56). In 2012 BAT attempted to use the Australian legal cases to intimidate Namibian officials into not proceeding with their proposed Tobacco Products Control Act (91).

It is important to note that Australia pursued tobacco plain packaging legislation despite industry arguing, among other things, that the measure would violate their intellectual property rights, expropriate their investment and not accord them fair and equitable treatment under the Australia-Hong Kong Bilateral Investment Treaty (92). This indicates that the threat of an investor-state dispute is just one of multiple interacting factors influencing policy decisions.

3.3.2 Precedential chill

The potential for state actors to change a regulation in response to a settled or resolved investor-state dispute due to concern of future arbitrations based on the same regulation, has been defined as precedential chill (69, 71). In this case a state will roll-back progressive public health policy after they or another country loses an investor-state arbitration (71). One example that may, to some extent reflect this form of regulatory chill is the 1997 ISDS case of US Ethyl Corporation vs Canada as reported by Tietje (2014). Ethyl Corporation, a US company importing and distributing the gasoline additive MMT in Canada, brought an ISDS claim against the Canadian government under NAFTA for banning MMT imports and inter-provincial trade (71). After an unfavourable decision in domestic courts under Canada's Internal Trade Agreement, the Canadian government decided to settle the ongoing NAFTA investment dispute by agreeing to pay Ethyl CAD\$20 million and repealed the MMT ban (71). While some consider the loss in domestic courts was the primary driver of the Canadian government's decision to roll-back the ban, others argue investment dispute-related concerns may have also played a role (71). In 2011, Lone Pine Resources initiated a dispute against Quebec's revocation of its right to mine for oil and gas under the Lawrence River without compensation after a moratorium on hydraulic fracking of shale gas was passed in 2011 due to public health and environmental concerns (71). While the outcome of the case is still pending, some experts are concerned that if governments can't even take time out to study the deleterious impacts of corporate activities without have to compensate corporations, this could have a significant chilling effect on public policy (71).

3.3.3 Anticipatory chill

Some researchers have raised the concern of anticipatory chill- that policy-makers may take into account potential disputes with foreign investors during the policy development process, hampering regulatory progress across a range of public health policy areas (69, 71, 93). One 2014 study assessed 50 in-depth interviews complemented by an electronic survey of 114 Canadian health and safety and environmental regulators concluded there was low level awareness among policymakers of the potential threat of investor-state challenges to regulations; and that policymakers rarely consider Canada's trade and investment obligations when developing regulations, but when they do, World Trade Organization (WTO) obligations are of primary concern (76). The study also included in-depth interviews with tobacco control regulators from 11 countries complemented by 28 electronic surveys completed by tobacco control regulators in 28 different countries (76). The findings here reflected those found amongst Canadian regulators.

Somewhat in contrast, the 2016 case study from Canada previously mentioned, found that the Ethyl Corp case described above 'drew much more attention to ISDS' and after which there was widespread reluctance to develop policy since it might also trigger litigation under NAFTA (94). The study found that various 'government ministries have changed their decision-making to account for trade concerns including ISDS' (94). This included a standardized regulatory impact assessment process for evaluating policy and regulatory proposals for trade and ISDS risk (94) and generally significantly greater involvement of government lawyers to vet proposals for compliance with trade and investment rules.

Internal vetting processes for compliance with international trade and investment obligations have also reportedly been institutionalized in multiple other countries. For example Peru, Guatemala, Panama and the Dominican Republic have adopted formal vetting processes for any new regulation to consider its trade and investment implications including a 'dispute prevention' mechanism (37). New Zealand and Australia have adopted regulatory management regimes that incorporate risk assessment processes assessing policy consistency with international trade and investment obligations (88). The Regulatory Coherence chapter in the Comprehensive and Progressive Agreement for Transpacific (CPTPP) Partnership signed by 11 countries in 2018 after the US withdrew from the TPPA, encourages parties to establish regulatory impact assessments to ensure regulations are necessary, not unacceptably costly, and evidence-based; a national body for ensuring inter-departmental consultation and coordination; and establishes a Committee on Regulatory Coherence comprising of government officials to promote regulatory coherence between CPTPP parties (95). The institutionalization of such mechanisms has the potential to shift health policy decision-making power from departments of health to departments of trade or state legal actors from an early stage of policy development.

3.4 Contextual factors

Various contextual factors were identified that may mediate the ability of THCCs to promote investment-related policy non-decisions or ISDS-related regulatory chill, primarily in case study analyses. It was not possible to assess the potency of each factor and generally a combination of factors are likely to be influencing any single policy/regulatory decision.

3.4.1 Domestic economic conditions

As 'rule takers' in trade and investment negotiations, LMICs may be committed to a more diverse and inconsistent set of investment rules compared to HICs as 'rule makers' and therefore able to ensure their IIAs are relatively uniform in content (79). This, along with already limited financial and technical resources to ensure their regulatory regimes comply with strict and demanding investment protection standards set out in IIAs, may make LMICs particularly aware of their vulnerability to legal threats from investors in relation to regulatory development (72) and therefore reticent to implement regulatory change before a threat of investment arbitration is even made (72).

With limited government budgets, LMICs are also likely to perceive the potential costs associated with an investor-state dispute as unacceptably high. Investor state disputes typically cost more than US\$1 million annually which would exceed the budget for tobacco control in many LMICs (64). In a ruling against the Czech Republic, an arbitration panel ordered compensation equivalent to the country's annual health budget (13, 61) and in a case against Ecuador investors claimed the equivalent of 7.5% of annual government expenditure and was eventually awarded 1.92% of it, greater than government's annual expenditure on health (72). Legal expenses can affect the cost-benefit analysis of a health measure by increasing the initial costs (52), as such governments may be more likely to take a risk averse approach and refrain from regulating (52, 78, 93). This regulatory chill effect may occur regardless of a government's perception of their ability to successfully defend proposed legislation (37, 55, 58, 66, 70, 90).

LMICs with major concerns over unemployment, public and private debt and the need for economic growth may also be more dependent on foreign investment and therefore may be particularly vulnerable to investment-related policy non-decisions (9, 81). Concern that NCD prevention regulation will affect investors' profits and/or trigger an investor-state dispute may be perceived as being 'anti-investor', potentially leading to investor flight or detracting future foreign investment (16, 87). For example, with a relatively weak economy and reliance on the extractive industry, in 2002 Indonesia backed down on a proposed ban on open-pit mining after mining companies threatened investor-state arbitration (16, 69). Reliance on foreign aid may also make a LMIC more vulnerable to investment arbitration-induced regulatory chill since they may not wish to negatively affect their relationship with an investor's home state which may be an important source of financial aid (16).

3.4.2 Domestic technical resources

Without internal legal expertise in international investment law or the finances to hire expensive international lawyers, regulators, again particularly in LMICs, may find it difficult to reasonably evaluate their compliance with their international investment obligations. This may result in THCC threats being perceived as more credible than they are. As such legal capacity constraints may reduce the political will required for implementation of a risk commodity regulation (52). Further, understanding their defense would potentially be sub-optimal may increase the likelihood that a LMIC decides to refrain from regulating. While we found no specific evidence to support this theory, two recent studies of investment arbitration decisions found tentative empirical evidence that developing countries are much more likely to lose a dispute than developed countries (79, 83). At the same time, a THCC may presume they would have an advantage in litigation due to their superior legal support and may therefore be more likely to bring a weak claim against an LMIC (79).

3.4.3 Political conditions

Political orientation may also affect the likelihood of regulatory chill (23, 81). For example, centre-right parties in both the UK and New Zealand delayed enacting tobacco plain packaging while centre-left and left governments in Australia and Uruguay, respectively, both progressed towards implementation despite threats of investment arbitration from the tobacco industry (96). Notably, some Australian right-wing parties opposed to plain packaging used the legal risk of introducing such legislation as reason not to regulate (87).

Policy central to a government's mandate is more likely to withstand legal threats from industry (71). For example, while the New Zealand government's position on plain packaging had been ambivalent before Phillip Morris initiated a dispute with Australia (88), tobacco control was a key part of the government of Uruguay's policy plan (21) and proved critical to withstanding industry legal threats and eventual investment arbitration (97). Similarly, in Australia there was strong bipartisan support for tobacco control (87). Further policy champions/political leadership is crucial, as was also seen in the Australia plain packaging case (87).

Precedents set by other countries and reputational concerns can also be a powerful counter force to fear of investment litigation. For example, after more than a six year delay due to concerns over investment arbitration (87), New Zealand's government brought plain packaging into force in 2018, at least in part to avoid reputational damage in light of Australia's progressive approach to tobacco control (88).

3.4.4 Previous exposure to investment arbitration

High level of awareness or previous experience with investor-state disputes may also make a government especially reluctant to engage in a dispute (93). However, the limited evidence relevant to this theory is mixed. The 2016 Canadian case study previously referred to identified that concerns of investment litigation over new regulations was more pronounced after a ministry had been involved in a NAFTA dispute (94). In contrast, from 2008-2018 Slovakia faced three investor-state disputes relating to the reversal of previous privatization of the Slovak health insurance market, including one in which Slovakia was required to pay EUR22 million in compensation to the investor (63). These cases however did not prevent the government from establishing a public health insurance scheme (63).

3.4.5 Industry-related factors

The real or perceived economic contribution of an investor can determine their influence in policy decisions (81) and possibly also their ability to elicit regulatory chill using the ISDS mechanism. In highly concentrated industries such as the alcohol industry, a handful of large multinational companies control significant proportions of most domestic markets and with massive investments they are able to claim enormous loss or damages resulting from regulatory development under IIAs. The size of such claims and the prospect of facing a large and extremely well-resourced THCC in investment arbitration may increase the likelihood of regulatory chill.

Evidence indicates industry legitimacy may also play a role. During the 1990s when the tobacco industry still maintained a degree of legitimacy and political support, its threats of an investor-state dispute against Australia and Canada over proposed plain packaging were highly effective and contributed to the regulations being abandoned (15, 98). Twenty years later, when the tobacco industry had lost political capital and been denormalized, similar threats and pursuit of investment arbitration against Australia for plain packaging legislation, did not produce the same direct effect. Currently the UPF food and alcohol industries are perceived by governments as important stakeholders in growing national economies and to address NCDs, and their products are perceived by the public as not necessarily harmful to health if consumed in moderation (70). While it remains to be seen, investment arbitration may therefore be a powerful instrument available to these industries to prevent or stall food and alcohol regulatory development. That said, high levels of industry legitimacy may mean these industries do not need to resort to legal threats since they have multiple other effective tools at their disposal to influence the regulatory environment.

3.4.6 Risk commodity-related factors

Regulation of alcohol and unhealthy food are not supported by an international treaty as a basis for consumption-control measures and there is relatively limited availability and acceptability of scientific

evidence for regulations to reduce alcohol abuse or unhealthy diets (70, 99). There is also a far broader range of alcohol and unhealthy food products with differing compositions, and low consumption of these products does not necessarily have demonstrable harmful health impacts (70). For these reasons, it may be relatively more difficult for host states to prove that food or alcohol regulatory measures are proportionate and contribute to legitimate public health objectives (70). These factors may make governments more susceptible to ISDS-related policy chill.

3.5 Recommendations

Given the described drivers of international investment-related policy non-decisions including regulatory chill, and with consideration of modifiable contextual factors, various recommendations were also identified through analysis and synthesis of existing literature.

3.5.1 Addressing the political and economic drivers of investment-related policy non-decisions

Upstream strategies that prevent or at least limit ‘unhealthy’ investment may be one option for curtailing THCC’s influence in NCD policy processes. These include adopting health-orientated conditionalities on FDI by THCCs including for example on fiscal issues, marketing, product composition and labelling (100). Other upstream options include compulsory health risk assessments for evaluating proposed incentives for FDI in relevant sectors (4). However, unless efforts don’t also focus on shifting the dominant belief amongst powerful economic actors that employment and economic growth achieved largely via market strategies will address NCDs, it is unlikely governments will be willing to consider restricting FDI on health grounds.

International health instruments may be used to shift towards ‘healthier’ investment policy norms. These could include ensuring THCCs are on a list of sectors excluded from further investment liberalisation and encouraging countries, in a non-discriminatory manner, not to promote or allow any further investment from THCCs unless certain health conditionalities are met (40). International health instruments may also be used to promote the protection of health regulatory space in IIAs (17). For example, guidelines on controlling tobacco investments (both foreign and domestic) could be incorporated within the FCTC (40).

As discussed in related work on trade liberalization and NCD prevention policy, limiting investing THCC’s ability to leverage their economic contribution to influence domestic health policy will also require transparent and enforceable rules governing interactions between THCCs and governments (101). Article 5.3 of the FCTC, for example, legally obligates parties to adopt measures that protect ‘their public health policies related to tobacco control from commercial and other vested interests of the tobacco industry’ (102).

3.5.2 Reforming international investment protection rules and procedures

Various strategies for reforming international investment rules that enable THCCs already invested in a country to use the ISDS mechanism for generating regulatory chill have also been proposed (52). The first option is to simply exclude the ISDS mechanism from IIAs. A number of countries have already taken assertive action. For example, a number of South America countries, South Africa, and Indonesia having either refused to permit the inclusion of ISDS in new TIAs or cancelled/let lapse existing TIAs containing ISDS (103); Brazil has concluded a number of Co-operation and Facilitation Investment Agreements which exclude ISDS altogether (104); and 28 EU states have agreed to terminate ISDS arrangements between themselves, committed to exclude ISDS from any of its current negotiations, proposed replacing ISDS with an Investment Court System modelled after the WTO dispute resolution system with appointed permanent judges and proposed an appellate mechanism (105).

Including general health exceptions in future IIAs and investment chapters in trade agreements is one of many 'softer' options. However, it may do little to reduce litigation bought by corporations since it still requires states to provide an affirmative defense (64) and some legal analysts argue that protection of investor rights usually trumps provisions protecting health policy space (68). For example, although NAFTA's Investment Chapter contained provisions affirming the right of governments to protect public health, the measures needed to be 'otherwise consistent with this Chapter', essentially rendering the public health protection article redundant (68). Similarly worded exceptions are included in both the investment chapters of the recently signed agreement between Canada and the EU (CETA) and the TPPA draft (17)(75). The TPPA also included in Annex 9.B that 'non-discriminatory regulations...designed for legitimate public welfare objectives', including health and the environment, 'do not constitute indirect expropriation, except in rare circumstances'. This seems to protect regulatory space against disputes based on indirect expropriation (75). However, without defining 'rare circumstances' or what constitutes a 'legitimate objective', interpretation remains open (55, 64, 75, 84) and public health measures including tobacco, alcohol and food regulations may still be considered as compensable indirect expropriation (55).

Complete carve outs (or exclusions) for specific areas of investment from IIA obligations is another rules-based option (106). A specific carve-out of tobacco control measure was included the final TPPA text, although there are concerns this may undermine the protection of other health areas under general health exceptions and an overall regulatory carve-out or strengthening of the general exception may be a better approach (107). For example the Peru-Australia Free Trade Agreement clarifies that 'No claim may be brought under this Section [ISDS] in relation to a measure that is designed and implemented to protect or promote public health' (108, 109). While this may be possible for tobacco, for both political and issue complexity reasons, it may not be possible to do the same for alcohol and UPFs (4, 107).

Clarifying the meaning of key terms/obligations to limit the use of ISDS by investors and interpretation by arbitral panels is also needed. For example one strategy to clarify foreign investor's 'legitimate expectations' could be to develop a national policy for products harmful to health clarifying that foreign investors cannot reasonably expect the host country not to progressively advance public health measures in these areas (4). In the TPPA's Investment Chapter the Fair and Equitable Treatment Provision clarifies that 'an investor's expectation' by itself is insufficient grounds on which to sue for loss or damages (75). The TPPA's Investment Chapter also attempted to clarify the meaning and restrict the application of indirect expropriation. Annex 9-B refers to indirect expropriation as 'an action or series of actions by a Party [that] has an effect equivalent to direct expropriation without formal transfer of title or outright seizure' (84). A footnote to Annex 9B attempts to clarify that '[f]or greater certainty, whether an investor's investment-backed expectations are reasonable depends, to the extent relevant, on factors such as whether the government provided the investor with binding written assurances and the nature and extent of governmental regulation or the potential for government regulation in the relevant sector' (84).

Procedural improvements to the ISDS mechanism should also be sought to reduce the exposure of governments to ISDS and the uncertainty they face in relation to potential investment arbitration. These could include requiring investors to first exhaust domestic courts before proceeding to an international tribunal; giving the states involved in a dispute the right to issue binding interpretations of ISDS provisions; making it easier to dismiss frivolous claims; increasing openness and transparency of proceedings; asserting the right for a state to deny an investor protection under an IIA if they fail to comply with their obligations, which should include the human right to health; allowing states to file a counterclaim in response to a primary investor dispute filed by an investor for any violations of their obligations; and prohibiting arbitrators from working as lawyers on investment disputes (60, 110). As proposed by the EU, establishing a permanent international investment court system with tenured judges and an appeal process could promote the development of a 'more coherent body of jurisprudence on substantive and procedural international investment law' and eliminate the potential bias of ad-hoc arbitration panels (60). Adopting a 'loser pays' principle could also help prevent regulatory chill directly associated with the high cost of investment arbitration.

3.5.3 Post-treaty adoption strategies to reduce the risk of regulatory chill

Downstream, post-treaty adoption strategies to reduce the risk of regulatory chill include ensuring health policymaker confidence and ability to design health regulations that are compliant with their IIA obligations. This requires close collaboration between health, trade and legal departments throughout the policy development process. This was observed in Canada and Brazil when developing their tobacco additives bans and in Australia during the development of their tobacco plain packaging regulation to ensure compliance with their trade and investment obligations and to pre-empt industry opposition (87, 98, 99). Notably, this

level of coherence between trade and health actors was only considered possible when export interests were not an issue (99).

Ongoing specialist legal advice is also essential to maintain government confidence after threats of an investor-state dispute. In Australia's standardized packaging case, legal scholars provided sound legal advice to the government emphasizing their right to adopt this regulation (87). External technical and financial support will be important for many LMICs facing investment arbitration as was observed when Uruguay's government made the decision to defend its tobacco health warning labels regulation in an investor-state dispute only after receiving external support (97).

Further, international health instruments, particularly legally binding agreements, may give governments confidence to pursue public health regulations despite threats of investment arbitration. The FCTC again played a clear role in prompting Australia to adopt standardized packaging legislation and gave the government confidence it could withstand an investor-state dispute initiated by Phillip Morris (87). Further, some legal experts argue a consistent and recurring use of the FCTC by trade and investment dispute tribunals has resulted in the normative integration of the FCTC into the investor-state dispute process (111), which may also contribute to governments future confidence in adopting FCTC regulations.

Mobilization of transnational public health advocacy networks that include a wide range of actors, has been critical in promoting policy action despite the risk of legal action (23, 68, 81, 87, 97, 98). During Australia's plain packaging ISDS case, a tobacco control advocacy network extending well beyond the health sector that had built close trusting relationships with government officials, policymakers and the media over the previous decade which gave them access to and influence within decision-making spaces at that crucial time (87, 97). Canadian stakeholders have also identified public health and environmental groups' support as important for preventing regulatory chill (94). Similarly in the Pac Rim mining companies case against El Salvador, local community groups organized and pressured the government not to approve the mine for the protection of the local communities' health and the environment (16), this may have contributed to the governments' decision to proceed to arbitration which was ultimately decided in their favour.

Strategies used by advocacy networks to reduce regulatory chill include influencing issue interpretation through dissemination of strategic framing. Australia's tobacco control advocates consistently framed standardized packaging as beneficial both economically and for public health, highlighted the unique harms of tobacco and the child protection imperative (87). They also emphasized Australia's international legal commitment to the FCTC and exposed the patterns of manipulative industry legal attacks (87). Importantly, they avoided engaging in debates about the investment treaty breaches and advised politicians to do the

same. Together these efforts were credited by health policymakers as important contributors to avoiding regulatory chill (87).

4. DISCUSSION

This review found that THCCs may be incentivised to threaten or pursue an investor-state dispute since the costs may be outweighed by the benefits of even just delaying regulatory adoption, particularly since this effect tends to ripple out across jurisdictions. Drivers of regulatory chill may include ambiguity in treaty terms, inconsistency in arbitral rulings, potential arbitrator bias and the high cost of arbitration. While THCCs have recently received unfavourable outcomes in investor-state disputes relating to tobacco control regulation, evidence indicates ISDS can make innovation costly for governments and delay policy adoption both within the country directly involved but also in other jurisdictions. Additionally, governments are taking pre-emptive action for example by adopting standard assessments of public health regulatory proposals for trade and ISDS risk. Various economic, political and industry-related factors likely interact to increase (or decrease) the ultimate risk of regulatory chill.

While regulatory chill-related analysis is still an emerging area of research, comparatively very limited empirical research primarily analysing the broader political and economic dimensions of international investment-related NCD policy non-decisions was identified. However, there was some case study evidence indicating that THCCs do take advantage of governments' prioritization of foreign investment over NCD prevention objectives to influence the NCD prevention regulatory environment.

Over the longer term, promoting the adoption of many of the recommendations outlined in this review requires that public health policymakers vastly increase their capacity to and active engagement with investment policy development and agreement negotiations. While scholars have advocated for departmental capacity-building through technical training on the linkages between trade and health, and coordination between trade and health departments (98, 112-114), evidence presented in this review indicates such processes may be equally important to promote health objectives in investment policymaking.

Driving policy change will also require health advocates adopt discursive strategies that promote a shift in the way FDI, THCCs and NCDs are perceived, particularly by dominant economic actors and the public. Shaping perceptions of industry legitimacy through actor and issue framing is one such strategy. Tobacco control advocates have illustrated that industry delegitimization achieved through sustained efforts that expose unhealthy and nefarious industry practices, emphasize the public health, social and economic burden of health harmful products, and de-normalize THCCs, can help shift perceptions and ultimately policymaking norms towards prioritizing health over foreign investment and excluding investors from health policy

decision-making spaces (17, 87), including by enshrining these norms within both international health and investment agreements. Notably though, in a number of tobacco-producing countries, the economic imperative remains dominant and industry influence substantial. Further, due to issue complexity shifting perceptions and norms relating to UPFs and alcohol regulation will be an even greater challenge. Norm-shifting may also increase the likelihood that a government will withstand threats of ISDS from THCCs (87) and investment arbitration panels may be influenced by such norms in their rulings. For example, in the Uruguay case the panel commented that several modern IIAs explain nondiscriminatory regulations with 'legitimate public welfare objectives' like public health, do not constitute indirect expropriation (115).

5. LIMITATIONS

This review has a number of important limitations. Restricting the review to sources published after 2008 and our limited capacity to undertake multiple secondary iterative literature searches in keeping with the realist approach, may have resulted in relevant explanatory mechanisms and data that supported or challenged them, not being captured by this review. Also, identification and development of explanatory mechanisms may have been limited due to the very few studies identified on investment and health policy that explicitly engaged with political economy theory.

6. CONCLUSION

This review finds good evidence of the real potential risk of NCD prevention regulatory chill and suggests the contexts in which it may be more likely to occur. However, international investment-related NCD prevention policy non-decisions driven by broader political and economic factors, may well be more widespread and restrictive of NCD prevention regulatory environments. As such, there is a clear need for research that explores the more political and economic dimensions of how international investment liberalization may shape actor interests and priorities in ways that affect NCD policy. This will require empirical studies that engage with theories and approaches from international relations and political science, including political economy and power analyses.

The findings of this review indicate the need for a broader research agenda on the implications of foreign investment on NCD policy and objectives. Such an agenda should include regulatory chill-specific questions already posed by others (23, 116) such as how does the perceived risk of an investor-state dispute or direct challenge by foreign investors affect health policymaker's decisions?; but also questions that investigate the broader political and economic drivers of investment-related NCD policy non-decisions, for example, what are the barriers to greater coherence between investment and NCD policy and objectives?

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SECTION A – Student Details

Student ID Number	1602951	Title	Dr
First Name(s)	Penelope		
Surname/Family Name	Milsom		
Thesis Title	International trade and investment liberalization, corporate power and non-communicable disease prevention policy: A case study of nutrition and alcohol policy non-decisions in South Africa		
Primary Supervisor	Helen Walls		

If the Research Paper has previously been published please complete Section B, if not please move to Section C.

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SECTION E

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Date	23 August 2021

CHAPTER SIX: DOES INTERNATIONAL TRADE AND INVESTMENT LIBERALIZATION FACILITATE CORPORATE POWER IN NUTRITION AND ALCOHOL POLICYMAKING? APPLYING AN INTEGRATED POLITICAL ECONOMY AND POWER ANALYSIS APPROACH TO A CASE STUDY OF SOUTH AFRICA

CHAPTER OVERVIEW

Chapters Four and Five presented the theoretical basis for and existing evidence of how the modern international trade and investment system may facilitate corporate power in NCD prevention policymaking. The reviews identified that existing trade and health literature offers relatively limited empirical insights into the political economy dimensions of how international trade and investment liberalization shapes stakeholders' interests and priorities and power relations and dynamics in ways that affect NCD policy. Chapter Six presents the first of three empirical research papers included in this PhD that attempt to contribute to filling this identified gap. In this chapter I apply an integrated political economy and power analysis approach to understand how power relations and dynamics emerging as a result of the international trade and investment system, influences nutrition and alcohol regulatory development in a case study of South Africa. The analysis draws on 35 interviews with 36 key stakeholders and is supported by the conceptual framework developed in Chapter Four.

This paper has been submitted for publication to Social Science and Medicine and is currently under review by the editors. For purposes of this thesis, changes have been made to table and figure numbering and reference back to previous thesis chapters have been added where appropriate.

ABSTRACT

Background: While the implications of international trade rules and potential disputes for preventing public health policy action have been increasingly explored, few studies have adopted a more politically-informed approach. This paper applies an integrated political economy and power analysis approach to understand how power relations and dynamics, emerging as a result of the international trade and investment regime, influence nutrition and alcohol regulatory development in a case study of South Africa.

Methods: Thirty-six interviews with key stakeholders involved in nutrition, alcohol and/or trade/investment policymaking in South Africa were included. Interview transcripts and notes were imported into NVivo and analyzed using thematic analysis. A conceptual framework for analyzing power in health policymaking was used to guide the analysis.

Findings: Under the neoliberal paradigm that promotes trade liberalization and market extension, corporate power in nutrition and alcohol policymaking has been entrenched in South Africa via various mechanisms. These include via close relationships between economic policymakers and industry; institutional structures that codify industry involvement in all policy development but restrict health input in economic and trade policy decisions; limited stakeholder knowledge of the broader linkages between trade/investment and food/alcohol environments; high evidentiary requirements to prove public health policy effectiveness; both deliberate use of neoliberal frames/narratives as well as processes of socialization and internalization of neoliberal ideas/values shaping perceptions and policy preferences that ultimately generate policy norms prioritizing economic/trade over health objectives.

Conclusions: Exposing all forms and mechanisms of power in policymaking can expand our own ideational boundaries of what is required to promote transformative policy action. This work points to strategies for challenging corporate instrumental, structural and discursive power in nutrition and alcohol policymaking in the context of international trade and investment liberalization. Together these potentially offer a starting point for developing a comprehensive strategy to promote sustainable, transformative and coherent trans-sectoral policy action on unhealthy diets and alcohol-related harm.

1. INTRODUCTION

As alcohol and ultra-processed food consumption stagnates or declines in high-income countries (HICs), low- and middle-income country (LMIC) markets have been targeted for growth by transnational ultra-processed food (UPF) and alcohol corporations (1-6), with expansion into Africa an explicit element of the corporate strategy (6). These industries have been strong supporters of trade and investment liberalization in LMICs (7, 8), using it to reduce cost of production, improve efficiency and grow sales in these new and emerging markets. As such, international trade and investment liberalization has been linked to increased consumption of ultra-processed foods (UPFs) (including sugar sweetened beverages) (9-21) and alcohol (5, 21) and consumption is increasing at faster rates in LMICs than occurred previously in HICs (21). Given that exposure to and consumption of these products have significant cumulative health and social impacts throughout the life-course (22, 23), expansion of transnational UPF and alcohol corporations into LMICs is creating a major new global public health challenge.

As their attention turns to new and emerging markets, corporations are increasingly motivated to ensure favourable regulatory environments (usually with minimal regulation) in LMICs. Emerging research documents the various strategies adopted by food and alcohol companies to influence public health policy (4, 24-27). However, more structural drivers of nutrition and alcohol non-decisions in LMICs, including the international trade and investment system, remain under-explored empirically. In recent years, trade and health researchers have considered how international trade rules may promote health policy non-decisions. This includes through legal analyses of the potential for substantive and procedural aspects of trade and investment agreements to restrict policy space to mitigate the health impacts of unhealthy diets and harmful alcohol consumption (7, 28, 29).

However, only a few more recent empirical studies have adopted a political economy perspective focusing on key actors, their interests and institutional factors (30) to understand policy actor's strategic responses to trade and investment liberalization and how this may affect public health decision-making (31-35). Power theory is of different disciplinary roots, but overlaps and is complementary to the political economy approach that generally seeks to understand visible (and sometimes more hidden) power in policymaking (30). Power theory integrates both agency and structure and offers a conceptually richer basis for analysing power in health policymaking, moving beyond visible decision-making power, and drawing greater attention to hidden power (how political and economic structures can be used to control the policy agenda), but particularly invisible power- how the socialization and internalization of ideas, shape actors' interpretation of issues and the perceived appropriate solutions (30, 36, 37). Despite power analysis being increasingly recognised as essential to understanding public health policy processes (38-42), no trade and health policy studies, to my

knowledge, have explicitly analyzed how hidden and invisible forms of power generated or facilitated by trade and investment liberalization may drive public health policy non-decision-making.

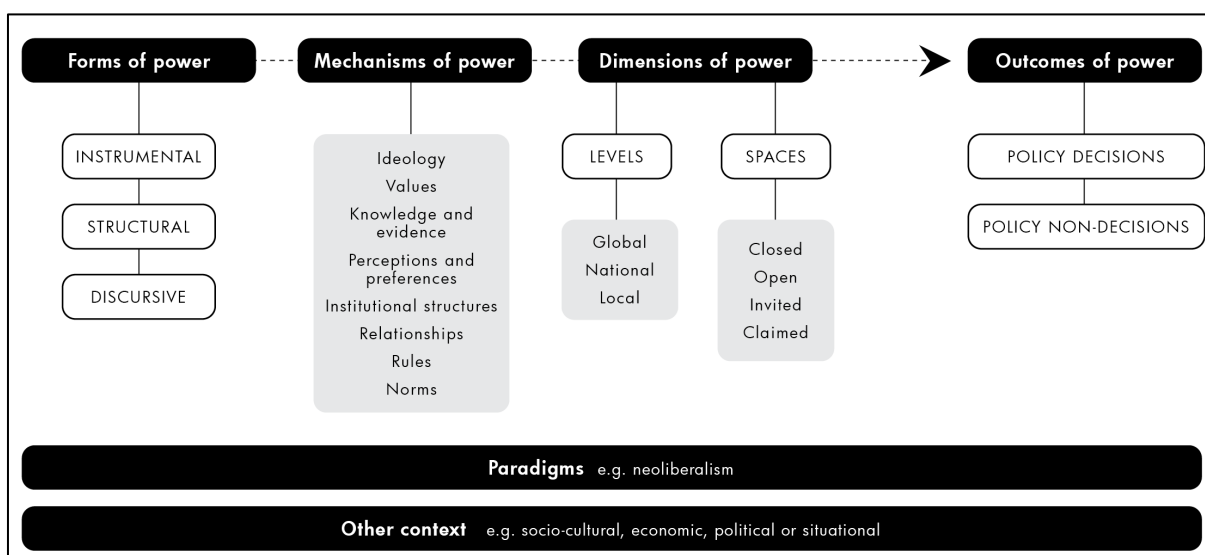
Exposing all forms of power- visible, hidden and invisible- active at the nexus of trade and health policymaking is essential for addressing barriers to more progressive nutrition and alcohol regulation and achieving greater trade and health policy coherence. This paper therefore applies an integrated political economy and power analysis approach to understand how power relations and dynamics emerging as a result of the international trade and investment regime, influences nutrition and alcohol regulatory development in a case study of South Africa. To do this, it draws on a framework developed in earlier work for analyzing power in public health policy processes (described below).

Ethical approval for this work was obtained from the London School of Hygiene and Tropical Medicine (28 August 2018) and the University of Cape Town (12 December 2018).

2. CONCEPTUAL FRAMEWORK

The conceptual framework for analysing power in public health policymaking (43) (Figure 6.1) can be used as a heuristic for understanding how different forms of power operate via various mechanisms, in different spaces and across levels to influence policy decisions.

Figure 6.1: Conceptual framework for analysing power in public health policymaking



The Framework includes three *forms* of power. Instrumental power (usually most visible) focuses on the direct influence different actors have over the voluntary decisions made by formal political decision-makers. Structural power (usually more hidden) includes agenda-setting power (36)- the ability to limit who is

included in decision-making spaces, whose interests are valued and the scope of alternatives for consideration (44). Discursive power (invisible) involves holding significant problems and potential solutions outside the minds of stakeholders, including of those who stand benefit from them (45). Discursive power usually results from the constant interplay between deliberate action and structural processes of socialization and internalization of accepted paradigms in societal and political values and policymaking norms.

Each *form* of power can be expressed via a number of different *mechanism* types and examples of these are provided in Milsom et al (2020) (45). *Dimensions* of power include the different *levels* –international, national or sub-national – where power resides or is contested. Dimensions of power also include different *spaces*, defined as formal or informal opportunities where actors can ‘potentially affect policies, discourses, decisions and relationships’ relevant to their interests (45). Spaces may be closed, invited, open or claimed by less powerful actors (45).

The *outcome* of power may be a *policy decision* taken by decision-makers to act (voluntary/involuntary and optimally/sub-optimally) (43). Alternatively, the outcome may be a *non-decision*- a voluntary decision not to act; an involuntary failure to act; or inaction due to an ideational boundaries issue (43). Certain *contexts* – political, economic, socio-cultural or situational – can inhibit or activate different mechanisms of power generating different outcomes (43). Overarching *paradigms* determine the overall structure of power in the policymaking system (43).

3. METHODS

The ‘case’ under investigation in this case study is recent or current nutrition and alcohol policy non-decisions in South Africa. Since there is complex interconnection but also key differences between nutrition and alcohol policy processes and the socio-political and economic context in which they arise (46), the case study approach is useful since it allows for investigation of these policy processes and exploration of similarities as well as any differences, within the context that is essential for explaining them (47).

South Africa was selected as a rich case study context due to its relatively open economy to trade; role as a strategic hub from which UPF and alcohol corporations can develop new markets across Africa (4); and status as a regional health policy leader such that corporations may have a particular interest in ensuring a favourable regulatory environment in South Africa to prevent regional/continental policy transfer.

3.1 Data collection

A semi-structured interview guide was developed to elicit an in-depth understanding of key actors' ideas, values, interests and positions in relation to health and trade objectives; perceptions of the international trade and investment regime influence on diet-related (DR) NCD and alcohol harm reduction relevant policy processes; and the strategic approaches adopted by stakeholders to achieve their desired trade/health objectives. The interview guide was tested with local policy experts within academia and government and adapted accordingly before finalizing. Final interview question guides are included in Appendix Three.

An initial stakeholder mapping of key stakeholders identified basis on their experience relating to food and alcohol policy issues with potential relevance to international trade or their involvement in trade/investment policy development was undertaken with the assistance of a relevant Department of Health (DH) policymaker. Key stakeholder identified in the mapping process were then invited to participate in an interview. Thereafter, participants were identified through snow-ball sampling.

In total 77 stakeholders were invited to participate in a one-hour semi-structured interview. At least two additional follow-up attempts were made to contact non-responders by emails and/or phone. In total 39 agreed to participate in an interview, 25 did not respond and 13 declined to be interviewed, often referring us to others. Table 6.1. presents a summary of the participants by stakeholder group.

Table 6.1: Summary of study participants

Stakeholder group	Key stakeholder invited to interview	Key stakeholder interviewed			Total interviewed	Total included in the analysis
		Nutrition	Alcohol	Cross-cutting		
Department of Health	17	7	1	3	11	10
Department. of Trade and Industry	14	0	2	6	8	7
National treasury	4	1	0	1	2	2
Department of Agriculture, Forestry and Fisheries	6	2	0	0	2	2
Department. of Social Development	1	0	1	0	1	1
Inter-governmental organizations, non-government organizations and civil society organizations	8	4	2	0	6	6
Multinational food and alcohol corporations (originating both from within and outside South Africa)	10	2	2	0	4	3
Academics	11	3	2	0	5	5
Health Attachés for South African Embassy in Geneva or Washington DC (current or past)	6	0	0	0	0	0
Total	77	19	10	10	39	36

Thirty-eight interviews were conducted with the 39 participants between April 2019 and February 2020 either in-person in Cape Town/Pretoria or via phone/teleconference. Verbal consent was obtained before all telephone interviews unless written consent had already been given. Written consent was obtained for all telephonic interviews except two on follow-up. The two stakeholders who failed to respond to repeated requests for written consent on follow-up after each interview were excluded from the analysis. Additionally, one stakeholder indicated on their written consent forms that they did not give consent for the information they provided to be included in research publications and were therefore also excluded from the analysis. Given the content of these interviews, excluding them did not alter the findings of the research in any substantive way. Ultimately 35 interviews with 36 stakeholders were included in the analysis. All government participants were chief or deputy directors within their respective departments with one deputy director general. Industry representatives were governance and regulatory experts, inter-governmental organization (IGO), non-governmental organization (NGO) and civil society organization (CSO) representatives had each been engaged in recent relevant nutrition or alcohol policy processes in South Africa.

All except two interviews were recorded where detailed notes were taken instead. Recorded interviews was later transcribed in full. Following each interview, the audio recordings and/or notes were reviewed to inform adaptations to questioning for subsequent participants and for assessing the need for further interviews.

Key policy documents were also reviewed including The National Development Plan 2030, The Industrial Policy Action Plan, the South African Trade Policy and Strategy Framework, The Strategy for the Prevention and Control of Obesity in South Africa 2015-2020, The Strategic Plan for the Prevention and Control of Non-Communicable Diseases 2013-17 and The National Policy on Food and Nutrition Security for the Republic of South Africa.

3.2 Analysis

Data was analysed using thematic analysis. This involved developing codes, initially deductively, based on inter-related themes derived from the conceptual framework (43). Additional codes were developed inductively during the analysis process. Transcriptions were coded in NVivo (version 12.6.0). Coded extracts organized according to main themes were then transferred into Word documents to identify patterns across key informant interviews. Results are reported according to the various mechanisms of power described in the conceptual framework (excluding *rules* since these are explored in detail in related work presented in Chapter Seven) and identified during the analysis as relevant to this case study. In practice there is considerable overlap and significant inter-dependence between many of the mechanisms presented.

4. RESULTS

4.1 Neoliberal paradigm and ideas

The neoliberal idea that free and open competitive markets in all areas of life will achieve economic growth and shared prosperity (48) has influenced governance and policy in most countries, although in different ways. From the 1990s in South Africa, neoliberalism took the form of trade liberalization, privatisation, state deregulation and corporate self-regulation (49). These processes were considered necessary by economic actors to address the urgent problems of poverty and unemployment, while NCDs are perceived as longer-term challenges. As one trade policymaker commented:

'we need to grow our economy, we need to expand our exports and that's why we're also entering into free trade agreements'. [DT11]

Trade and agricultural policy actors reflected that neoliberal policy reform has increased the influence of global markets on the agro-processing system (including food and alcohol), shaping actors' interests and goals towards a much greater focus on expanding the production of value-added products (including processed foods and alcoholic beverages) since these provide the greatest financial return on the global market. As one health stakeholder commented:

'it is not only about creating that particular industry for local market but also for the regional, continental and global markets because then it will trickle down to ensuring that our industries are operational in South Africa.' [H1]

For alcohol and food corporations neoliberal reform including trade and investment liberalization and the country's and regional and global connectedness, have promoted their investment into South Africa as a production hub for accessing new markets across Africa (4). Due to increased competition within South Africa and the opportunity for expansion across borders there has also been multi-nationalization of South African companies, especially regionally (50, 51). As such, food and alcohol industries' particular interest in exercising power over South Africa's regulatory environment is motivated not only by a desire to profit within South Africa and open new markets, but also to prevent policy transfer across Africa, since South Africa was considered a regional and global policy leader as one health stakeholder commented:

'their interest is based on the fact that if they lose their the fight with South Africa, then they will lose the war with the rest of the continent' [H1]

These shifts in actor goals and interests that have emerged under an overarching neoliberal paradigm have facilitated corporate and economic actors to exercise different forms of power via various mechanisms to influence South Africa's regulatory environment. The dominant neoliberal paradigm has also generated power within nutrition and alcohol policy spaces via deterministic mechanisms of socialization and

internalization of neoliberal ideas/values ultimately shaping perceptions and policy preferences and norms. These mechanisms are explored below.

4.2 Relationships

South Africa's UPF and alcohol industries are dominated by a small number of large multinational corporations (originating both from within and outside South Africa) (52). These corporations have established highly organized networks and umbrella organizations including, for example, the South African Liquor Brand Owners Association (SALBA). There has also been an increase in foreign investment in these sectors. For example Illovo sugar company is now a subsidiary of Associated British Foods (one of the largest sugar companies globally) and AB InBev, the world's largest beer brewing company bought out its leading rival SABMiller, originally a South African company, in the third largest corporate merger in history (49). Alcohol advocates also reported increased common ownership across industries. Combined these factors have resulted in the consolidation of corporate lobbying capacity, expanded further by inter-industry cooperation on relevant policy issues.

Concurrently, to achieve priority targets of economic growth and job creation, economic policymakers are focused on supporting growth in the already dominant agro-processing sector to produce exportable value-added products. Food manufacturers Pioneer Foods and Tiger Brands for example, already export globally to 80 and 33 countries respectively (49). With economic policymakers' own performance measured against job creation targets, they are heavily incentivized to grant productively powerful, export commodity-producing corporations –both domestically-owned and multinational – with significant levels of access to and influence within economic/trade decision-making spaces. This indicates industry likely enjoys a relatively high degree of instrumental power, but possibly also structural power, although this is inherently more difficult to capture. As one public health advocate reflected:

'Our current government has a very close relationship with business basically ... because we have a high unemployment problem. They think the only people that can help them solve that is business, and business comes with all of these other neoliberal policies including... international trade agreements.' [AA2]

A number of respondents from within the Department of Trade and Industry (DTI) confirmed that they actively cultivated close relationships with industry, encouraged engagement regarding any issues of concern and would go 'an extra mile' to get industry's input during regulatory development. In contrast, an alcohol harm reduction CSO representative commented, *'health ministries are lower down in the hierarchy ...and therefore their voice has got less sway [in economic/trade policy].'* [AA1]

Specifically, in relation to trade agreement negotiating processes non-South African multi-national companies reported to feedback on South African trade policy via their home country's governments while a domestic alcohol industry actor reportedly considered themselves part of the negotiating team. However, their influence over South Africa's trade negotiating position was dependent on their contribution to job creation in South Africa and the market potential in the negotiating partner's country. For example, one alcohol industry actor commented that while they would like a trade deal with China, the government would not seek such a deal since it would threaten the textile industry which employs more people.

Respondents also commented that high-level government officials had close personal financial interests in the alcohol industry which was considered to be a uniquely powerful driver of alcohol policy non-decisions. One academic reported that in relation to the Department of Health's (DH's) proposed ban on marketing of alcoholic beverages, an industry representative remarked that public health advocates were *'not going to win because we can take these guys [DTI officials] out and influence them in other ways'*. [RA1]

The food and alcohol industry were effective in capitalizing on their perceived legitimacy, using various strategies to foster closer relationships with government to expand their opportunities to exercise both instrumental and structural power. These strategies include sponsoring/joining institutions that influence government policy; use of a 'revolving door' between high-level government and industry; and engaging in various private-public-partnerships.

In contrast, there was a perceived lack of robust civil society mobilization to challenge industry structural power and claim influence particularly over the nutrition/DR NCD policy agenda. However, in relation to specific policy processes, including the tax on sugar sweetened beverages, nutrition advocacy groups have built extensive networks of both local and global actors, including NGOs, grass roots organization, academics, communication experts, campaigners and other governments to counter industry power by claiming public and political spaces of influence and using evidence, strategic framing and narratives, and intensive targeted communication and education.

As the regional production hub for alcohol and processed foods, policies adopted by South Africa can shape the regional food and alcohol environment (53) with other African countries, particularly within the SADC passively benefiting from South African regulation in these areas. It has therefore been in these governments' interest to encourage nutrition and alcohol regulation in South Africa. For example, in relation to the ban on marketing of breast milk substitutes one health stakeholder pointed out:

'... other countries were pushing South Africa to have a regulation, because Botswana, Swaziland, and Lesotho...they said if South Africa will have a strong regulation it will actually assist them because they receive the formula from South Africa.' [H4]

4.3 Institutional structures

The South African Constitution obligates consultation with all interested stakeholders, including the private sector, during all policy development processes unless international obligations determine otherwise. Following an era in which non-whites were largely excluded from decision-making processes, this obligation was considered by most respondents as paramount to the democratic process. A trade policymaker commented:

'All stakeholders have equal opportunities. If anyone from an NGO wants to meet with me... they just write an email and we have to engage with them. It's the same as an executive of a huge multinational corporation.' [DTI2]

While engagement with industry prolonged health policy processes, some health policymakers considered such engagement important to ensure a proposed regulation was technically feasible; for securing buy-in to increase likelihood of policy adoption; to increase implementation success; and due to a belief that having created the problem industry must be part of the solution. However, nutrition policymakers emphasised that the DH's mandate is health protection and promotion which directly conflicted with industry's profit incentive and therefore industry instrumental power over policy processes under the DH's mandate was limited.

However, a number of respondents identified that in part because of value-added growth objectives there was a general orientation of domestic institutional structures and processes giving greater structural and instrumental power to the Department of Trade and Industry (DTI) and industry relative to the DH, particularly in relation to alcohol policy. As one trade policymaker pointed out:

'we are involved in the alcohol regulation and food stuffs regulation because we are a huge exporter and importer and must be sure that domestic regulations specifically does not create unnecessary trade barriers but just address the objectives you want to achieve.' [DTI1]

Alcohol regulation is coordinated via an Inter-Ministerial Committee on Combating Alcohol and Substance Abuse with representation from all relevant departments including the DH, DTI, Department of Agriculture Forestry and Fisheries (DAFF) and the Department of Social Development (DSD). This mechanism for collaboration was seen by some economic actors to have elevated public health alongside trade and economic concerns relating to alcohol regulation. However, others considered existing power relations had been reproduced in this space with economic/trade interests dominating the agenda and policy decisions.

Responsibility for both alcohol and nutrition policy was divided between a number of government departments including the DH, DAFF the DTI and the DSD. A number of respondents perceived this division

of control between departments with conflicting mandates and objectives limited both the alcohol and nutrition policy agendas to primarily demand-side solutions. The DAFF was described as prioritising economic gain and export potential, and the DTI's mandate was described narrowly by one academic as being to *'promote trade and industry'* [RN1] and to *'do what's good for business'* [RN1]. For alcohol regulation, only alcohol labelling was under the mandate of the DH with all other alcohol regulation coordinated by other departments with DH consultation as required.

Existing formal governmental structures tended to limit the DH's power to advance health interests on economic/trade policy agendas or in decision-making. The government cluster system was established to foster an integrated approach to governance by increasing inter-departmental co-ordination on cross-cutting issues and ensuring alignment of government priorities before they are taken to Cabinet. The DH is however not included in the Economic Sectors and Employment or the International Cooperation, Trade and Security Clusters that have input on all trade and investment policy. The DH is also not included in the National Economic Development and Labour Council (NEDLAC) which provides a particularly important formal vehicle for business to negotiate with government and labour on development, financial, trade and industrial policy. As one CSO representative commented it *'is a very formal channel of access where they [alcohol and food corporations] are able to leverage and negotiate'* [AA2] and all relevant policy must be 'approved' by NEDLAC before advancing. Although NEDLAC is officially inclusive of community organizations, in practice it was not perceived by civil society actors as an accessible platform.

Further, the DH is not formally involved in South Africa's trade agreement negotiating processes since public health is not considered a priority. One DAFF policymaker stated for example:

'from where I'm sitting with bilateral and multi-lateral trade agreements, nutritional security doesn't really play a major role' [DAF1].

Any consultation with health actors was on an ad hoc basis. A health stakeholder further explained their exclusion:

it is only towards the end of discussions when people realized that there is a need to involve people from public health in the negotiations of various instruments... but right from the beginning of the negotiations and discussions, public health is not seen as a priority.' [H1]

Other institutional factors limiting health actors' engagement in trade and investment issues related to the lack of capacity within the DH to analyze the public health implications of trade and investment policy and engage effectively in related discussions. As one health stakeholder pointed out:

'public health advocates have never been trained on diplomacy, on politics, on trade and investment. So, if they are participating in these particular forums, they do not seem to have a good conceptual understanding of trade and investment dynamics'. [H1]

4.4 Knowledge and Evidence

Limited knowledge, particularly amongst trade policymakers, of the potential linkages between trade/investment and food/alcohol environments, outcomes and policy was a powerful mechanism of DH exclusion from institutional structures and spaces where trade and investment policy agenda is set and policy decisions are made.

Trade policymakers generally understood existing safeguards within the Sanitary and Phytosanitary Agreement (SPS) and Technical Barriers to Trade Agreement (TBT) to provide sufficient protection for regulating in the interest of public health- if it was a bona fide health regulation grounded in evidence, then trade obligations would not obstruct it. When asked if the General Agreement on Tariffs and Trade was relevant to alcohol-related harm one trade policymaker commented:

'That particular agreement is not relevant. It's dealing mostly with trade in goods. It's dealing with wine and spirits and all of that so it's not really a domain of public health' [DT12].

However, one high level trade official did recognise that *'the way the agreements are constructed, the trade considerations are given priority [over health]'*. [DT13]

Amongst health actors, there was the general perception that the majority of alcohol was South African produced, and therefore international trade policy was not relevant for alcohol harm reduction. Policymakers within the DH considered trade and investment liberalization was likely to have increased the availability of inexpensive highly processed foods. One health stakeholder reflected on this as a lack of coherence between investment policy and health objectives:

'there is a disjuncture between the economic policies and... what health wants to achieve... with the obesity that we have we should be reaching a stage when we do not allow introduction of certain companies in the country because they are adding more to the existing burden... we don't say no to anything.' [H2]

Both trade and health policymakers identified trade policy as primarily relevant to isolated demand-side health policy areas including front-of-package food labelling and alcohol health warning labelling. Limited recognition or prioritization of the broader linkages between trade/investment and health meant health and trade policymakers had limited expectation to coordinate or cooperate over trade and investment strategy or decisions. This reflected the fact that goals to align trade, agriculture and health policies were not explicitly

included in the Strategic Plan for the Prevention and Management of NCDs (2013-2017), the Strategy on the Prevention and Control of Obesity (2015-2020) or the National Policy on Food and Nutrition Security.

The high standard of evidence to prove public health policy effectiveness demanded by industry and economic policymakers in South Africa, but also institutionalized through WTO rules, functioned as a mechanism of both industry structural (agenda-setting) and instrumental (decision-making) power. This was perceived as a positive influence of industry by one health policymaker. Health policymakers reported evidence as critical, although not sufficient, for ensuring their policy proposals could withstand industry scrutiny and any potential WTO challenges.

There was also indication that an evidence-based health policymaking norm had been internalized by policymakers and a lack of evidence was cited as a key driver of policy non-decisions. For example, when asked why a proposed front of package nutrition labelling regulation remained voluntary and not mandatory, a health official stated: *'Because we didn't have evidence and it's not in Codex yet'* [DHN3]. As such, deliberate evidence-related strategies used by industry to prevent policy action (e.g., manufacturing doubt) appeared to not always be required, instead the evidence-based policy norm itself limited the policy agenda.

The requirement for and impact of evidence varied for different policy areas reflecting the complexity of mechanisms at play. A lack of definitive evidence of policy effectiveness was not considered a barrier to tobacco standardised packaging which had support from both health and economic policymakers. In contrast, despite clear evidence of the health impacts and economic cost of alcohol, the DTI had not supported the DH's Draft Control of Marketing of Alcoholic Beverages Bill proposing to ban alcohol sponsorship and marketing and restrict advertising and the protracted delays in adoption of the 2017 Draft Liquor Amendment Bill that proposes, among other things, increasing the drinking age to 21 and banning alcohol trade within 100 metres of schools and churches.

The evidence of the harmful effects of sugary processed foods was not considered by the DTI to indicate serious enough harm to warrant obstructing free trade. One trade policymaker reflected:

'we know there is a health risk [of sugar] but used moderately there is not really a high risk. So, it depends on the risk of a product, you cannot... remove it from your market for health purposes unless there is overwhelming scientific evidence of the product's risks.'[DTI1]

Power was also constituted via different forms of evidence with economic impact assessments often carrying the most weight. In 2015 the Socio-economic Impact Assessments (SEIA) System was introduced to address concerns that the full costs, were not always considered during policy development (54). For public health policies SEIA must be used to consider the policy's effect on national priorities including economic growth,

investment, employment creation and equity (54). A number of health policymakers reported the SEIA had made it increasingly challenging to get some regulations approved, one commented for example:

'The [impact on] business, that's what then we really have to look at; before we never used to look at what will be the impact on other issues besides health, part of that is trade, or investment or economic benefits.'[DHN2]

Others reflected however, that if done properly cost analyses (and impact mitigation) can promote health policy approval by making explicit how the economic cost of unhealthy diets and alcohol-related harm can outweigh industry's economic contributions.

Additionally, health advocates reflected that the same rigorous evidential standard applied to health regulation is not also applied to economic decision-making. One academic for example commented that economic decisions were often based on flawed modelling or ideologically-based assumptions about 'what works' to reduce poverty.

The DH's very limited research budget meant the barrier to policy adoption created by high evidential requirements was often difficult to overcome, leading to reliance on industry-influenced international standards and guidelines to set the policy agenda and justify policy proposals. The NCD Strategic Plan for example reflects WHO 'best buy' recommendations for preventing diet-related NCDs. However, policymakers were aware that in practice this meant industry's effectiveness in influencing public health standards and guidelines at the international level translated into significant structural power at the national level.

4.5 Perception and preference-shaping

Health advocates identified a number of factors contributing to the broad internalization of neoliberal ideas which tended to drive the individualization and medicalization of health issues in general political discourse. These include the political influence of international financial organizations particularly during the 1990s; neo-liberalization of economic education; support for and dissemination of neoliberal ideas, values and logic by the political and business 'elite'; and the delegitimization of alternatives. Combined, these processes were thought to not only help keep system-level solutions off the agenda (structural power), but possibly also outside the minds of decision-makers (discursive power).

Frames and narratives often resonating with neoliberal ideas and values were also used by industry in relation to specific policy proposals. For example, the infant formula industry used individual choice and freedom from government interference to oppose the ban on marketing of infant formula as one IGO representative described:

'[industry] arguments were really about [the regulation] restricting women's access and...almost becoming a nanny state where women can't make decisions for themselves.' [ML1].

The alcohol industry advanced the narrative that alcohol-related harm is limited to a minority of the population calling for targeted harm reduction interventions and the promotion of moderate and responsible drinking without impinging on the individual rights and freedoms of all citizens.

Industry also widely use economic framing to promote their interests relating to policy decisions. For example, an alcohol industry representative explained:

'when we engage with government, we talk about our contribution to GDP, our contribution to employment...we frame it in those terms...also in terms of the foreign exchange and improving our trade balance.' [AI1]

To frame themselves as committed to job creation and growth in South Africa, industry players attempt to present themselves as truly South African companies, not multi-nationals or overseas owned (despite even most domestic companies having large minority foreign ownership).

Industry also attempts to frame themselves as experts in nutrition and alcohol harm reduction and as 'part of the solution', including by rebranding themselves as health and socially conscious companies; claiming to be 'healthy by association' (e.g., funding nutrition conferences); partnering on and funding social development projects; and promoting themselves as proactive self-regulators. Further, industry frame themselves as contributing to the economic survival of the poor, keeping public support for regulation low. As one alcohol harm reduction advocate described:

'They [workers] have no financial resources to buy any other product, but... the alcohol industry... capitalize on their desperation by giving them the product upfront free and they only pay for it after they've sold it, or they give them the fridge for free, as long as they only sell alcohol. Coca-Cola does the same.' [AA1]

Health policymakers reported increasingly using economic framings of nutrition and alcohol-related harm as the most effective strategy for advancing proposed regulation. Although health policymakers recognise the importance of healthy food environments to promote healthy diets, framing nutrition as a food system problem requiring a trans-sectoral policy response did not dominate. One academic commented for example:

'the NCD stuff is all framed around individual choice... the NCD stuff coming out from the DH does... overstress the lifestyle elements.' [RN2]

While advocacy organizations used targeted framing for different policy actors, they also adopted economic framing when communicating with government as one CSO representative commented:

'when you speak to parliamentarians, these are the people who care about our economy. So, you need to speak about the numbers' (AN1).

Processes of socialization and internalization of the accepted neoliberal paradigm, coupled with limited knowledge of the linkages between trade and health, appear to have influenced the interpretation of health issues by economic policymakers. These actors tended to emphasize unhealthy diets and alcohol-related harm as problems of individual choice, not system outcomes, and interpreted food and alcohol primarily as economic commodities. For example, the increase in importation of both cheap sugar from powerful trading partners as well as highly processed foods was perceived as an economic threat, not a health concern. As one trade policymaker commented:

'we have been under threat from imports, your biscuits, confectionaries, those kind of products. There is a huge threat of imports [to our local producers]...it's always been around the economic impact, especially the impact on the sugar industry, the growers themselves... so that's why the DTI has looked at how they can diversify.' [DTI1]

It was only very recently that the DH had managed to shift the DTI's perception towards alcohol being *'a public health problem requiring a public health response'* [H4]. However, trade policymakers still tended to understand alcohol as problem of abuse by a limited group of individuals, not a wider system problem.

It's within this interpretive context that the National Development Plan 2030 (NDP) and Trade Policy and Strategic Framework include objectives to increase investment, productivity and employment in the agro-processing sector (of which food and beverages are the two largest sub-divisions) and to open export markets for value-added processed products (including processed food and alcoholic beverages) (29, 55, 56). For example, a trade policymaker reported:

'one of our programs is to add more value to sugar... all the products under the agricultural sector, commodities where you can add value to, that is very important for us and there are support programmes to attract more investment and to increase manufacturing.' [DTI1]

While reducing poverty and increasingly employment have positive 'spill-over' effects on nutrition (29) and alcohol harm-reduction, health actors were concerned that the strategic economic approach developed to achieve this did not consider the health implications and one trade policymaker confirmed health had not been a priority. Further, this approach is in direct tension with both the Strategic Plan for the Prevention and Management of NCDs (2013-2017) and Strategy for the Prevention and Control of Obesity (2015-2020) that include aims of taking a multi-sectoral approach to address NCDs and obesity including by ensuring the

availability and accessibility of healthy food choices (57, 58). There is currently no strategic plan on preventing alcohol-related harm.

Nutrition is a key priority in the NDP, however the focus is on direct interventions for maternal and child undernutrition with no mention of food supply interventions (29, 55). Similarly, reducing alcohol-related harm is included as a health priority but the focus is on individual-level health sector interventions for example, alcohol abuse programs (55) and health warning labels. A number of health actors recognized that the goal of value-added economic growth incentivized government to limit public health regulations so as not to obstruct industry profit-making activities. For example, one academic also engaged in health advocacy commented:

'there's a definite clash with our macro-economic policy which is a neoliberal one, which says that we should give business the right to do whatever they want to do without any restriction, irrespective of what impact it might have on livelihood or health.' [RN1]

The economic goal of expanding processed food production was associated with a dominant focus on food not nutrition security. Although the National Policy on Food and Nutrition Security (2014) commits the government to ensuring 'the availability, accessibility and affordability of safe and nutritious food' for all South Africans (59), the policy primarily focuses on using food supply policy to achieve food security, including through neoliberal market strategies as one DAFF policymaker noted:

'we have a very open and transparent market and that is how we try to solve the food security challenge.' [DAF1]

Another food researcher commented that particularly among economic policymakers, there was '*the belief that the system works*' [RN1] as long as the food system was supplying food, regardless of its nutritional quality. This productivist approach may contribute to holding nutrition outside the ideational boundaries of economic/trade policymakers. As one DAFF policymaker commented:

'in any related [trade] negotiations South Africa's nutrition security goals are not really considered, economic concerns are the primary factor considered.' [DAF1]

4.6 Norms

The dominant neoliberal narrative that value-added and export-driven economic growth is critical for realizing shared prosperity in South Africa had been internalized by trade and agriculture policymakers and was expressed in policymaking norms that prioritize economic/trade over health objectives. As one academic commented: '*Things will only happen if they don't impact job creation and... economic growth.*' [RN1]

In relation to nutrition policy, a DAFF policymaker further elaborated:

'DAFF is not so much concerned about dietary diversity. DAFF is in the business of making money. So they look at the commodities that gives them some return... if you invest you want to have a return on capital and that... is easier achievable if you're exporting your products.' [DAF2]

Given the evidence of serious health impacts of alcohol, policymakers within the DTI described balancing health and economic/trade objectives in policymaking:

'government has to strike a balance... we don't discount or underestimate the important role in that industry and international investors play. They're fundamental to growing our economy, they're fundamental to employing our people so of course we do welcome the investment and we do want to ensure that our environment is conducive to that but... we also have to balance that with public interest' [DTI2]

However, in practice the failure to adopt key alcohol regulations previously described, indicate economic concerns remain the priority.

DH policymakers reported that the economic costs of nutrition and alcohol regulations to business and trading partners was a necessary consideration in policy development, but they strongly affirmed industry interests were not prioritized in policy decisions under their mandate. Balancing economic and health objectives was however evident in a number of nutrition policy decisions. For example, a proposed ban on marketing of unhealthy foods to children under 12 and the use of celebrity endorsements and promotions to market unhealthy food to children up to 18 was gazetted in 2014 but not progressed. The 2015-2020 Strategy for Obesity only includes strengthening voluntary advertising pledges.

South Africa's trade obligations also drove the norm of balancing health with economic objectives as, for example, one health stakeholder commented:

'I think the DH tends to stay quite strong on these things [nutrition and alcohol regulations]. But at the same time, doesn't want to go against agreements that have been reached by the DTI. So ...it's trying to find compromises.' [H3]

Major departures from these described policy norms have been observed in relation to problems with immediate, direct and severe health impacts. The AIDS epidemic for example triggered South Africa's commitment to ensuring obligations within the WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) did not constrain access to essential medicines. Although it is important to note, pharmaceuticals are not a major South African export. Similarly, for tobacco, a shift in public acceptance had forced a political normative shift towards a very proactive approach to tobacco control despite the significant economic contribution of the tobacco industry. As one trade policymaker stated:

'We acknowledge that they play a major role in the agricultural sector, they're huge investors ... they still employ quite a lot of people ... but the policy has always been that – if these products are no longer acceptable in the public consumption and it becomes a health issue – that you motivate these farmers to invest in other crops.' [DTI1]

5. DISCUSSION

Applying an integrated political economy and power analysis approach, this research identifies that, via various inter-connected mechanisms, instrumental, discursive and probably structural power (although this was the most difficult to identify) are active at the intersection of trade and health policy in South Africa. These different forms of power contribute to nutrition and alcohol policy non-decisions and broad incoherence between trade/economic policy and nutrition and alcohol harm reduction objectives. Surfacing these forms and mechanisms of power also provides an opportunity to identify potential countervailing strategies for health actors to challenge them (45).

A strict evidence-based approach to nutrition and alcohol policy, driven by industry pressure and WTO rules, was a powerful driver of public health policy non-decisions. One potential way forward may be to advocate for an 'evidence-informed and practice-based' approach to nutrition and alcohol policy decisions that promotes active policy experimentation and evaluation rather than inaction (60, 61). Increasing public health research funding will also be important. One option could be to hypothecate part of the sugar-sweetened beverage tax for this purpose. Securing major sustained funding increases however, will likely only occur once perceptions shift. Further, the norm of placing the burden of proving the harmful effects of products on public health actors instead of industry being required to prove they are not harmful, should be challenged.

Generally limited knowledge or evidence of the links between trade policy and dietary change or alcohol-related outcomes meant these health issues were not perceived as particularly relevant to economic/trade policy. Strengthening the evidence base linking unhealthy diets and harmful alcohol consumption with trade and investment liberalization and communicating it effectively will be crucial (32). Building nutrition and alcohol control advocacy group capacity and engagement with trade policy issues will be important to raise political and public awareness (28, 32, 62). Capacity building across government departments on trade and health issues will be critical to develop a shared understanding of the linkages between trade and investment strategies/decisions and health.

Existing institutional structures tend to expand corporate structural and instrumental power and marginalise or exclude health policymakers (and civil society) from trade/economic policy spaces. Industry access to

these spaces may be limited through legally binding international health agreements. Establishing or leveraging existing mechanisms for cross-departmental collaboration and coordination will be important to ensure health actors have access to these policy spaces. However, a 'health in all policies' approach that explicitly mandates all government departments to ensure systematic consideration of health (including nutrition and alcohol harm reduction objectives) when developing their goals, strategies and policies will be critical. Importantly, this mandate will also need to be replicated in trade bodies at both the regional and global level (53). Thow et al for example propose embedding a framework for NCD prevention based on the WHO Global Action Plan within the mandate of regional trade body such as the SADC (53).

The perceived contribution of private industry to economic growth gives industry significant access to and influence within trade and health decision-making spaces (33). Reducing processed food and alcohol industry influence requires challenging the invisible power of internalized economic policymaking norm of prioritizing value-added export-driven economic growth over health as a development imperative requires challenging existing perceptions. Strategies will likely include making industry economic contribution via sales of harmful products both publicly and politically unacceptable as been achieved for tobacco in many countries including in South Africa, although issue complexity makes this a formidable challenge in the areas of nutrition and alcohol harm reduction. Other transferable lessons from tobacco control include, for example, working with communities and the large periphery of small-scale retailers to understand how food and alcohol corporations' behaviour is both economically and health harmful and ensuring healthy alternative employment is available.

Use of frames and narratives is another key strategy to challenge the invisible power of internalized economic policy norms. This includes more actively advancing socio-ecological or system-level (as opposed to individual) framing of product consumption and the related health impacts. Using 'governance for health' framing embraces policy areas/actors (e.g., trade, agriculture and social development) not explicitly health oriented but that create the system drivers of unhealthy diets and alcohol-related harm which may help these actors 'see themselves' as part of the solution. Additionally, using frames that highlight the direct and severe impacts of prioritizing economic/trade objectives over health (e.g., reframing NCDs as an epidemic) and human-rights and child protection framing may be helpful. Exposing the interests and values behind industry framing can also be useful. The Covid-19 pandemic has provided a window of opportunity to shift existing policy norms with previously inconceivable policy being adopted including an alcohol ban in South Africa during lockdown (63).

Neoliberalism has shaped the interests that ultimately underpin nearly all the mechanisms of power identified in this research contributing to nutrition and alcohol policy non-decisions and weak policy coherence for health. This supports other findings that neoliberal ideas may constrain policy action for NCDs

(32, 48, 64-66). This work indicates therefore, that one of the most important actions for public health advocates and civil society groups must be to challenge neoliberalism by repeatedly exposing its flaws and effectively communicating viable alternatives.

6. LIMITATIONS

Despite significant effort to recruit high-level political actors, participation by this stakeholder group may have limited our access to data on the political dimension of NCD prevention policymaking. That said, access to these policy actors does not necessarily mean they would have disclosed relevant information due to both formal and informal confidentiality rules. The analysis may also be restricted due to nondisclosure of relevant information by interviewed stakeholders. Finally, the single case study design means generalizability of the research findings must be undertaken with caution.

7. CONCLUSIONS

This research contributes an early example of applying an integrated political economy and power heuristic to empirical health policy process analysis. A key value of this approach is that by exposing all forms of power in policymaking, our own ideational boundaries of what is required to promote healthy policymaking are expanded. This work points to strategies for challenging mechanisms of power in nutrition and alcohol policymaking that together offer a starting point for developing a comprehensive strategy to promote coherent and transformative policy action on unhealthy diets and alcohol-related harm.

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Student ID Number	1602951	Title	Dr
First Name(s)	Penelope		
Surname/Family Name	Milsom		
Thesis Title	International trade and investment liberalization, corporate power and non-communicable disease prevention policy: A case study of nutrition and alcohol policy non-decisions in South Africa		
Primary Supervisor	Helen Walls		

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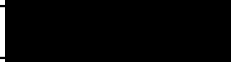
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SECTION E

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Date	23 August 2021

CHAPTER SEVEN: DO INTERNATIONAL TRADE AND INVESTMENT AGREEMENTS GENERATE REGULATORY CHILL IN PUBLIC HEALTH POLICYMAKING? A CASE STUDY OF NUTRITION AND ALCOHOL POLICY IN SOUTH AFRICA

CHAPTER OVERVIEW

In Chapter Six I explored how the international trade and investment system facilitates different forms and mechanisms of corporate power in nutrition and alcohol policymaking in South Africa. In this chapter, again drawing on the interviews I conducted with 36 key stakeholders, I specifically focus on understanding to what extent trade agreement or investment treaty rules are used by corporations as a tool to prevent nutrition and alcohol policy action in South Africa; to what extent, why and how the threat of an investor-state dispute as compared to a state-state WTO dispute contributes to public health regulatory chill; which types of regulatory chill may be occurring; and to identify any contextual factors, particularly relevant for LMICs, that may be either protective or increase vulnerability to regulatory chill.

This paper has been submitted for publication in *Globalization and Health*. For purposes of this thesis, changes have been made to table and figure numbering and reference back to previous thesis chapters have been added where appropriate.

ABSTRACT

Background: Trade and health scholars have raised concern that through perceived, threatened or active use of the investor-state dispute settlement (ISDS) mechanism, transnational health harmful commodity corporations (THCCs) may effectively generate public health ‘regulatory chill’ – the delaying, compromising, or abandoning of bone fide regulation in the public interest due to a real or perceived threat of an investor-state dispute. The purpose of this study was to contribute to the very limited evidence base of ISDS-related regulatory chill using an in-depth case study analysis of nutrition and alcohol policy in South Africa.

Methods: Thirty-eight semi-structured interviews were conducted with 39 key stakeholders involved in nutrition, alcohol and/or trade/investment policymaking in South Africa. Interview transcripts and notes were imported into NVivo and analyzed using thematic analysis. Schram et al’s theory on three forms of regulatory chill (anticipatory, response and precedential) was used to guide the analysis. Evidence on each form of regulatory chill is reported, as well as specific contextual factors that may influence regulatory chill or trade-related policy non-decisions.

Findings: Trade obligations were found to generate a significantly greater anticipatory-type chilling effect on nutrition and alcohol regulation than South Africa’s investment treaty obligations. Response chill was reported to have occurred in relation to South Africa’s proposed tobacco plain packaging regulation while awaiting the outcome of both Australia’s ISDS and World Trade organization (WTO) cases. No cases were reported of THCCs threatening an investor-state dispute over nutrition or food regulations, but there were reported cases of THCCs using arguments related to South Africa’s trade obligations to oppose policy action in these areas. No evidence of nutrition or alcohol policy precedential chill were identified. Factors affecting the risk of policy chill include legitimacy and perceived bias of the dispute system, costs involved in pursuing a regulation/defending a dispute and capacity to pay, social acceptability of the industry, a product’s perceived risk to health and confidence in a successful dispute outcome e.g. through cross-border policy learning.

Conclusions: Findings indicate that currently, South Africa’s trade obligations have a more prominent role in inhibiting nutrition and alcohol action than investment treaty-related concerns. However, given the potential for wider use of the ISDS mechanism by THCCs in the future, strategies to protect public health policy space in the context of both international trade and investment treaty and dispute settlement contexts remain important.

1. INTRODUCTION

An equitable approach to addressing the growing burden of non-communicable diseases (NCDs) and their risk factors in low- and middle-income countries (LMICs) requires comprehensive population-level government interventions (1, 2). Ultra-processed foods and hazardous alcohol use are two key areas for such regulation. Despite increased attention to these issues globally, political action to tackle ultra-processed foods and alcohol environments has been limited. Such inaction can be described as policy ‘non-decision making’, encompassing deliberate decisions not to act, involuntary failures to act as well as unconscious inaction (3) by policy-makers. As transnational ultra-processed food and alcohol companies (referred to as transnational health harmful commodity corporations or THCCs hereafter) increasingly turn their attention to LMIC markets for growth and profit (4-8), they are likely to intensify their efforts to promote and support non-decisions concerning nutrition and alcohol policy in these countries.

Various industry tactics to promote nutrition and alcohol policy non-decisions have been documented globally (7, 9-12). However, the potential for THCCs to engage in ‘venue-shifting’, a strategy to claim alternative spaces of influence over policy decisions by shifting decision-making power from democratically elected governments to other fora, including international trade and investment dispute settlement venues, where their interests may be more likely to be prioritized (13, 14), has been relatively less well explored empirically. Although THCCs cannot themselves initiate a complaint at the WTO they can encourage and support states to do so on their behalf (15). However, the ISDS mechanism, included in over 2000 bilateral investment treaties (BITs) currently in force (16) as well as a number of important regional trade and investment agreements (TIAs), allows THCCs to directly bring claims for financial compensation against states in private international tribunals when they assess state action has compromised their investment (17). The most directly public health relevant investor-state disputes to date have been the cases of Philip Morris Asia vs Australia and Phillip Morris International vs Uruguay for their plain-packaging and graphic warning tobacco control policies, respectively (18, 19). In both cases arbitrators ruled in favour of the state, although in Australia this was on jurisdictional, not substantive grounds. Notably however, given the lack of precedent in investment arbitration, tobacco companies may continue to threaten or pursue investment arbitration for similar regulations elsewhere (20).

Trade and health scholars have raised concern that through active or threatened venue-shifting to investor-state, THCCs may effectively generate public health ‘regulatory chill’ (21, 22), a specific kind of policy non-decision, defined by Schram et al. (2018) as delaying, compromising, or abandoning the formulation or adoption of bone fide regulation in the public interest due to a real or perceived threat of investor-state dispute (21). The high cost of engaging in such a dispute, award of financial compensation to investors, vagueness of foreign investment protection provisions, unpredictability of outcome, lack of appeal

mechanism and potential conflict of interest of arbitrators, means a real or perceived threat of an investor-state dispute may be a particularly powerful driver of public health policy non-decisions (23); especially compared to a potential WTO state-state trade dispute. With limited financial and technical resources, LMICs may be especially vulnerable to such regulatory chill (24).

In this paper, three distinct forms of regulatory chill are explored, similar to those described by Schram et al. (2018). *Specific response chill* refers to a chilling effect on a specific proposed/adopted measure after a government becomes aware of the threat of a potential investor-state dispute in relation to such a regulation (21) which may be due to ISDS disputes being pursued in another country. *Anticipatory chill* occurs in situations where policy makers take into account potential disputes with foreign investors during the policy development process, hampering regulatory progress across a range of public health policy areas (21). Lastly, *precedential chill* is where policy-makers change or abandon a regulation in response to a settled or resolved investor-state dispute due to concern of future disputes based on the same regulation (21).

In a recent realist review (presented in Chapter Five), just two empirical studies were found that broadly investigated regulatory chill, which drew different conclusions. A 2014 Canadian case study by Côte including health and safety and environmental regulators found little evidence of ISDS-related regulatory chill (25). Côte also conducted in-depth interviews and surveys with tobacco control regulators from 11 and 28 countries respectively, with similar findings. A separate, 2016 Canadian study by Van Harten and Scott, including interviews with officials in ministries with an environmental or trade mandate in Ontario, concluded that the Ministry of Health had changed its policymaking process to account for the risk of a trade or investment dispute including via adopting regulatory impact assessments and legal vetting procedures (26).

The purpose of this study is to contribute to this limited evidence base of ISDS-related regulatory chill using an in-depth case study analysis of nutrition and alcohol policy non-decisions in the LMIC country context of South Africa. The aim was to understand to what extent trade or investment agreements/rules are used by industry or potentially also economic policy actors as a tool to promote nutrition and alcohol policy non-decisions; to what extent, why and how the threat of an investor-state dispute as compared to a state-state WTO dispute contributes to public health regulatory chill; which types of regulatory chill may be occurring; and to identify any contextual factors, particularly relevant for LMICs, that may be either protective or increase vulnerability to regulatory chill.

Ethical approval for this work was obtained from the London School of Hygiene and Tropical Medicine (28 August 2018) and the University of Cape Town (12 December 2018).

2. METHODS

2.1 Case study selection

South Africa was selected as an appropriate single case study for a number of reasons. Well positioned geographically and with a relatively open economy, South Africa is a strategic hub from which THCCs can develop new markets across Africa (7). Additionally, South Africa is recognized as a regional policy leader, including in public health. As such, THCCs may have a particular interest in securing and maintaining a favourable regulatory environment in South Africa to prevent regional and continental policy transfer (27).

South Africa is also engaged in a number of trade and investment agreements, exposing it to threats of both WTO and ISDS arbitration. After Apartheid ended in 1994, South Africa rapidly entered into a number of trade and investment agreements in order to access foreign markets for South African goods and promote foreign direct investment into the country. In 1995 it became a member of the WTO, signed a Free Trade Area with the Southern African Development Community (SADC) in 1996, a further 22 bilateral investment agreements between 1997 and 2003 and a bilateral trade agreement with the European Union (EU) in 1999 (28).

The risk of investment arbitration was also within the political consciousness in South Africa, given the recent ISDS cases against Australia and Uruguay for proposed tobacco control regulations and South Africa's own previous exposure to two investment disputes that (along with other cases globally) had prompted a review of all South Africa's BITs in 2010. The review concluded that South Africa's 'first generation' BITs contained significant ambiguity in the core legal provisions protecting investor rights and potentially opened the door for narrow foreign commercial interests to challenge legitimate, constitutional, democratic public policy in unpredictable international investor-state arbitration (29). Based on the review's recommendations, the South African government terminated a number of existing BITs and instead sought to provide sufficient investment protection through a new Protection of Investment Act (2018) that confirms South Africa's commitment to an open, transparent environment for foreign investment, securing a balance of rights and obligations for all investors and reaffirming the government's right to regulate in the public interest (30).

Together with the other SADC countries, South Africa has also participated in a new model BIT (29) that allows South Africa to opt-out of ISDS in any future BITs, requires investors to exhaust local remedies before proceeding to arbitration, and provides the basis for government counterclaims and legal action against investors for treaty breaches (31). Additionally in 2019, South Africa made a submission to the United Nations Commission on International Trade Law discussing a range of possible reforms to the investor-state dispute settlement (ISDS) system including to protect domestic policy space (32). However, at the time of this research, while South Africa has terminated 12 BITs, it remained subject to potential investor-state

arbitration under 12 ongoing BITs to which it was party, and under ‘survival’ clauses of terminated agreements.

Given that this context creates awareness within the policymaking environment (including public health policymakers) of both WTO and BIT obligations and dispute risk, South Africa was selected as a useful case study since it allowed for analysis of how these risks may be used by external actors, including industry and trading partners, to effectively influence public health policy decision-making.

2.2. Data collection

A semi-structured interview guide (Appendix Three) was developed containing questions to elicit key actors’ understanding and experience of how South Africa’s international trade and investment obligations might influence nutrition and alcohol harm reduction policy processes; and the strategic approaches adopted by different stakeholders to achieve their desired trade/health objectives. The interview guide was piloted with local experts within academia and government and adapted accordingly before use. An initial stakeholder mapping was also undertaken to identify key policy actors with experience or expert knowledge on nutrition and alcohol policy issues and policymaking with potential relevance to international trade/investment; or trade and investment policy development and negotiations. To ensure accuracy, a Department of Health (DH) policymaker working at the intersection of trade and health policy assisted with the mapping process. Key stakeholders identified in the mapping process were then invited to participate in an interview. Subsequently, snow-ball sampling was used which resulted in additional stakeholder identification. In total 74 stakeholders were contacted and invited to take part in a one-hour semi-structured interview. Thirty-nine agreed, 23 did not respond and 12 declined to be interviewed (Table 7.1). While significant attempts were made to recruit government stakeholders in both senior technical and more political roles, it proved very challenging to recruit the latter.

Table 7.1: Summary of study participants

Stakeholder group	Key stakeholder invited to interview	Key stakeholder interviewed			Total interviewed	Total included in the analysis
		Nutrition	Alcohol	Cross-cutting		
Department of Health	17	7	1	3	11	10
Department. of Trade and Industry	14	0	2	6	8	7
National treasury	4	1	0	1	2	2
Department of Agriculture, Forestry and Fisheries	6	2	0	0	2	2
Department. of Social Development	1	0	1	0	1	1
Inter-governmental organizations, non-	8	4	2	0	6	6

government organizations and civil society organizations						
Multinational food and alcohol corporations (originating both from within and outside South Africa)	10	2	2	0	4	3
Academics	11	3	2	0	5	5
Health Attachés for South African Embassy in Geneva or Washington DC(current or past)	6	0	0	0	0	0
Total	77	19	10	10	39	36

Thirty-eight interviews were conducted with 39 participants between April 2019 and February 2020 either in-person in Cape Town/Pretoria or via phone/teleconference. Written consent was given before all in-person interviews. Verbal consent was given prior to all telephone interviews and written consent was subsequently obtained for all telephonic interviews except two. These two stakeholders failed to respond to repeated requests for written consent on follow-up and as such were excluded from the analysis. Additionally, one stakeholder indicated on their written consent forms that they did not give consent for their interviews to be included in my research publications and were therefore also excluded from the analysis. Given the content of these interviews, excluding them did not alter the findings of the research in any substantive way. Ultimately 35 interviews with 36 stakeholders were included in the analysis.

All government participants were chief or deputy directors within their respective departments with one deputy director general. In this work, government stakeholders directly involved in either agenda-setting or policy formulation are referred to as ‘policymakers’, while stakeholders in more political roles are referred to as ‘government officials’. Industry representatives were governance and regulatory experts, intergovernmental organization (IGO), non-governmental organization (NGO) and civil society (CSO) representatives had each been engaged in recent relevant nutrition or alcohol policy processes in South Africa. Where a stakeholder has not given permission to identify their institutional affiliation, they are simply referred to as a trade, health, or industry ‘stakeholder’.

All except two interviews were recorded. Detailed notes were taken during the two unrecorded interviews. One participant provided a written response to key interview questions but declined to be interviewed in relation to these questions (and was later one of the three interviewees excluded from the research since they did not give consent for the information they provided to be used in research publications). All recorded interviews were later transcribed in full. After each interview, the audio recordings or notes were reviewed to inform necessary adaptations to the interview guide and to identify the need for further interviews.

2.3 Analysis

Data were analysed using thematic content analysis. Codes were initially developed deductively, based on the three forms of regulatory chill outlined previously. Additional codes were developed inductively during the analysis. Coding was conducted in NVivo (version 12.6.0) to ensure consistency and transparency in the coding process. Coded extracts were then imported into Word documents organized according to main themes to identify patterns across key informant interviews.

3. RESULTS

Results are reported for each form of regulatory chill (anticipatory, response and precedential) and comparisons are drawn between any identified chilling effect generated by a perceived risk of an investor-state versus a WTO state-state dispute. We also report identified concessions on public health regulations made during trade negotiations. Finally, conditions that may increase the risk of, or protect against, regulatory chill are described.

3.1 Anticipatory chill

While tobacco regulators were aware of the specific risk of an investor-state dispute, particularly given the recent ISDS cases brought against Australia and Uruguay, this awareness had generally not expanded into nutrition and alcohol policymaking spaces. Most nutrition and alcohol policymakers within the Department of Health (DH) were not specifically aware of the risk of investor-state disputes and did not differentiate between obligations within trade agreements and BITs or different legal fora – WTO, international investment arbitration or domestic litigation. Although aware of South Africa's international investment obligations, one technical officer within the DH commented:

'It [the threat of investment arbitration] is not something that we have considered I must say, so it is difficult to comment on. I am aware of the tobacco issues. But in this case of alcohol, not at all. It's not something that has been on the table.' [DHA1]

Nutrition and alcohol advocates within CSOs and NGOs broadly lacked awareness of South Africa's international investment obligations and exposure to potential investor-state disputes.

However, various trade and health policymakers confirmed that all public health regulations were vetted by the State Legal Advisors to ensure compliance with South Africa's constitutional and international legal obligations, including under existing trade agreements and BITs. One trade official commented, for example:

'there's an enormous amount of resources that go into this... and say what are the trade effects? And then you've got to make a judgment in terms of the agreements to say yes you can do it for these reasons, but you have to do it in the way that least restricts trade' [DTI3]

A nutrition policymaker within the DH also stated:

'we make sure that whenever we come up with legislation, our lawyers will get that, and should there be any sight of any possible disputes, they would have to advise that this might impact in terms of trade [or investment obligations].' [DHN1]

This suggests that despite limited awareness amongst most but not all nutrition and alcohol policymakers, there was some cursory awareness of investment-related risk assessment being internalized in the policy development process to some extent with the potential to generate a degree of anticipatory chill.

In contrast to limited awareness of international investment obligations and risk of ISDS, health policy makers were generally aware of the risk of generating 'trade concerns' from trading partners and industry or potentially a WTO challenge if health policy was not compliant with South Africa's trade obligations. Policymakers described that compliance with WTO rules had contributed to the internalization of a number of principles in policymaking processes, particularly for trade-sensitive regulations (e.g. nutrition and alcohol health warning labelling). These included revising the regulation to ensure it is as least trade restrictive as possible, adopting a strict evidence-based approach to policymaking and when local evidence was not available, ensuring policies aligned with international standards or guidelines. Following these principles were considered by trade actors not to restrict regulatory space for nutrition and alcohol harm reduction. One trade policymaker explained, for example:

'If the DH identifies the need for some kind of you know labelling... it will be done because it's been identified as a need and then that will be a scientifically grounded decision... they will ask us what the implications are for trade and they will make sure that the way that it's carried out in a manner consistent with our obligations. And if we are clear that its consistent with our obligations... that it's evidence based... that it will be applied to deal with the particular health problem then we will be able to convince our principal and proceed' [DTI02]

However, internalizing these principles in health policy processes to comply with trade rules was reported by health policymakers to limit the scope of policies and policy design options available; delay the policy process; and was burdensome on limited DH resources. As such trade obligations generated a significantly greater anticipatory-type chilling effect on nutrition and alcohol regulation than South Africa's investment obligations. One policymaker within the DH remarked for example:

'we've now got to work harder in terms of how we're then going to defend, how we approach this because whatever we put on the label, it can't hinder any trade.' [DHN2]

Alcohol and food labelling were particularly recognised as potential technical barriers to trade and ensuring these and any other trade-sensitive health regulations were as least trade restrictive as possible was internalized in policy development. Unacceptably high costs of implementing a regulation for THCCs importing into South Africa were particularly mentioned as a technical barrier to trade. As such, minimizing the cost to importers of a health regulation during policy development was considered important, particularly by trade policy actors and was a potential driver of policy non-decisions. For example, as one trade policymaker commented when asked whether nutrition labelling would be considered a technical barrier to trade:

'... it also depends on what the manufacturers, the cost for them will be, and for trading partners and the manufacturers in other countries from where we import, what their views are' [DT11]

Trade obligations and concern to avoid triggering trade challenges have contributed to the internalization of a strict 'evidence-based' approach to policymaking and was identified as a key driver of policy non-decisions or delays in policy adoption. Evidence of the need for regulation (e.g. obesity or fetal alcohol syndrome prevalence) and usually also of likely policy effectiveness, including specifically in the South African context, was considered necessary which caused delays, especially given limited DH research funding. As one DH policymaker reflected:

'it's delaying it [front-of-pack nutrition labelling policy process] to the extent that those to whom we've advocated for this policy are saying 'but you're taking too long'... but we have to put in place the scientific evidence and all the consumer acceptance... so that it can be defended if it does come up as a trade dispute' [DHN2]

Another health stakeholder explained:

'some of these international organizations they will say that there is no robust evidence on the issue of food labelling legislation that we are proposing and if you go ahead with that food labelling legislation then, like in Thailand, you will be subjected to WTO agreements and then you go through the WTO dispute resolution mechanism' [H1]

In relation to South Africa's proposed tobacco plain packaging regulation, another health stakeholder commented:

'when they are threatening, you also want to make sure that you have enough evidence that could stand in a court of law. So, for all those areas that they started threatening we were able to go and search for more in-depth and more convincing evidence so that by the time they take us to court, we are ready because they are already indicating that they will take us to court' [H2]

While local evidence to support the need for and likely effectiveness of a regulation was considered grounds to safely diverge from international standards/guidelines, limited DH funding for research meant health policymakers were often forced to rely on international standards/guidelines to determine the policy agenda in order to avoid trade challenges as a third principle internalized in the policymaking process. As one policymaker within the DH commented:

'for us as a developing country, we don't have the resources to go about doing the science, so we often have to rely on donors, international donors that can assist us to develop this science whereas if it's already in Codex or it's already in WHO, when it comes from a health policy perspective, we can then say well, the policy narrative comes from the WHO, therefor it's something that we need to look at.' [DHN3]

Another DH policymaker confirmed: *'we make sure that we look in terms of what Codex has done, what the WHO is saying.'* [DHN1]

Without local research, the additional lack of guidance from Codex on front-of-pack nutrition labelling had also contribute to delayed progress on nutrition labelling, the same health policymaker explained:

'Codex hasn't provided clear guidance, but there's actually now work which is being done by Codex and the WHO, so we're trying to see what guidance can they provide in terms of us going forward.' [DHN1]

Trade policymakers also commented on the importance of adhering to international standards but that deviation from these standards was acceptable if adequately robust evidence existed to support an alternative measure. One policymaker within the Department of Trade and Industry (DTI) reported:

'where there is an international standard in place you must use that as a guide, and where there are situations in your country where the international standard won't address your objective for the regulation, you can deviate from the international standard, but that should be evidence based. When you introduce regulation and you've done your research and have the necessary evidence to deviate from the international standard for your specific circumstances, then you are allowed to do that' [DTI1]

A number of stakeholders mentioned that the obligation to notify WTO of any proposed regulation provided foreign corporations with another channel, either directly or through their home governments, to lobby and prolong the policy process. However this process was broadly considered necessary and important to ensure

transparency and predictability in the policy environment despite being time and resource intensive. Health policymakers also considered that spending sufficient time consulting with international stakeholders was important to prevent THCCs taking legal action, as explained by one DH policymaker:

The legislation [the nutrition labelling regulation] is still in the consultation phase... we didn't want to rush in in terms of bringing in this legislation because we know the impact it's going to have... we didn't want to... be taken to court [by a company] saying that they were never consulted. We wanted to avoid it. Hence, even our international counterparts, we send it out to them and said this is what South Africa's going to come up with – do you have any comments?' [DHN1]

3.2 Response chill

Trade officials reported that the South African government had delayed progress on their proposed tobacco plain packaging regulation by about two years until the outcome of both Australia's ISDS and WTO cases were known, suggesting a degree of response chill had occurred in the area of tobacco control. Adopting a 'wait and see' approach was based on a reluctance to expend resources on developing and implementing a regulation they would later have to reverse if the same regulation in another country was judged in arbitration to be in violation of either international investment or WTO rules. As one trade official explained:

'if you were watching a case under a bilateral investment treaty, and you went ahead and implemented that same regulation and the case was found in favour of the investor, then you could just see them lining up in South Africa to proceed in the same way, so you'd have that [chilling] effect but at the WTO the fact that this case [involving Australia's standardised tobacco packaging regulation] was going on, we didn't know what the outcome would be, so would you go ahead and implement it only to have to reverse it afterwards because the award went against the Australians? so yeah so it would have the same [chilling] effect.' [DTI3]

There were however no definitive cases reported by key informants of THCCs threatening to initiate an investor-state dispute in an effort to generate a chilling effect on a specific nutrition or alcohol regulation in South Africa. One alcohol industry representative denied that they were aware of ISDS. Further, senior trade officials within the DTI reflected that from their perspective, avoiding a WTO dispute was of equal concern as avoiding an investor-state dispute, particularly due to the very high perceived costs involved with both.

CSO representatives and academics perceived that resorting to the use of 'hard' legal tactics has to date been generally unnecessary for the food and alcohol industry. Instead, they are considered legitimate stakeholders in the policymaking process and can effectively apply 'softer' mechanism of power to expand access to and influence within policymaking spaces, as discussed in detail in Chapter Six. One academic reflected for example,

'...they probably haven't needed to do that[use investor state disputes because they're using other approaches like embedding themselves with senior government officials.]' [RA2]

Another academic shared a similar view:

'they're so close [government and the alcohol industry] that they don't need to bring in these threats of international trade agreements because they've got enough power within the country to push policy makers.' [RA1]

While a number of CSO representatives and academics were concerned that the alcohol and food industries would, if necessary, use trade or investment arbitration in the future, preserving an amicable relationship with government was considered a key motivation for industry to avoid, wherever possible, adopting such 'hard' tactics of influence. For example, one health official commented:

'I think they try not to offend government [with legal threats] and sometimes government doesn't respond well to threats. Sometimes they have their mind more on convincing to say look, if this goes ahead we're going to have to scale down our factory, and people are going to lose jobs because our sales of sugar is going to decline.' [TS1]

These views were supported by one alcohol industry representative in relation to the proposed alcohol health warning labelling which they argued was ambiguous and contrary to other domestic law:

'[in relation to the] health warning regulations we had to make a decision whether we would take the DH to court. And it was an incredibly difficult decision because... they are regulators and you might win that battle but lose the war ultimately... the decision that we took at the time is 'let's continue finding ways to find some solutions with the DH but use our courts as a last resort.'

However, respondents described a number of cases in which South Africa's trade obligations were used by either trading partners or THCCs potentially to promote policy-non decisions in relation to specific nutrition or alcohol regulations. The number of examples described may well be underestimated since it was acknowledged by some health policymakers that pressure from trading partners for South Africa to abandon certain regulations potentially occurred between high-level political actors within closed informal political spaces.

Trading partners and THCCs had raised 'trade concerns' and/or sought bilateral consultation in relation to South Africa's proposed front-of-pack nutrition labelling of processed foods. For example, one DH policymaker reported having resisted attempts by other countries to pressure South Africa into aligning their food labelling regulations with other countries to minimize costs to their companies importing into South

Africa- *'they don't want to have to put on an extra, different label for South Africa and say then that is a barrier for trade.'* [DHN2]

While health policymakers denied that other countries' proposed nutrition labelling being raised as a 'specific trade concern' within the WTO's TBT Committee meetings had delayed progress on South Africa's own labelling regulation, policymakers were assessing these cases as part of their policy development process and proceeding cautiously.

In relation to the tax on sugar-sweetened beverages introduced in 2018, health policymakers reported that a sugar-producing European country had attempted to pressure South Africa into dropping the regulation claiming that it would affect global sugar production and was in violation of South Africa's trade commitments. However, one health actor commented *'in the end the trade side was also overridden by the health'* [H3] and the tax was introduced, although at just 11%, not the originally proposed 30%.

It was also reported by nutrition policymakers that industry had argued the originally proposed Regulations Relating to Foodstuffs for Infants and Young Children (eventually introduced in 2012), would create unnecessary barriers to trade; that certain elements went beyond what was recommended by Codex and the WHO's International Code of Marketing of Breastmilk Substitutes (e.g. including pacifiers/dummies); or did not have sufficient supporting evidence (e.g. banning marketing of complimentary foods). However, these threats did not dissuade the DH from adopting one of the most comprehensive set of regulations relating to marketing of infant formula globally in line with WHO guidelines.

In 2014 the DH proposed amendments to their Regulations Relating to Health Messages on Container Labels of Alcoholic Beverages, increasing the size of the warnings to one-eighth of the container and rotating each of the seven warnings within every twelve-month period. After notifying the WTO of the amendment, the regulation was raised at the TBT Committee by the EU and Canada over concerns it would create barriers to trade for small and medium producers (33). Subsequently, the local alcohol industry as well as trading partners (including the EU and US) and foreign transnational alcohol corporations have bilaterally engaged the DH raising concerns about ambiguity of the regulation; problem with the wording of the health messages, accepting for example 'don't drink and drive' but not 'alcohol may be a danger to your health'; impracticality/technical feasibility of the proposed size of the labels; the cost to manufacturers of such frequent rotation of messages; and lack of sufficient evidence of the regulation's effectiveness in reducing alcohol-related harm. It was mentioned by a few health policymakers that transnational alcohol companies had complained that for a number of the reasons outlined, the labelling requirements would create unnecessary barriers to trade.

Ultimately however, despite a reported earlier consensus between DH and DTI in favour of amending the alcohol health warning labelling regulation, in October 2020, the DH repealed the proposed amendments due to the challenges of implementing the regulation raised by local industry (e.g., the difficulty in calculating one-eighth of the surface area on an alcohol container) and potentially also international stakeholders concerned that the regulation created unnecessary barriers to trade. The DH planned to review the regulation in light of informal discussions with the WHO and their discussion paper on policy options for alcohol labelling. This process indicates the requirement for very specific international guidance on the design, size and content of health warning labels based on scientific evidence.

When asked more generally about the use of trade rules as a strategy to influence South Africa's regulation, one alcohol industry representative reflected:

'And it's a long, drawn-out process, even as a business. We would never go to a government and say that this government is in contravention of the WTO, without being a hundred percent certain.' [A12]

Another foreign transnational alcohol corporation representative commented that while *'using international trade rules to limit policy'* [IA2] had been considered by the alcohol industry, it was in fact very difficult to achieve.

There was however indication that the alcohol industry attempted to enlist the South African government to act on their behalf at the WTO in an effort to promote policy non-decisions by South Africa's trading partners.

This was explained by a trade official:

'industries will come and they'll make a case and they'll go through NEDLAC [the National Economic Development and Labour Council] and they'll write to the ministers, they'll write to the president, they'll speak to all of the officials and they try to make their case [for filing a WTO complaint against a trading partner] and then you'd have to make an assessment of whether or not the case is legitimate, whether or not you have a chance of winning the case.' [DT13]

An alcohol industry representative commented however, that industry did not contribute enough to GDP to be in a position to convince the SA government to act on their behalf within WTO fora. On trade issues that the alcohol industry did not consider the South African government would support on, the industry was able to utilise its global business network through, for example the World Wine Trade Group that includes wine producers and distributors in US, Canada, Chile, Australia, New Zealand, Uruguay, Argentina and Georgia. For example, in relation to Scotland's proposed minimum unit pricing regulation an alcohol industry representative commented:

'we asked our counterparts in those countries to please speak to their governments. And again, you speak to the ones who are most likely to help. And you know the US government was willing to listen to its industry and raise concerns'. [AI1]

Together these findings again indicate that South Africa's trade obligations are currently a much more relevant tool of influence to promote nutrition and alcohol policy non-decisions than any problem of response chill resulting from threats of investment arbitration.

3.3 Precedential chill

Given that no previous investor-state disputes have been in relation to a specific nutrition or alcohol harm reduction regulation in South Africa or elsewhere, no cases of precedential chill in these policy areas were identified. However again, trade officials reported South African government's confidence to proceed with their tobacco plain packaging proposal was significantly boosted by the positive outcomes in Australia's and ISDS case despite the lack of precedent in international investment case law. This suggests that had the opposite outcome been reached in the ISDS case, precedential chill may have occurred for tobacco plain packaging in South Africa.

The outcome of the WTO dispute against Australia was however reported by both trade and health actors to have equally influenced South Africa's decision to proceed with implementing their own regulation. One trade official explained this was due to an understanding that once precedents are established in WTO case law, they usually hold in future cases so for South Africa to proceed with plain packaging if Australia has lost their case would likely have been perceived as too risky:

'if it had gone against Australia perhaps there would have been a re-evaluation [of the policy in South Africa] and to then take into account the risks of another challenge to us and you know once the precedent is set, then it's very difficult to win the case after that, so the risk of being challenged successfully would have gone up and so... we would have to make an assessment whether not it was worth taking that risk.' [DT13]

3.4 Concessions on public health in trade negotiations

In addition to concerns of post-agreement trade rule violations, trade policymakers described the potential for health non-decisions to be promoted during trade agreement negotiations.

There was concern amongst high-level trade officials that international trade rules, particularly those outside the WTO systems, so-called 'WTO-plus' or 'WTO-extra' commitments, had the potential to restrict domestic

public policy space for addressing development challenges. As such South Africa generally tried to negotiate agreements within the WTO framework. As one trade official explained:

'we still sit with huge unemployment and rural under-development... So you want to address both issues, you don't want to be tied up in agreements that prevent you from doing certain actions that are in the public's interest.' [DTI3]

However, it was fairly widely perceived that, as a developing country, South Africa was often required to make concessions during trade negotiations with larger more powerful economies, including further opening their markets for processed foods products and alcohol. As one alcohol industry representative stated:

'they [the DTI] don't start looking at alcohol policy and say well you know, should we be allowing alcohol to come in duty free? It's the powers of negotiators at a trade block level that will determine the outcome.' [AI1]

In 2015 the US was reported to have threatened to cut access of approximately 6000 South African products, including wine, to the US market under the African Growth and Opportunity Act Agreement if South Africa did not lift an anti-dumping duty and other trade barriers to imported US chicken products. Ultimately, South Africa agreed to reduce barriers to US chicken imports which also required relaxing poultry food and safety standards., which some suggested had potential direct health impacts. Others mentioned the indirect public health impacts relating to the devastating economic impact on local poultry farmers who could not compete with the high volume of cheap imported US chicken cuts. There was however a general perception that ultimately the economic benefits outweighed the health impacts, as one health stakeholder explained:

'[we] looked at the cost and benefits ultimately and we then realised that, in the long run, it will be in our best interest to relax some of the health and safety regulations for a bigger agenda or for a bigger good.' [H1]

3.5 Conditions that influence regulatory chill or trade-related policy non-decisions.

Both trade and health policymakers discussed various conditions that may directly or indirectly increase the likelihood of, or protect against regulatory chill. The first set of conditions relates to perceptions of the international trade and investment rules and dispute settlement systems themselves, however these were primarily discussed in general terms, not in relation to specific cases of nutrition or alcohol regulatory chill. While some trade policymakers were confident that existing safeguards within the Sanitary and Phytosanitary Agreement (SPS) and Technical Barriers to Trade Agreement (TBT) provided sufficient protection for nutrition and alcohol harm reduction regulation, another high-level trade official was concerned that WTO agreements *'were not entirely balanced'* and tended to prioritize trade over health objectives. However, this comment was made in relation to the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) and access to medicines, not nutrition or alcohol regulation.

The same trade official also reflected that the WTO dispute settlement system was structured in a way that prioritized trade over health:

'it's quite tenuous in a sense that you that these serious health considerations would be subject to a decision by panellists that have in their mind the trade implications overwhelmingly... you get a chance of a bias in the WTO towards trade... they're highly competent people but this [health] is not their field.' [DTI3]

However, another trade policymaker felt that over time, WTO norms had shifted such that expert input from the WHO was increasingly sought and considered during health-relevant arbitration.

The WTO dispute system was still though perceived as a preferred option to the ISDS system, partly since it had been agreed on by all WTO member states and provides a buffer against weak claims by industry:

'the WTO mechanism is seen to be a better option, it's also not... private companies that challenge governments, its [other] states. They [private corporations] have to convince their government to take up the challenge in order to launch it... so there's an advantage' [DTI3]

Trade policymakers recognized a number of characteristics of the ISDS system which may increase the risk of regulatory chill which, not surprisingly, aligned with the findings of the 2010 Review of South Africa's BITs. These included a lack of perceived legitimacy of the ISDS process since cases are brought by private corporations against a government and the outcome decided by three private arbitrators; a lack of precedent and consistency in arbitral decisions; conflict of interest of arbitrators and lawyers; and cost of arbitration itself as well as potential investor compensation. One trade official considered the risks of attracting an investment dispute would be higher than a WTO dispute:

'Because not only are you talking about companies that have vested interest but there are lawyers floating around that look at all of these types of things and see that there are possibilities for challenging it.' [DTI3]

While in theory these concerns meant the threat of an investor-state dispute may generate greater uncertainty and concern than the threat of a WTO dispute, in practice, the perceived high costs associated with either could potentially have a chilling effect on health policy. One trade official reported for example: *'...the costs become a really important consideration. And the longer they go on the more costly that becomes and many developing countries simply don't have the financial where with all to pursue this case... even when they would want to pursue them, they may not be able to and may accede to the demands of the claimants more easily than a developed country that... is prepared to fight the case with the best available lawyers over a period of time.'* [DTI3]

The cost of trade sanctions imposed by a trading partner in response to an identified or perceived violation of South Africa's trade obligations was also noted to be a major consideration.

Stakeholders within the DTI also identified a number of country-related characteristics, largely determined by a state's level of economic development, that may increase the likelihood of regulatory chill or trade-related policy non-decisions in South Africa and other LMIC countries. Limited institutional capacity for analysing trade and investment treaty texts (as had previously occurred in South Africa) and their ongoing status as primarily a 'rule-taker' in treaty negotiations with larger economies were considered by trade policymakers to potentially make it difficult to ensure policy space to regulate in the public interest is protected. Lack of technical capacity and human resources was also reported to make it challenging for South Africa to engage in negotiations over, monitor and assess new regulations and procedures within the multiple WTO fora. This was thought to potentially make South Africa more vulnerable to non-compliance with newer WTO regulations exposing them to potential trade-related complaints or disputes. Limited trade literacy within the DH (outside access to medicines issues) and minimal collaboration and coordination between trade and health policymakers on trade policy development or negotiations was also identified as having potential to reduce nutrition and alcohol policy space.

Industry-related factors include the social acceptability of the industry being regulated with indication that a high level of industry unacceptability can be protective against regulatory chill. For example, in contrast to the food and alcohol industry, trade actors reflected on the social unacceptability of the tobacco industry and its products and how this motivated the government to proceed with standardized packaging despite the ongoing recognized risk of a trade or investment dispute (albeit a reduced risk given the favourable outcomes in the WTO and investor-state disputes against Australia and Uruguay).

High levels of social unacceptability of the relevant industry also appeared to diminish the applicability of rationale used by trade actors to explain policy non-decisions. For example, while both trade and health policymakers identified insufficient evidence as a key driver of nutrition policy non-decisions (partly since this exposed South Africa to a trade or investor challenge), lack of evidence of policy effectiveness was not considered a reason to shelve the proposed tobacco standardized packaging regulation. As one trade policymaker explained:

'you can only determine what will be the effect after it has been introduced. So it's very difficult to anticipate beforehand what the results will be. But from our point of view we don't really see a negative effect [of adopting standardized packaging].' [DT11]

A product's perceived risk to health could also influence the willingness of policymakers to pursue a regulation despite the trade or investment-related legal risks. While a high degree of evidence of a causal relationship between a product and deleterious outcome was essential, the health risk of a product appeared also to be assessed on the basis of the complexity of the causal relationship between the product and health

outcome. For example, the risk to health of sugary foods was not considered sufficient to warrant restricting trade, as one trade policymaker explained:

'A product like sugar we know there is a health risk but used moderately there is not really a high risk. So it depends on the risk of a product, you cannot just for the sake of banning, remove it from your market for health purposes unless there is overwhelming scientific evidence of the risks of a product.' [DTI1]

This was reflected on by one health policy actor as contrasting with South Africa's willingness to introduce the South African Medicines Act in 1997 which advocated for parallel importing and compulsory licensing despite legal threats that these policies were in violation of the TRIPS Agreement. This was considered due to how clear and direct the implications of TRIPS was for access to affordable medicines during the AIDS epidemic and the associated severity and scale of AIDS mortality at that time in South Africa. These issue characteristics, along with massive civil society pressure, were cited by policymakers as the key reason government adopted amendments to the Medicines and Related Substance Control Act with the purpose of enabling South Africa to benefit from parallel importing of lower priced generic medicines despite threats of US trade sanctions (South Africa was placed on its 301 special Watch list, suspending certain trade advantages and employing persistent diplomatic pressure to urge repeal of the act), a WTO dispute and a domestic legal case brought by multinational pharmaceutical companies including for violations of TRIPS.

The capacity for cross-border policy learning also appeared to build policymaker confidence in developing regulations that would withstand any trade (or possibly investment) challenges. Health policymakers reported reviewing measures other countries have taken and successfully defended in WTO fora including the evidence used and policy design. As, for example, one DH policymaker commented in relation to front-of-pack nutrition labelling:

'we're actually looking in terms of what other countries have done and what the challenges might be, we're involving the legal minds to help come up with something like this, so that we wouldn't have any trade disputes or any challenges with the WTO.' [DHN1]

Lastly, political will, policy champions and the strength of civil society action were mentioned as important to protect against regulatory chill and policy non-decisions.

4. DISCUSSION

This research sought to investigate if, why and in what form regulatory chill may be occurring in an LMIC country context. Aligned with both previous empirical studies (25, 26), this work found a low level of awareness of South Africa's BIT obligations and the potential threat of an ISDS challenge amongst nutrition and alcohol policymakers and an outsourcing of legal vetting of public health regulations for BIT compliance.

While this indicates the potential for anticipatory chill, no definitive evidence of such was identified. However, WTO obligations and the perceived risk of a state-state dispute had contributed to policymakers internalizing a relatively strict evidence-based policymaking approach and general adherence to international standards/guidelines (particularly when local evidence is not available) and were encouraged to design regulations to be as least trade restrictive as possible. These findings point to a number of potential strategies to reduce the risk of nutrition and/or alcohol policy chill/non-decisions both in South Africa but potentially also other LMICs.

Approaches that may reduce the 'anticipatory' burden on health policymaking include, at the international-level, resolving the uncertainty regarding evidential requirements to prove the necessity of a health measure in WTO fora and confirming the acceptability of measures based on existing science or scientific logic in the absence of indisputable evidence of policy effectiveness. Establishing robust mechanisms to manage conflicts of interest within international standard and guideline-setting bodies and fora, including Codex and the WHO will also be critical to reducing industry influence in the standards and guidelines used to shape national policy agendas and protect against trade challenges.

At the national level, increased funding for independent nutrition and alcohol policy research should be a priority. Building capacity within both departments/ministries of health and trade to understand the implications of trade and investment obligations on nutrition and alcohol policy development and establishing new and/or utilizing existing co-ordination mechanisms between departments, to promote health policy expert engagement in trade (and investment) policy and agreement negotiations will also be important. This may help ensure public health policy space is protected in future agreements, for example by advocating for reducing the burden on health policymakers to prove regulatory effectiveness a priori, instead accepting post-adoption policy evaluation. In South Africa for example a number of mechanisms to promote policy co-ordination across sectors are already well established including the Forum of South African Directors-General cluster system within government and the National Economic Development and Labour Council in which government comes together with business, labour and community groups to discuss and try to reach consensus on issues of social and economic policy. It may be possible to utilize these structures to improve trade and health policy co-ordination. New inter-ministerial co-ordination structures have also recently been established in South Africa which have improved co-ordination on the specific trade and health issue of intellectual property (e.g., the Inter-Ministerial Committee on Intellectual Property). However, structural change alone is insufficient, improving co-ordination and policy cohesion very much depends on each government's overarching values, interests and priorities in spaces where health issues and wider foreign policy matters converge. Further, co-ordination efforts will only be effective if replicated at the regional (e.g. in SADC model BIT) and international level (e.g. in WTO agreements).

To support such action public health advocacy organizations active in LMICs must become more attuned to the effects of trade agreements on nutrition and alcohol regulatory progress and find ways to distil the complexity of linkages down into simple terms that effectively communicate the implications for the food and alcohol products available in people's everyday lives (their food and alcohol 'environments') (7, 34) which shape food options and drinking decisions. For example, simple messaging of the direct impact of trade agreements on the cost of medicines and people's health as well as the use of human rights framings proved highly effective in building public support and driving political action to protect access to affordable medicines in South Africa during the AIDS epidemic despite threats of trade sanctions, an international trade dispute and domestic litigation.

No clear evidence was identified that THCCs have resorted to threatening South Africa directly with an investor-state dispute in relation to nutrition or alcohol regulations. Rather THCCs tend to seek to protect their status as legitimate stakeholders in policymaking processes and instead use a range of 'softer' strategies to influence policy decisions. However, the tobacco standardized packaging case provides evidence that by initiating investment litigation against one country, THCCs can generate a response chill delaying the same regulatory development process in others. This case also suggests that precedential chill may well occur if investment arbitrators rule against a public health regulation. These findings support concerns that a single investor-state dispute can potentially shift decision-making power (at least temporarily) from the state to a private tribunal, not only in the litigating country, but also, in other countries globally (14, 35). These findings should incentivize LMICs to continue or start taking steps to protect public health policy space within future BITs (e.g. by complete carve-outs of regulations designed to protect public health (36)) and by eliminating their exposure to ISDS, particularly given the limited evidence that investment protection provisions within BITs promote foreign investment (37, 38). Brazil for example has entered into a number of Co-operation and Facilitation Investment Agreements that exclude ISDS (39). Regionally, consideration of investment protection frameworks that mitigate the risks of earlier investment treaties and establish a more appropriate balance between investor protection and the rights of government to regulate in the public interest may be useful. Given many LMICs' ongoing exposure to ISDS, increasing public health policymaker knowledge of BIT legal obligations and relevant dispute decisions in a balanced manner such that they can recognize future potential spurious threats and maximize existing policy space, may also be useful.

Trade-related concerns raised by trading partners and industry appear to occur much more frequently than threats of BIT non-compliance in South Africa and have the potential to promote regulatory chill. Downstream post-treaty adoption strategies to build health policymaker confidence against claims of trade agreement violations may include strengthening mechanisms for policy learning across borders and improved inter-departmental trade and health capacity and coordination, as has been found in Thailand (40). Alleviating the potentially prohibitive cost for LMICs of defending a health measure in a WTO dispute may

also be important to reduce any cost-related drivers of regulatory non-decisions. Requiring public health experts to sit on WTO arbitration panels residing over cases of public health relevance may be a way to decrease the real if not perceived bias of dispute panels.

Finally, diminishing social acceptability of an industry and its product may help shift political priority from avoiding a trade or investment challenge to instead a more proactive regulatory approach. Strategies to achieve this include clear communication of a product's negative impacts on public health; exposure of nefarious industry tactics to promote unhealthy consumption of these products; and use of framing. For example, the industry 'demonization' frame has been effective in building public support for regulating the marketing of 'junk food' to children in Australia (41) and has widely been applied to promote tobacco control. A 'systems' framing for complex public health challenges like obesity that effectively shifts responsibility from the individual to higher level system actors including industry and government has also been effective, for example in generating political priority for obesity prevention in Australia (41).

5. LIMITATIONS

There are some limitations in the analysis. There is a risk that sampling bias occurred due to systematic differences in those accepting and declining to be interviewed. While very effort was made to conduct interviews with stakeholders representing a diverse range of perspectives, significantly fewer higher-level trade and health political actors were interviewed than those leading policy development at the technical level. Given the powerful interests involved and political nature of the topics covered in this research and the fact that many key policy discussions occur in private, there may be important high-level negotiations, deal brokering or motivations driving certain policy decisions that were not disclosed in the interviews.

Finally, the single case study design means caution must be taken in generalizing the research findings to other settings. Overall however, despite the variable degrees of regulatory chill likely to be occurring in different countries (and in different NCD policy areas) due to various contextual differences, we suggest that the ongoing and deepening commitment to trade and investment obligations in many countries, and the potential for corporations to use these to threaten costly trade or investment disputes, make the recommendations in this paper widely applicable.

6. CONCLUSION

To the best of my knowledge this research contributes the first case study investigating BIT-related public health regulatory chill in an LMIC country context. Our findings indicate that currently, South Africa's trade obligations have a more prominent role in nutrition and alcohol policy non-decisions than BIT-related

concerns. However, given the potential for wider use of the ISDS mechanism by THCCs in the future, strategies to protect public health policy space in the context of both international trade and investment treaty and dispute settlement contexts will be important. This work highlights the need for further research examining strategies used by governments to withstand BIT and trade-related legal threats by industry (or trading partners) and how greater protection of health policy space can be achieved within trade and investment agreements. The case of access to medicines in South Africa would provide a very useful starting point for such research.

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RESEARCH PAPER COVER SHEET

Please note that a cover sheet must be completed for each research paper included within a thesis.

SECTION A – Student Details

Student ID Number	1602951	Title	Dr
First Name(s)	Penelope		
Surname/Family Name	Milsom		
Thesis Title	International trade and investment liberalization, corporate power and non-communicable disease prevention policy: A case study of nutrition and alcohol policy non-decisions in South Africa		
Primary Supervisor	Helen Walls		

If the Research Paper has previously been published please complete Section B, if not please move to Section C.

SECTION B – Paper already published

Where was the work published?			
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Have you retained the copyright for the work?*	Choose an item.	Was the work subject to academic peer review?	Choose an item.

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SECTION C – Prepared for publication, but not yet published

Where is the work intended to be published?	Social Science and Medicine
Please list the paper's authors in the intended authorship order:	P Milsom, A Tomoia-Cotisel, S Allen, R Smith, H Walls

Stage of publication	Not yet submitted
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SECTION D – Multi-authored work

For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)	I conceptualized the research topic and aim, developed the methodology, collected the data (conducted the key informant interviews) and conducted the formal analysis. I wrote the original draft, and undertook revisions/edits of the draft to generate the final manuscript.
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SECTION E

Student Signature	[REDACTED]
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Date	14 May 2021

CHAPTER EIGHT: EXPLORING THE UTILITY OF SYSTEM DYNAMICS FOR UNDERSTANDING POWER IN NON-COMMUNICABLE DISEASE PREVENTION POLICYMAKING

CHAPTER OVERVIEW

In Chapters Six and Seven I used thematic analyses of interviews with key stakeholders to understand how the international trade and investment system facilitates different forms of corporate power in nutrition and alcohol policymaking in South Africa. This empirical work as well as the realist review presented in Chapter Four, indicated health policy decisions emerged from complex interactions between the various identified political economy factors and mechanisms of corporate power. However, this was difficult to capture and analyze using traditional health policy process analysis methods, including the thematic analysis used in earlier chapters. It was also difficult to predict the system level impacts of strategies to challenge corporate power and promote policy action using these methods.

Systems thinking, and specifically system dynamics, offer an approach and methods for mapping out and analyzing the interactions between various casual factors of complex problems or phenomena. System dynamics methods are increasingly being used in public health research to guide policy decisions, but health policy *process* analysis has, to date, engaged very little with systems methods. In this Chapter I explore how system dynamics modelling methods may be useful for deepening my understanding of corporate power in diet-related NCD prevention policymaking in the context of trade and investment liberalization. More broadly, it is intended that this work offer insights into the utility of using this approach and methods for analyzing health processes and decisions which are inherently political and involve complex power relations. I present my methodological approach in detail and discuss in the results section a number of both methodological and theoretical considerations that surfaced while I undertook this work.

This paper has been prepared for publication, although has not yet been submitted. For the purpose of this thesis tables and figures have been renumbered and and reference back to previous thesis chapters have been added where appropriate.

ABSTRACT

Background: NCD prevention policy action is determined by the complex and dynamic interaction of multiple political economy factors and mechanisms of power across different levels. However, this dynamic complexity is difficult to analyze using traditional health policy process analysis methods. System dynamics methods are increasingly being used to understand the complexity of non-communicable diseases (NCDs), although they have rarely been used to understand the barriers and enablers of NCD prevention policy action. The primary objective of this paper therefore was to explore the utility of using system dynamics modelling (SDM) methods to understand diet-related (DR) NCD prevention policy inaction using South Africa as a case study.

Methods: Twenty-four interviews with 25 key policy actors were analysed using purposive text analysis (PTA) to systematically identify causal statements and system variables/elements and the linkages between them within the stakeholder dialogue. A mixed theory-building and theory-testing approach was adopted. The PTA was then used to develop individual casual loop diagrams (CLDs) which were systematically combined into a shared mental model representing the *DR NCD policy system*. Additional variables and linkages were identified from the literature. The model was validated by checking it against the problem statement, ensuring concept saturation had been reached and by reviewing it with eight key stakeholders.

Findings: A number of challenges were encountered in using SDM for analysing highly political policy decisions. Power dynamics and relations may mean that certain system structures are hidden from or invisible to stakeholders, limiting their mental models or powerful stakeholders sought to prevent certain parts of the system from being exposed. These challenges were partly addressed by supplementing system actor-sourced data with data identified in the existing literature and adopting a theory-building theory-testing approach. By adopting this approach it was found that power theory may extend the utility of SDM for analyzing highly political policymaking problems.

Conclusions: Despite some key challenges, the SDM approach offers a promising new way of thinking about and understanding barriers and enablers to NCD prevention policy action. By visualising the interconnections between the political economy factors constituting the various mechanisms of power in policymaking, it provides explanatory insight into the feedback processes that perpetuate and entrench existing relations of power over time, maintaining barriers to policy action.

1. INTRODUCTION

The causal complexity of public health problems including unhealthy diets, obesity and NCDs is increasingly recognized in a growing body of literature (1-5). The way these challenges are responded to in the form of NCD prevention policy action (or so often inaction) is also characterized by complexity with scholars identifying high levels of inter-dependence and dynamic feedback between various political economy factors active across different levels influencing NCD prevention policy decisions (1, 6, 7). This dynamic complexity however is difficult to analyze using traditional health policy process analysis methods (8). As such a systems thinking approach that considers the interaction of multiple components across different levels of a whole system, has been promoted as useful for understanding these complex problems and for informing effective governance, policy action, and program design (9-14). System science considers that an observed phenomenon, such as DR NCD prevention policy inaction (the policy are focused on in this research), emerges from the system structure where the phenomenon cannot be explained by examining parts of the system in isolation, rather the dynamic relationships between the parts are fundamental to understanding causality (15, 16).

Of the variety of systems thinking methods available, system dynamics which originally emerged out of servomechanisms engineering, has increasingly been applied to a range of complex public health problems including for example, tobacco control policies (17-19), infectious disease epidemiology (20, 21), neonatal mortality (22), and the social determinants of health (23). System dynamics aims to understand the behaviour of phenomena over time by mapping out the interactions between multiple causal factors (24). Central to the approach is the idea that it is the underlying reinforcing or opposing feedback between causal factors that explains system behaviour (15, 25). Model conceptualization in system dynamics involves visually describing the causal structure of a system problem by defining the feedback relationships between elements in causal loop diagrams (CLDs) (26) to help capture the dynamic, evolving and interconnected nature of the problem (27).

SDM methods are increasingly being used in nutrition policy research including to understand the drivers of obesity and other forms of malnutrition (3, 28, 29), inequities in healthy eating (14) and have been proposed for use in analyzing the commercial determinants of NCDs (30). However, despite increasing recognition of the system-level drivers and inhibitors of NCD prevention policy action, NCD policy *process* analysis has, to date, engaged very little with systems methods. This paper explores how a SDM approach may be a useful tool for analysing health policy processes and decisions which are inherently political and involve complex power relations (31). The primary objective was to explore the utility of using SDM for better understanding DR NCD prevention policy inaction.

2. METHODS

Adopting a formal system dynamics approach, key stakeholder interviews were used to iteratively develop and subsequently validate several CLDs representing the *DR NCD policy system*. Guidance was followed on innovative formal methods for data collection (32), model development (33)(50)(34) and model validation (50)(34) during the conceptualization phase of system dynamics modelling. Participants provided written informed consent to participate in this study. Ethical approval for this research was granted by both the University of Cape Town and the London School of Hygiene and Tropical Medicine's Research Ethics Committees.

2.1 Case study selection

South Africa was selected as a case study for this work due to a combination of political, economic and health characteristics. First, South Africa is a middle-income country (72) that underwent a rapid period of trade and investment liberalization after Apartheid ended in 1994 and remains a relatively open economy to trade and investment. Second, South Africa's geographic position and infrastructure makes it an attractive strategic hub from which ultra-processed food (UPF) corporations can develop new markets across Africa. This combined with South Africa's recognition as a regional policy leader, may mean food corporations have particular interest in securing and maintaining a favourable regulatory environment in South Africa to prevent regional and continental policy transfer. Finally, there has been significant growth in Sales of UPFs and beverages in South Africa in recent years (35) with a parallel increase in overweight and obesity amongst children and adults (36) and NCDs are a major public health concern in South Africa now accounting for 51% of all deaths annually (37). However, while the South African government has adopted a number of internationally recommended policies to promote healthy eating, a number of DR NCD prevention policies have yet to be adopted in the country and there remains significant incoherence between trade and investment policy and DR-NCD prevention objectives (38). This combination of factors allowed us to explore the dynamic complexity of how political economy mechanisms and corporate power emerging in the context of international trade and investment liberalization may inhibit DR NCD prevention policy action.

2.2 Problem articulation and system boundaries

The purpose of developing a problem definition for research of this type is to focus the research such that the system boundaries can be ascertained and to provide sufficient details such that the problem being explored is endogenously produced. This guides which key concepts and system elements (variables, links, delays and feedbacks) to be included or excluded from the CLD (15, 34). Problem definitions evolve iteratively during the research process as understanding of the problem deepens (39). In this work the initial problem

definition focused largely on how transnational corporations may use international trade and investment agreement rules to restrict policy space and generate a chilling effect on DR NCD policy over time.

Iterative development of the problem definition was informed by the findings of a realist review (6) that identified evidence of the various ways trade liberalization facilitates corporate power in NCD prevention policymaking and as a result of the model conceptualization process itself. It became apparent during the course of undertaking this work that while important, trade and investment rules were only one aspect of the ways in which trade and investment liberalization can affect NCD prevention policy action. The international trade and investment system influences various political economy factors and the associated forms of power active in NCD policymaking spaces. As such, the final problem definition reached for this research is as follows:

Trade and investment liberalization is a key component of most middle-income countries' economic development agenda. There is however growing recognition of tensions between trade and investment policies and DR NCD prevention objectives. Corporations have used their economic power to shape the international trade and investment system in their own interest, contributing to the consolidation and growth in economic power of UPF corporations, which in turn incentivizes governments to involve them and more heavily weight their interests in nutrition-relevant policy processes across sectors. Trade and investment rules may also restrict domestic policy space and provide corporations with legal tools to influence health policy decisions. Over time these inter-linked processes may create barriers to strong and coherent DR NCD policy action and entrench already weak pro-nutrition policy norms.

In this research, the system boundaries were limited to South African trade and health stakeholders' understanding of the political economy factors operating within domestic policymaking spaces to inhibit or promote domestic nutrition policy action.

2.3 Data collection

Semi-structured interviews with key decision-makers or stakeholders in the system under study can provide information about individuals' mental models based on sophisticated knowledge and experiences relating to the system problem (40) and can 'reveal causally and dynamically rich discussions' (33). This was selected as the method of data collection for this work for several reasons including relating to the highly political nature of the topic area and highly unequal power relations between stakeholders. Interviews facilitated the capture of divergent views and experiences; avoided the skewing effect of dominant stakeholders that can occur in focus groups; through offering anonymity interviews provided the best chance of 'frank and unfeigned' discussions and exposure of participants mental models (33); and were most feasible given the significant

time commitment that would have been required from time-pressured key informants to engage in group model building workshops.

Key policy actors/stakeholders with expert knowledge of or direct involvement in DR-NCD prevention agenda-setting and/or policymaking with potential relevance to trade were initially identified in a stakeholder mapping exercise undertaken with the assistance of a Department of Health (DH) employee involved in policymaking at the intersection of trade and health. Policy actors were initially selected for recruitment by purposive sampling from the stakeholder mapping and then snow-ball sampling. A total of 50 key policy actors were invited for an interview from the following stakeholder groups: Department of Health (DH), Department of Trade and Industry (DTI), Department of Agriculture, Forestry and Fisheries (DAFF), National Treasury, inter-governmental organizations (IGOs) involved in supporting nutrition policy development, non-governmental organizations (NGOs) and civil society groups (CSOs) involved in nutrition policy advocacy, academics with expertise in nutrition policy and/or the food system and food corporations. A total of 29 policy actors agreed to take part in an interview, 11 did not respond and 9 declined the invitation (see Table 8.1). Four policy actors (including both food corporation representatives) were however subsequently excluded on the grounds that they did not provide written consent to include their interviews in research publications and/or they did not provide in their interviews any relevant explanatory data needed for model building. This resulted in 24 interviews with 25 participants ultimately being included. After review it was ascertained that none of the excluded interviews provided relevant explanatory data and their exclusion would therefore not affect model development. All government participants were Chief or Deputy Directors within their respective departments with one Deputy Director General. I attempted to conduct interviews with government stakeholders in both senior technical and more political roles (including Director Generals and Ministers), however it was extremely challenging to gain access to the latter group despite repeated attempts including with assistance by a DH policymaker. Industry representatives were governance and regulatory experts; and IGO, NGO and CSO representatives had each been engaged in recent relevant DR-NCD prevention policy processes in South Africa.

Table 8.1: Summary of stakeholders involved in conceptual model-building

Stakeholder group	Key stakeholders invited to participate	Key stakeholders interviewed	Stakeholder interviews included in model conceptualization
Department of Health	13	10	10
Health Attachés for South African Embassy in Geneva or Washington DC (current or past)	6	0	0

Department of Trade and Industry	8	6	4
National treasury	3	2	2
Department of Agriculture	3	2	2
Inter-governmental organizations, non-governmental organizations and civil society organizations	6	4	4
Academics	5	3	3
Industry	5	2	0
Total	49	29	25

Each policy actor participated in a semi-structured interview lasting on average between 45-75 minutes between May and September 2019. Interviews were conducted in-person in Cape Town or Pretoria or telephonically where in-person interviews were not possible. The interview guide was structured to elicit an in-depth understanding of key policy actors' ideas, values, interests and positions in relation to nutrition and trade, investment and economic objectives; perceptions of the influences that trade and investment agreements and other trade and investment-related factors have on nutrition policy processes; and the strategic approaches adopted by stakeholders to achieve their desired nutrition or trade/economic objectives. Wherever possible 'why' and 'how' questions were used during the interviews to get at the causality that participants perceived. All interviews except one were recorded. Detailed notes were taken during the unrecorded interview. Recording were later transcribed in full and handwritten notes transferred into MS Word documents.

2.4 Data analysis

2.4.1 Individual causal loop diagram development

Data analysis was undertaken using purposive text analysis (PTA), a method that applies a grounded theory (theory generating) approach to systematically identify system variables/elements and causal statements linking one variable to another within stakeholder dialogue to inform model conceptualization (33, 34). In PTA coding is usually initially inductive/theory-building, later also employing a deductive approach as a coding frame develops during the text analysis process. However, in this work while I adopted PTA's systematic approach to identifying causal structure within stakeholder interview data, a theory-testing approach widely used by the system dynamics community (41) was also used to inform data interpretation and model conceptualization. A conceptual model for analysing different forms and mechanisms of power in health policy processes previously developed in the realist review presented in Chapter Four (6) was selected given the focus of this study.

To facilitate analysis and ensure transparency in the PTA process, for each interview transcript, all data segments describing a causal process were extracted and documented on a PTA coding chart and the cause-and-effect variables and relationships identified were documented. The cause variable, effect variable and

the polarity of the relationship was then represented in a simple words and arrow diagram (33, 34). Appendix Four provides an example of the PTA coding chart. These were then merged into causal loop diagrams (CLDs) for each participant, representing each participant's mental model of the system problem. CLDs visualize the variables/system elements, the causal relationships between them (including feedback where relevant) with an indication of their relational polarity- signifying the effect of change one variable has on another (42, 43). A number of examples of CLDs are presented in Table 8.2 below.

Stakeholders quite often described the same causal and effect relationship using different language or scenarios. As PTA and CLD development progressed, standardised concepts (system variables) were developed in an iterative process to capture these varied descriptions of the same causal phenomena in a single more generalized variable/relationship (33). As such, the variables/relationships documented on individual PTA coding charts earlier in the coding process may have been aggregated with other similarly described relationships later in the coding process and represented in the conceptual model as more generalized variables/relationships at this higher level of abstraction. At this stage, some causal relationships were also decomposed further by identifying implicit structures implied by the context (see Table 8.2 below) (33).

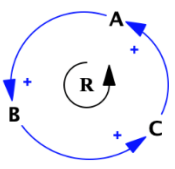
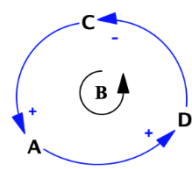
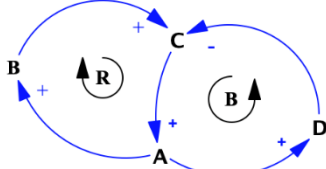
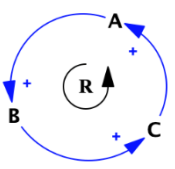
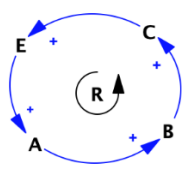
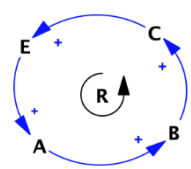
2.4.1 Shared causal loop diagram development

In stage one of this process, groups of two to four individual mental models (CLD) of participants with different perspectives on the same policy issue were established. The individual CLDs in each group were then combined to generate seven shared CLDs based on different policy issues (e.g. front of package food labelling, tax on sugar-sweetened beverages or marketing of breast milk substitutes). Each of the seven 'policy issue' CLDs then underwent 'mild pruning' (34)- keeping delays and feedback structures but removing linear linkages that it was clear would not connect to any other part of the mental model even after combination. In a second stage, the seven shared 'policy issue' mental models were then combined into a final shared mental model (SMM) for all participants (34).

Combining CLDs at each stage was conducted systematically to ensure all stakeholder perspectives were considered and valued equally (34). Combination started with the two most complex CLDs followed by addition of the next most complex CLD and so on. When two CLDs were merged and all differences were complimentary, a basic additive approach was taken (see Table 8.2 below). While the vast majority of stakeholders' different perspectives provided additive rather than conflicting views, there were rare occasions where one or more stakeholders identified a relationship that another stakeholder expressly denied. In these instances, the relationship identified by the stakeholder with the closest experience of that part of the system was considered most accurate and was reflected within the final SMM.

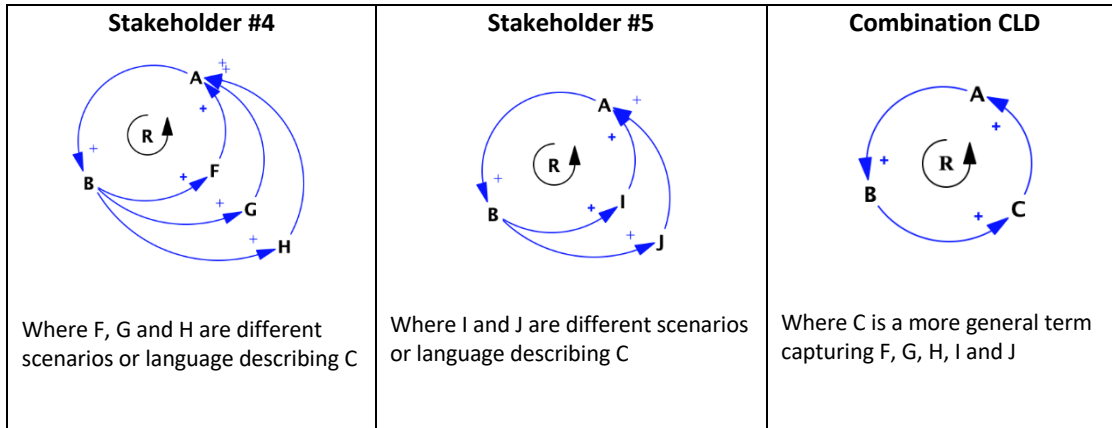
In a third stage, the SMM was simplified and generalized for improved usability. This included further pruning (34) of the SMM removing remaining linear linkages not included in feedback processes. The problem boundaries were also reviewed and any variables that fell outside of these boundaries were removed (34). An additional process of generalizing and simplifying the model structure was also undertaken where structures describing similar phenomena, but in more detail were combined into aggregate variables and relationships at a higher level of abstraction (again see table 8.2 below for an example) (33, 34). These steps were particularly important to reduce the number of variables and linkages in the model to allow for model validation and more meaningful analysis.

Table 8.2: Approaches used for causal loop diagram combination

<p>Basic addition</p> <p>When two CLDs undergoing combination are entirely complimentary, a simple additive approach (34) was adopted as illustrated below. For example, if Stakeholder #1 identifies $A \rightarrow B \rightarrow C \rightarrow A$ and Stakeholder #2 identifies $A \rightarrow D \rightarrow C \rightarrow A$, then the combined CLD would have all identified structures.</p>		
<p>Stakeholder #1</p> 	<p>Stakeholder #2</p> 	<p>Additive CLD combination</p> 
<p>Selection of most detailed CLD</p> <p>When CLD structures were not directly compatible and a judgement had to be made about which was the most accurate, the first approach taken was to select the most detailed description of the system structure (34). For example, if Stakeholder #3 identified the same causal structure as Stakeholder #1 ($A \rightarrow B \rightarrow C$) but with the inclusion of an addition of variable (E), then the more detailed causal description was included.</p>		
<p>Stakeholder #1</p> 	<p>Stakeholder #3</p> 	<p>CLD combination</p> 

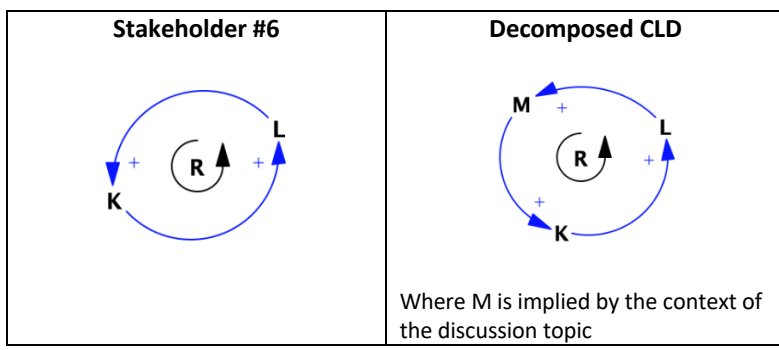
Merging and generalizing variables

In situations where stakeholders described the same phenomenon using different language or scenarios a second technique was adopted whereby variables describing different examples of the same phenomena were combined under one more generalized variable at a higher level of abstraction (33, 34). For example, if stakeholder #4 describes F, G and H and Stakeholder #5 describes I and J which are all examples of the more general term C, the CLDs are combined and simplified to $A \rightarrow B \rightarrow C \rightarrow A$.



Decomposing CLDs

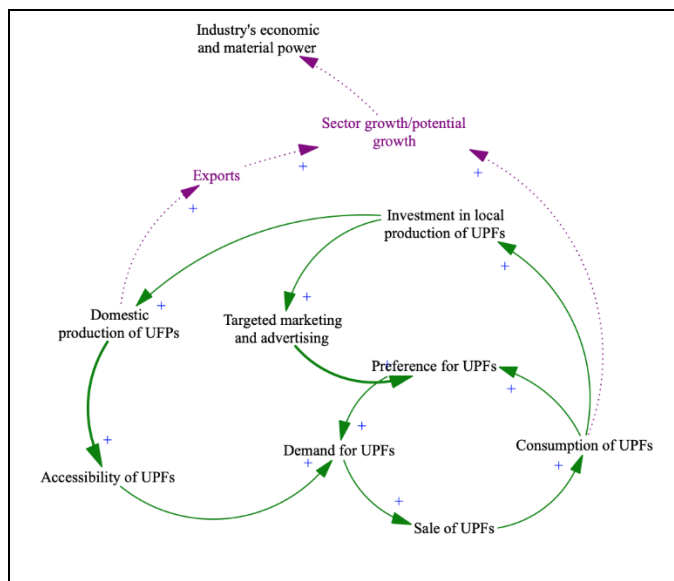
At times during initial individual CLD development and again in the final stage of shared CLD development, causal relationships were either so obvious that stakeholders did not mention them or they were somewhat more subtly implied by the context. In these instances the implied causal structure was also included in the CLD. For example if stakeholder #6 identifies $K \rightarrow L \rightarrow K$ but the obvious link to M is not mentioned, the final CLD would be $K \rightarrow L \rightarrow M \rightarrow K$. Decomposing CLDs was considered acceptable given that the same interviewee also conducted the purposive text analysis and CLD combination, which facilitated sensitivity to 'subtle nuances of, and cues to, meaning in the data' during data analysis (44).



At this stage with a deeper understanding of the interview data and broad sense of the overall system structure, it was possible to clarify certain parts of the model including feedback processes that had not initially been obvious during the PTA and identify additional structures implied by the context. This was done in an iterative process of moving from the SMM to the PTA coding charts and back. This process proved particularly important for identifying and clarifying loops which were composed of variables and linkages identified by different stakeholders and at different points in an interview with a single stakeholder.

Finally, further development of the SMM was informed by the findings of the related realist review presented in Chapter Four (6). An additional four variables and 14 linkages were identified from the review. These were initially included in the model in different colours to be reviewed for real-world relevance by stakeholders during model validation. Figure 8.1 below illustrates part of the pre-validated SMM including variables (black) and linkages (green) identified from stakeholder interviews as well as variables (purple) and linkages (dashed purple lines) identified from the realist review. The complete pre-validated SMM is presented in Appendix Five.

Figure 8.1: Exert of the pre-validated SMM



2.5 Model validation

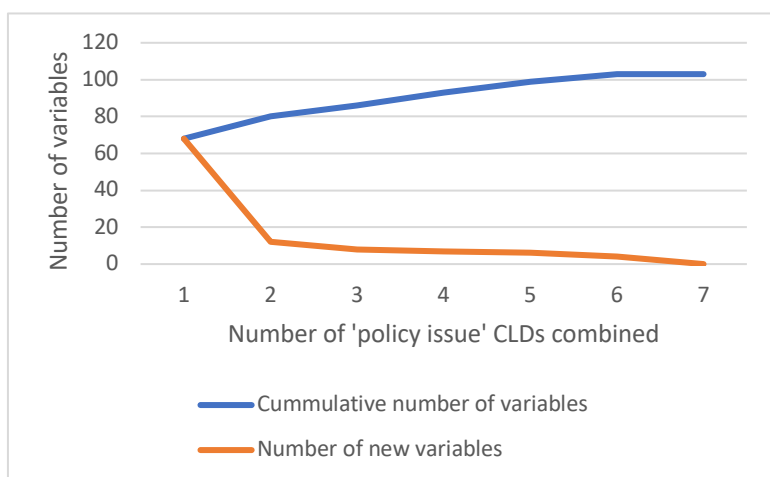
To build confidence that the SMM, as closely as possible, represented the aspects of the system that are relevant to the problem under investigation, three validity tests were applied. First, in a qualitative exercise it was assessed whether the variables identified meet the model's purpose. This was done by reviewing whether the SMM included all elements and dynamics expressed in the problem statement (34). Where

discrepancies were identified I assessed whether re-analysis of model development using interview transcripts or revision of the problem statement was necessary.

After discrepancies were resolved, the second step was to assess SMM saturation to determine whether the SMM conveyed the complete 'story' stakeholders described. This was achieved by generating saturation curves demonstrating that the addition of one or more individual mental model (CLD) did not modify the existing SMM (34). The data for these saturation curves was generated at the time of 'policy issue' CLD combination. Firstly, the most detailed CLD was selected as the 'anchor' CLD and the number of variables and links included in this CLD (A) were recorded (34). The next most detailed CLD (B) was then compared with the anchor CLD A and the number of new variables and links were recorded. The combined A+B CLD was then compared to the next most detailed CLD C, and again the count of new variables and links was generated. This process continued until all the 'policy issue' CLDs had been compared in this way (34). The variable saturation curve (Figure 8.2) and link saturation curve (Figure 8.3) were then generated from this data.

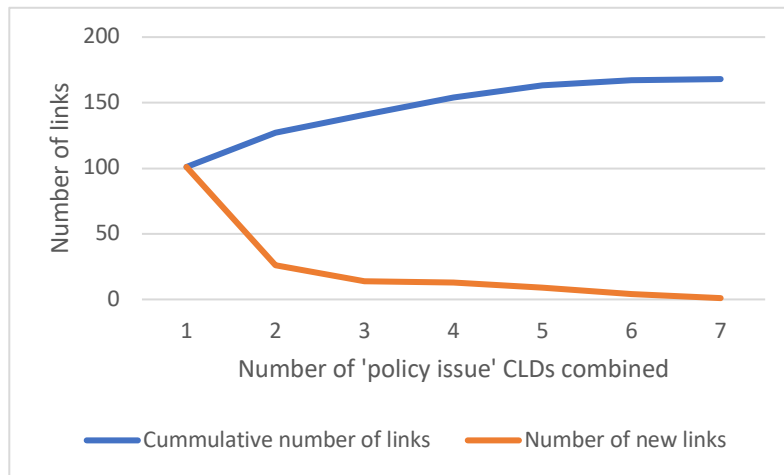
In Figure 8.2 the x-axis is the number of 'policy issue' CLDs and the y-axis is the number of variables. The blue line graphs the total number of variables with each additionally combined policy issue CLD, sorted in ascending order. The orange line graphs the new variables with each additionally combined policy issue CLD, sorted in ascending order (34).

Figure 8.2: Variable saturation curve



In Figure 8.3 the x-axis is the number of 'policy issue' CLDs and the y-axis is the number of links. The blue line graphs the total number of links with each additionally combined policy issue CLD, sorted in ascending order. The orange line graphs the new links with each additionally combined policy issue CLD, sorted in ascending order (34).

Figure 8.3: Link saturation curve



In both these graphs the curve flattens out as the final 'policy issue' CLD is combined, indicating that saturation has been reached and additional information on the system structure is unlikely to be obtained from additional interviews.

The final step was to validate the resulting SMM via 90-minute structured dialogue sessions (45, 46) with 8 key stakeholders with intimate knowledge of the system problem being examined and including representation from each of the stakeholder groups. These sessions were conducted in November 2020. Each interview focused on the model's structure, behaviour and structure–behaviour connections (46) by presenting interviewees with all relevant 'causal chunks' of the SMM along with relevant explanatory narratives for each corresponding to their area of expertise/experience (46) in a Powerpoint presentation (Appendix Eight). Participants were encouraged to question the real-world validity of the variables and feedback structures presented to them and highlight flaws or missing structures (46). Detailed notes were taken during these sessions. The validation process aimed to 'uncover flaws and hidden assumptions, challenge preconceptions, and expose assumptions for critique and improvement' (15). It also helped clarify some parts of the model structure that had not been fully understood from analysing the original interview data and provided the opportunity to ask additional probing questions regarding additional variables, linkages and loops. Particular effort was made to validate the variables and linkages added to the CLDs that had been sourced from existing literature. If these were not validated by stakeholders, they were removed. If they were validated, variables were converted to green and linkages were converted to full thickness black arrows. Once the SMM was adequately revised to address the flaws and missing structures identified by stakeholders, it was considered to be the final conceptual model (34).

3. RESULTS

Chapter Nine presents and analyses each of the sub-sections of the validated conceptual model, identifying a number of dynamic feedback processes that may be entrenching corporate power in DR NCD policymaking

in the context of trade and investment liberalization and preventing more progressive policy action. It also identifies various leverage points within the system to promote comprehensive policy action. The purpose of this paper however, was to assess the utility of using SDM for analysing the dynamic complexity of highly political health policymaking processes. As such this section reports findings relating to the unique challenges and potentially useful methodological and theoretical considerations that may increase the utility of using SDM for understanding these kinds of highly political health policymaking processes and decisions.

3.1 Methodological considerations

The first issue that surfaced during this work relates to a tension between system dynamics methods and the nature of power. This SDM work used explanatory data from interviews with system actors, recognizing that while inevitably limited, stakeholders have the best available understanding of the part of the system in which they are embedded (33). A key value of SDM is that it brings various limited system actors' mental models together to develop a more complete whole problem system model. However, for the highly political problem involving strongly competing interests and complex power relations explored in this work, it was found that stakeholder mental models may be particularly limited since parts of the system structure may be intentionally hidden from them or may be invisible to them (through mechanisms of discursive power). Moreover, while it is expected and has been observed that misperceptions and particularly failure to recognize feedback, occur in all dynamics systems (47), for problems involving feedback relating to hidden or invisible power, misperceptions and blind-spots may be particularly amplified.

A second related issue is that in order to build a model that as closely as possible reflects the real-world, the modeler must be able to, with a reasonable degree of certainty, rely on actors' full disclosure of their knowledge/mental models (33) to, as Forrester describes, 'expose the information flows and power centres in an organization' (45). Full disclosure however may not be in the best interest of powerful system actors, rather they may well seek to use their power to set the terms of analysis, limit the scope of enquiry and/or ensure certain parts of the system do not get exposed or included in model building. As Sterman points out, many stakeholders 'are not interested in learning but in using models to support conclusions they've already reached or as instruments to gain power in their organizations' and warns 'if you cannot convince them to use modelling honestly, then you [as a modeller] must quit' (15). For example, food corporation representatives, as central policy actors, were not willing to provide their knowledge of the system's causal structures and policymakers were not at liberty to discuss certain high-level decision-making processes which may have exposed key system structures. SDM of power in complex political system problems (like DR NCD policymaking) demands therefore that modelers be particularly mindful of grandstanding which may be minimized to some extent through rapport-building between the modeler and stakeholders and providing strict confidentiality assurances. However, it is more challenging to address the problem of stakeholders obfuscating or intentionally omitting known causal system structures.

To at least partly address these challenges associated with complex political system problems in which stakeholder mental models may be particularly limited due to processes of power and potential issues of non-disclosure, two methodological steps were found to be useful. First, supplementing system actor-sourced data with causal theory identified in the existing literature was useful for identifying loops not recognized or mentioned by system actors but were important parts of the system structure. Second, combining a systematic 'theory generating' (grounded theory) approach, as is employed in purposive text analysis and other qualitative SDM conceptualization methods (33)(44), with a case study 'theory testing' approach (48) using an existing theory of power in health policy making (6), was very useful. A similar combined theory generating and testing approach has been used by others in system dynamics (24, 49) and in this work assisted in making the interpretive 'leap' from the qualitative data to coding and model conceptualization and to ensure loops not explicitly recognized by the system actors, but important system structures, were captured. This work therefore supports the future use and refinement of a mixed theory-building and testing approach to model conceptualization of highly political system problems. It is however recognized that by adopting this mixed approach there is a risk that the model may be prone to distorting effects of the selected theory/heuristic being tested and potentially also the modeler's subjective assumptions about the nature of social reality, raising concern over the connection between the model and 'reality'. However, as Sterman and others have emphasized, system dynamic models are tools to assist thinking about a problem, their purpose is not to represent a singular 'objective reality' (50, 51).

A number of more general challenges in applying stakeholder interview-based system dynamic model conceptualization methods were encountered during this research. First, significant difficulty was encountered in eliciting dynamic understandings (feedback relationships) from stakeholders not familiar with systems thinking approach in an interview setting. While one approach to address this challenge may be to provide stakeholders with an initial introduction to systems thinking at the beginning of each interview, the time required to ensure stakeholders understand and are comfortable with a systems approach to thinking about a problem would likely leave little if any time for the interview itself. Alternatively, group model building workshops are a very useful way to develop stakeholders' systems thinking skills, however securing the buy-in of elite stakeholders to commit to a workshop lasting a half or entire day can be highly challenging or simply unrealistic. Additionally, for highly political problems, group model building can be dominated by more powerful stakeholders, preventing the exposure of important system structures.

Partly due to the challenge of 'pinning down' a causal structure for a complex and political human system problems, like DR NCD policymaking, PTA and CLD then model construction proved to be a highly iterative process as understanding of the problem and system structure developed during the analytical phase and concepts were combined into more generalized variables for improved model usability. This made it difficult

to maintain a direct link between the PTA coding charts and the variables and relationships included in the final model. Further, due to the described iterative nature of data analysis and model construction, as well as the very large number of variables and linkages it was not possible to develop a data source reference table that records the links between each causal relation within the conceptual model and their data sources in the interview transcripts. I accept that these issues may raise concerns about the transparency of the model-building process. Additionally, PTA and model building was a highly time-consuming processes which can pose a challenge for modelers constrained to working within short funding periods.

Model validation also posed a number of challenges. First, there was a clear tension between the time required to explain and discuss the system dynamics model and the time elite stakeholders involved in policymaking had available to engage in model validation which ranged from 45 – 90 minutes. To optimize the time available, model validation was facilitated by presenting narratives relating to ‘causal chunks’ within the model rather than the model in its entirety (52). Following up with stakeholders a third time when necessary and possible was also very useful. Additionally, spending more time on presenting the SDM approach during model validation sessions may have been useful, but this would have left less time for discussion of the model itself. After interrogating specific aspects of the model, suggesting additional structures and making a small number of corrections, stakeholders were though able to validate the model structure based on their own experiences and understanding.

While formal evaluation of stakeholder’s perceptions of the utility of the SDM approach was outside the scope of this research, a small number of stakeholders reported the approach was helpful. One economic policymaker for example, reflected in light of the findings that health should be considered more of a cross-cutting issue needing consideration across government departments and policymaking structures. Others reported however that the model was too complex to follow and as busy policymakers they needed short, simple, clear and direct information.

3.2 Theoretical considerations

In future work, to increase recognition of the identified issues of limited mental models and stakeholder non-disclosure that may arise from the complex power dynamics and relations within policymaking (and other highly political systems) and promote the use of methods to account for them, system dynamics may benefit from drawing on critical system theory (CST). CST encourages modelers to recognize the ‘false consciousness’ of system actors- the subjective explanations offered by system actors of their perceptions of the system, ‘that includes not only their knowledge but also their self-deception, self-censorship, induced both by their perceptions of the power relationships between themselves and others and their perceptions about consequences of conforming or breaking with expected behaviour or opinion’ (51). Recognising ‘false consciousness’ may assist system modellers to develop and adopt methods that more strongly encourage

self-reflection by system actors to identify and challenge underlying 'normative' assumptions (and other mechanisms of discursive power) behind commonly accepted explanations for policy decisions (51).

In using a mixed theory generating/testing approach, some complementarities between system dynamics and power theory were also identified that tentatively support the utility of using system dynamics analyses within a power theory (or other related) perspective to extend the utility of SDM for understanding highly political complex social system problems. Both system dynamics and power theory emphasise the importance of structure in shaping behaviour but also how structure is generally a hidden driver of decisions or actions (6, 53-55). Both also attempt to draw connections between the micro and the macro. In system dynamics the goal is to explain how 'macro-behavior arises from micro-level decision making' (56). Power theory also integrates multiple levels of analysis given that instrumental (visible) power exists between individuals or groups of individuals, structural (hidden) power operates at the institutional level and discursive (invisible) power usually at the societal level (6, 54). Both theories of power and system dynamics share affinities with Giddens's structuration theory that proposes human's shape the institutions/structures of social systems, while social systems simultaneously shape human behaviour (16, 55, 57). Invisible power emerges not only through active intent of powerful actors, but can also be generated from the socio-political system itself (57, 58). A central tenet of system dynamics is that decision-makers are elements within the system, not just operated on by the system (55).

System dynamics focuses on how decisions or policy affect system behaviour but has traditionally paid limited attention to the 'genesis' of policies (55). At least since Morecroft (1981), system dynamicists have adopted a bounded rationality perspective – that humans make rational decisions in their own interest based on the information they have, but may lack information on more distal parts of the system or how their actions may effect it, and as such tend not to see the whole range of possibilities available (59, 60). However, power theory offers a much richer perspective on why decisions are made including via visible, hidden and invisible mechanisms (53, 54, 58). I suggest therefore that drawing on power theory may encourage system dynamicists to embrace Giddens 'duality of structure' theory (57) extending the scope of analysis from how decisions affect system behaviour to also considering how feedback processes in human systems shape decision-making; and to recognise that not only *which* decisions are made but also *how* they are made, can be critical to system change.

Further, for highly political problems when stakeholder obfuscation is likely, power theory can assist in both the data collection and analytical phases of SDM by guiding system modelers to ask probing questions that may reveal the underlying mechanisms of how decisions are made and to make sense of the data during analysis. For example, drawing on the power theory applied in this work, invisible (or discursive) power involves mechanisms that control stakeholders' interpretation and perception of issues such that significant

problems and potential solutions (policy options) are held out of the minds of the different players involved, including those who gain to benefit from such solutions (6, 54). While system dynamics has long recognised the importance of interpretation in shaping decision-making- this is the domain of mental models in system dynamics (45) – power theory (as well as structuration theory) also emphasises how mental models themselves are shaped by system actors (e.g. via use of narratives and issue framing) and structure (e.g., processes of socialization and internalization). Norms are also considered to play a role in decision-making in system dynamics (55), but power theory extends the focus to also include how decision-making norms develop by way of socialisation and internalization (54). Combining the two perspectives in system dynamics terms, it could be said that norms shape actor’ decisions and in turn actors’ decisions reinforce or diminish norms over time. Examples of this are illustrated in the conceptual model for both neoliberal and pro-nutrition policymaking norms.

Also linked to the concept of discursive power, system dynamics does recognize the critical importance of pervasive shared ideas in society, referred to by Meadows as ‘paradigms’ (59). In system dynamics paradigms are considered the source of system structure and changing paradigms is ranked as the second-highest leverage point in any system, below transcending them (59). System modellers suggest that changing paradigms can be achieved ‘by building a model of the system, which takes us outside of the system and forces us to see it as a whole’ (59). But this perspective fails to account for those who have powerful vested interests in the system remaining as it is and therefore also in using various mechanisms of power to perpetuate existing ideologies or paradigms. Applying power theory to system dynamics, may therefore offer additional strategic insights into how to drive paradigm or ideological change.

4. DISCUSSION AND CONCLUSIONS

While a number of challenges were encountered in conducting this study, overall, several key strengths of the SDM approach were identified as a new way of thinking about and understanding highly political health policy processes and (non)-decisions. SDM allows for the organization of complex information of the whole problem system visualising the inter-connectedness between the political economy factors constituting the various mechanisms of power that have generated unhealthy food systems and barriers to effective and comprehensive DR NCD policy action. It also provides explanatory insight into the feedback processes that perpetuate and entrench existing relations of power over time, maintaining these barriers to policy action. Importantly, SDM offers a methodological approach that shifts the focus from individual policymaker ‘political will’ towards understanding how policy inaction is shaped by the system of political economy and power which policymakers act within and on.

Recognizing that complex system structures shape policymakers' behaviour does not mean they are unaccountable or without autonomy within the system (59). Rather, it provides an analytical tool to assist pro-public health policy actors to focus efforts on redesigning the system in a way that addresses different forms of power to promote nutrition policy action and coherence (27). By explicitly focusing on feedback relationships, qualitative SDM can be used for identifying key leverage points within the system (as shown in Chapter Nine) which may shift the existing power dynamics to facilitate greater political commitment for healthy, equitable and sustainable food system transformation as well as providing deeper understanding of strategies identified through more traditional health policy analysis method, including providing insight into their mechanism of action and how they may affect more distal elements of the system. Finally, involving stakeholders in the modeling process may facilitate different policy actors – who may not otherwise consider their work of particular relevance to nutrition and NCDs – to see their part in the problem system, representing a possible starting point for building consensus for action (61). I hope that this early attempt at using system dynamics for understanding highly political health policy processes and (non)-decisions sparks reflection, healthy debate and assists further application of these methods not only to understand how health policy decisions affect system behaviour but also for understanding why policy decisions are made.

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RESEARCH PAPER COVER SHEET

Please note that a cover sheet must be completed for each research paper included within a thesis.

SECTION A – Student Details

Student ID Number	1602951	Title	Dr
First Name(s)	Penelope		
Surname/Family Name	Milsom		
Thesis Title	International trade and investment liberalization, corporate power and non-communicable disease prevention policy: A case study of nutrition and alcohol policy non-decisions in South Africa		
Primary Supervisor	Helen Walls		

If the Research Paper has previously been published please complete Section B, if not please move to Section C.

SECTION B – Paper already published

Where was the work published?			
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Where is the work intended to be published?	Food Policy
Please list the paper's authors in the intended authorship order:	P Milsom, A Tomoiaia-Cotisel, R Smith, SM Modisenyane, H Walls

Stage of publication	Submitted
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SECTION D – Multi-authored work

<p>For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)</p>	<p>I conceptualized the research topic and aim, developed the methodology, collected the data (conducted the key informant interviews), conducted the formal analysis including purposive text analysis, model construction and validation. I wrote the original draft, and undertook revisions/edits of the draft to generate the final manuscript.</p>
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SECTION E

Student Signature	[Redacted]
Date	12/05/2021

Supervisor Signature	[Redacted]
Date	14 May 2021

CHAPTER NINE: UNDERSTANDING THE DYNAMIC COMPLEXITY OF CORPORATE POWER IN DIET-RELATED NON-COMMUNICABLE DISEASE PREVENTION POLICYMAKING: A CASE STUDY OF SOUTH AFRICA

CHAPTER OVERVIEW

In Chapter Eight I presented in detail the systems dynamics methodological approach taken in this work and discussed a number of both methodological and theoretical considerations that overall indicated significant utility in using these methods for expanding my understanding of corporate power in diet-related NCD prevention policymaking in the context of trade and investment liberalization. Here in Chapter Nine, I present the conceptual model of the Diet-related (DR) NCD ‘policymaking system’ that resulted from this analyse based on interviews with 25 stakeholders. The model illustrates several dynamic processes (involving political economy factors and mechanisms of corporate power) that contribute to driving DR NCD prevention policy inaction in South Africa. A systems thinking approach is then used to identify key leverage points in the ‘policymaking system’ to facilitate greater political commitment for healthy food system transformation and outlines their potential system-level impacts.

This paper has been submitted for publication in Food Policy and is currently under review by the editors. For purposes of this thesis, changes have been made to table and figure numbering and reference back to previous thesis chapters have been added where appropriate.

ABSTRACT

Background: Despite increasing recognition of the causal complexity of food policy inaction, the use of systems methods (designed to manage such complexity) remain very limited in food policy analyses. The aim of this study therefore was to use system dynamics modelling methods to analyse the persistent problem of diet-related non-communicable disease (DR NCD) prevention policy inaction due to political economy mechanisms and corporate power emerging in the context of international trade and investment liberalization in South Africa and to identify key leverage points in the system to facilitate greater political commitment for healthy food system transformation.

Methods: Twenty-four interviews were conducted with 25 key policy actors. These were analysed using purposive text analysis. A mixed theory-building and theory-testing approach was adopted. Individual and combined casual loop diagrams were developed to generate a shared mental model representing the whole DR NCD policy system. Additional key variables/linkages identified from the literature were also included to the model. The model was validated in several steps including reviewing it against the problem statement, ensuring concept saturation had been reached and through validation interviews with key stakeholders.

Findings: Reinforcing processes linked to trade and investment liberalization contribute to increased consumption of ultra-processed foods as well as increased economic power of large food corporations. This gives them significant leverage to lobby for more favourable trade and investment arrangements, further expanding their economic power. Corporate economic power also leads to various feedback processes that entrench corporate influence over DR NCD prevention policy agenda-setting and decision-making, limit stakeholders' ideational boundaries of conceivable policy solutions, and weaken pro-nutrition policy norms over time.

Conclusions: This work develops a conceptual model representing DR NCD policy inaction due to political economy mechanisms and corporate power emerging in the context of international trade and investment liberalization. By explicitly focusing on feedback relationships, qualitative system dynamic modelling can be used for identifying key leverage points within the system which may shift the existing power dynamics to facilitate greater political commitment for healthy, equitable and sustainable food system transformation.

1. INTRODUCTION

Unhealthy diets are a key driver of the rapid rise in obesity and DR NCDs worldwide (1, 2), particularly in middle-income countries undergoing rapid economic development, urbanization, and motorization (3, 4). The 'nutrition transition' towards unhealthy diets, characterized by the increased consumption of foods high in fat and sweeteners (found in refined and ultra-processed foods and animal products) has been observed globally, including in most low- and middle-income countries (3, 5) and is the result of people responding normally to obesogenic environments (6). Under an economic paradigm promoting consumption-based growth for financially-defined prosperity, governments and industry are motivated to achieve greater global market integration, including via trade and investment liberalization and deregulation (7). Global market integration and technological developments have motivated a shift towards producing large volumes of processed foods with long shelf lives due to their tradability, promoting foreign direct investment by transnational corporations into food processing and retailing and facilitating intensive global food marketing and advertising (7-10). These mechanisms interact to generate the supply and consumption of increasing volumes and varieties of inexpensive, palatable, energy-dense foods, referred to in this paper as ultra-processed foods (UPFs) (4).

As consumption of UPFs increases, ensuring equitable access to healthy food and preventing DR NCDs has been recognized as critical to achieving sustainable development (6). This is reflected in the Declaration of the United Nations Decade of Action on Nutrition 2016-2025 and the 2018 UN Political Declaration on Prevention and Control of NCDs; and the inclusion of both nutrition and NCD targets within the Sustainable Development Goals. To achieve these targets, there have been repeated calls for government leadership and policy action that moves beyond abdicating responsibility for unhealthy eating to individuals and towards addressing the multiple food system drivers that create obesogenic food environments, including in agriculture, trade, investment, public policy and marketing (6, 7, 11-13). Various frameworks and guidelines exist to inform such action (12-14). These include actions targeting the food supply (e.g., removing sugar subsidies, agricultural policies that incorporate health outcomes and public procurement through 'short chains') and the food environment (e.g., taxes and import tariffs, healthier product reformulation, food standards in public institutions, banning unhealthy food marketing to children, targeted subsidies and food labelling) (4, 14).

However, the vast majority of governments have failed to translate these frameworks into policy action that adequately addresses the food system drivers of unhealthy diets, obesity and DR NCDs (4). As such, while a few countries have made progress on under-five obesity, the vast majority are off-track for meeting adult obesity and DR NCD targets by 2025 (15). Lack of political will and corporate influence have been identified as two key reasons for policy inaction (6, 16, 17). A small but growing body of public health policy literature

seeking to explain these factors explores how political economy factors, including political and economic actors, interests, institutions and ideas, interact to limit political will and enhance corporate influence over DR NCD prevention policy (8, 16-22). In line with a call for greater consideration of power in policymaking, more explicit analyses of how political economy factors shape power relations and inequities in DR NCD policy processes and decisions are also emerging (20, 23, 24). For example, we recently explored how corporations can exercise and benefit from different forms of power (instrumental, structural and discursive) via various mechanisms (e.g. ideas, evidence, and institutions) to promote NCD prevention policy inaction at the nexus of trade and health (20).

The inter-dependence and dynamic feedback among the multiple political economy factors and different forms and relations of power influencing DR NCD policy action/inaction, have been recognised in the literature (16, 20, 24). For example, international trade and investment liberalization has incentivized governments to promote, and producers to deliver, large volumes of commodities for export/use in global supply chains. The multinational agribusiness firms that have thrived under these conditions have in turn acted to maintain them, for example, by using the economic power gained for lobbying policymakers to adopt trade policy that bring them financial benefit (25) but reduce nutrition policy space. The dynamic complexity of such processes is difficult to manage and analyze using conceptual approaches and methods traditionally used in health policy process analysis (26). As such there has been growing interest in a systems approach, where policy action/inaction is understood as emerging from the dynamics of a wider political economy system (6, 24). However, application of systems methods in this research area remain very limited; just one study has used system dynamics modelling (SDM) to explore political commitment to ending malnutrition and how factors shaping nutrition actor network effectiveness can be strengthened (18).

A systems thinking approach facilitates the organization of complex information with a focus on the whole system (27) and the analysis of the dynamic relationship between components across multiple levels of that system (28). System dynamics offers one of the most sophisticated systems thinking methods available. System dynamics proposes that, despite the real world exhibiting a high degree of complexity, it is possible to capture that complexity in a model which can be used to better understand, analyze and predict dynamic real world behaviour (29-31). SDM allows for the consideration of nonlinear relationships between variables, feedback, time delays, stocks and flows and emergent effects and patterns (32). It includes visually describing the causal structure of a system problem by defining the feedback relationships between elements in causal loop diagrams (CLDs) (33) to help capture the dynamic, evolving and interconnected nature of the problem (32).

This paper applies a SDM approach to analyse the dynamic complexity of the persistent problem of DR NCD policy inaction due to political economy mechanisms and corporate power emerging in the context of

international trade and investment liberalization. Using South Africa as a case study, several CLDs are developed describing the DR NCD policymaking system, which are then used to deepen understanding of the dynamic processes that can entrench DR NCD policy inaction and to identify key leverage points in the system which may shift the existing power dynamics to facilitate greater political commitment for healthy, equitable and sustainable food system transformation.

2. METHODS

Adopting a formal system dynamics approach, this study uses key stakeholder interviews to iteratively develop and subsequently validate several CLDs representing the *DR NCD policy system*. Participants provided written informed consent to participate in this study. Ethical approval for this research was granted by both the University of Cape Town's Human Research Ethics Committee and the London School of Hygiene and Tropical Medicine's Research Ethics Committee.

2.1 Case study selection

South Africa was selected as a case study for this work due to a combination of political, economic and health characteristics. Firstly, South Africa is a middle-income country (72) that underwent a rapid period of trade and investment liberalization after Apartheid ended in 1994 and remains a relatively open economy to trade and investment. Secondly, South Africa's geographic position and infrastructure makes it an attractive strategic hub from which UPF corporations can develop new markets across Africa. This combined with South Africa's recognition as a regional policy leader, may mean food corporations have particular interest in securing and maintaining a favourable regulatory environment in South Africa to prevent regional and continental policy transfer. Finally, there has been significant growth in Sales of UPFs and beverages in South Africa in recent years (35) with a parallel increase in overweight and obesity amongst children and adults (36) and NCDs are a major public health concern in South Africa now accounting for 51% of all deaths annually (37). However, while South African government has adopted a number of internationally recommended policies to promote healthy eating, a number of DR NCD prevention policies have yet to be adopted in the country and there remains significant incoherence between trade and investment policy and DR-nutrition objectives (38). This combination of factors allowed us to explore the dynamic complexity of how political economy mechanisms and corporate power emerging in the context of international trade and investment liberalization may inhibit DR NCD policy action.

2.2 Problem articulation and system boundaries

A problem definition is developed for purposes of focusing the research such that the system boundaries can be delineated and to ensure that sufficient details are included within these boundaries are such that the

problem being explored is endogenously produced. The problem definition is then used to guide which concepts and system elements (variables, links, delays and feedbacks) to be included or excluded from the CLD (34, 35).

The problem definition was developed iteratively and informed by the findings of the realist review on the influence of trade liberalization on NCD policy action (20) and by learning during the modelling process itself. The final problem definition reached for this research is as follows:

Trade and investment liberalization is a key component of most middle-income countries' economic development agenda. There is however growing recognition of tensions between trade and investment policies and DR NCD prevention objectives. Corporations have used their economic power to shape the international trade and investment system in their own interest, contributing to the consolidation and growth in economic power of UPF corporations, which in turn incentivizes governments to involve them and more heavily weight their interests in nutrition-relevant policy processes across sectors. Trade and investment rules may also restrict domestic policy space and provide corporations with legal tools to influence health policy decisions. Over time these inter-linked processes may create barriers to strong and coherent DR NCD policy action and entrench already weak pro-nutrition policy norms.

The system boundaries were limited to South African trade and DR NCD prevention policy actors' understanding of the political economy factors operating within domestic policymaking spaces to inhibit or promote domestic DR NCD prevention policy action.

2.3 Data collection

Semi-structured interviews were selected as the method of data collection for this work for several reasons relating to the highly political nature of the topic area, highly unequal power relations between different policy actors and constraints on policy actors' time (these are each discussed in more detail in Chapter Eight). A stakeholder mapping exercise was initially undertaken to identify key DR NCD prevention policy actors with the assistance of a Department of Health (DH) policymaker working at the intersection of trade and health policymaking. Policy actors were selected purposively from the stakeholder mapping and then snow-ball sampling. Fifty key policy actors were invited for an interview from the following stakeholder groups: Department of Health (DH), Department of Trade and Industry (DTI), Department of Agriculture, Forestry and Fisheries (DAFF), National Treasury, inter-governmental organizations (IGOs), non-governmental organizations (NGOs) involved in supporting nutrition policy development, civil society groups (CSOs) involved in nutrition policy advocacy, academics with expertise in nutrition policy and/or the food system and food corporations. Twenty-nine policy actors agreed to take part in an interview, 13 did not respond and 10 declined the invitation (see Table 9.1). Four policy actors (including both industry representatives) were

however subsequently excluded since they did not provide written consent for their interviews to be included in research publications and/or did not provide in their interviews any explanatory data relevant for model building. This resulted in 24 interviews with 25 participants ultimately being included (see Table 9.1). Notably, given none of the excluded interviews contained explanatory data, model development was not affected.

All government participants were Chief or Deputy Directors within their respective departments with one Deputy Director General. While significant attempts were made to conduct interviews with government stakeholders in both senior technical and more political roles (including Director Generals and Ministers), it was extremely challenging to gain access to the latter group. Industry representatives were governance and regulatory experts; and IGO, NGO and CSO representatives had each been engaged in recent relevant nutrition policy processes in South Africa.

Table 9.1: Summary of stakeholders involved in conceptual model-building

Stakeholder group	Key stakeholders invited to participate	Key stakeholders interviewed	Stakeholder interviews included in model conceptualization
Department of Health	13	10	10
Health Attachés for South African Embassy in Geneva or Washington DC (current or past)	6	0	0
Department of Trade and Industry	8	6	4
National treasury	3	2	2
Department of Agriculture	3	2	2
NGOs/CSOs/IGOs	6	4	4
Academics	5	3	3
Industry	5	2	0
Total	49	29	25

Each policy actor participated in a semi-structured interview lasting on average between 45-75 minutes between May and September 2019. Interviews were conducted in-person in Cape Town or Pretoria or telephonically where in-person interviews were not possible. The interview guide was structured to elicit an in-depth understanding of key policy actors' ideas, values, interests and positions in relation to nutrition and trade, investment and economic objectives; perceptions of the influences that trade and investment agreements and other trade and investment-related factors have on nutrition policy processes; and the strategic approaches adopted by stakeholders to achieve their desired nutrition or trade/economic objectives. Wherever possibly 'why' and 'how' questions were used during the interviews to get at the

causality that participants perceived. All interviews were recorded and later transcribed in full and handwritten notes transferred into Microsoft Word documents.

2.4 Data analysis

2.4.1 Individual causal loop diagram development

Data analysis was undertaken using purposive text analysis (PTA) to systematically identify causal statements from which linkages between system variables/elements could be identified to inform model conceptualization (34, 36). In PTA coding is initially inductive, later also employing a deductive approach as a coding index develops during the text analysis process. Data interpretation and model conceptualization was also informed by a conceptual model for analysing different forms and mechanisms of power in health policy processes previously developed and tested in a related realist review (20).

For each interview transcript all data segments describing a causal process were extracted and documented on a PTA coding chart and the cause-and-effect variables and relationships identified were documented. The cause variable, effect variable and the polarity of the relationship was then represented in a simple words and arrow diagram (See Appendix Four) (34, 36). These were then merged into causal loop diagrams (CLDs) for each participant, representing each participant's mental model of the system problem. CLDs illustrate the system variables, the causal relationships between them (including feedback where relevant) with an indication of their relational polarity- signifying the effect of change one variable has on another (37, 38).

As PTA and CLD development progressed, standardised system variables were developed in an iterative process to include varied descriptions of the same causal phenomena by different policy actors in a single more generalized variable/relationship (36). Some causal relationships were also decomposed further by identifying implicit structures implied by the context (see Table 8.2 in Chapter Eight for examples of merging and generalizing variables and decomposing CLDs) (36).

2.4.2 Shared causal loop diagram development

First, groups of two to four individual mental models (CLD) of participants with different perspectives on the same policy issue were composed. The individual CLDs in each group were then combined to generate seven shared CLDs based on different policy issues (e.g., front of package food labelling, tax on sugar-sweetened beverages or marketing of breast milk substitutes). The seven 'policy issue' CLDs (34) were then 'pruned', keeping delays and feedback structures but removing linear linkages. In a second step, these seven shared 'policy issue' mental models were then combined to form a final shared mental model (SMM) for all participants (34).

Combination started with the two most complex CLDs followed by addition of the next most complex CLD and so on. When two CLDs were merged and all differences were complimentary, a basic additive approach was taken (see Chapter Eight, Table 8.2). While the vast majority of stakeholders' different perspectives provided additive rather than conflicting views, there were rare occasions where one or more stakeholders identified a relationship that another stakeholder expressly denied. In these instances, the relationship identified by the stakeholder with the closest experience of that part of the system was considered most accurate and was reflected within the final SMM. Details of the systematic approach taken to CLD combination are provided in Chapter Eight.

In a third step, the SMM was simplified and generalized for improved usability. This involved additional pruning (34) of the SMM to remove remaining linear linkages. The problem boundaries were also reviewed and any variables that fell outside of these boundaries were removed (34). A further process of generalizing and simplifying the model structure was also undertaken where again structures describing similar phenomena, but in more detail were aggregated into variables and relationships at a higher level of abstraction (see Chapter Eight, Table 8.2) (34, 36).

Now with a more detailed understanding of the interview data and broad sense of the overall system structure, it was possible to clarify certain parts of the model including feedback processes that had not initially been obvious during the PTA and additional structures implied by the context. This was done iterative moving from the SMM to the PTA coding charts and back.

Finally, the findings of a related realist review (20) were used to further develop the shared mental model, identifying an additional four variables and 14 linkages. These were initially included in the model in different colours (see Figure 8.1 in Chapter Eight and Appendix Five) to be reviewed for real-world relevance by stakeholders during model validation.

2.5 Model validation

Three validity tests were applied to build confidence that the SMM, as closely as possible, represented the aspects of the system that are relevant to the problem under study. First, to assess whether the variables identified meet the model's purpose, the SMM was reviewed to confirm that it included all elements and dynamics expressed in the problem statement (34). Where discrepancies were identified the modeler assessed whether re-analysis of model development using interview transcripts or revision of the problem statement was necessary.

After discrepancies were resolved, the second step was to check whether the SMM likely conveyed the complete 'story' of the problems as described by stakeholders. This was achieved by assessing concept saturation using saturation curves to demonstrate that the addition of one or more individual mental model (CLD) did not modify the existing SMM (34). As CLDs were combined, newly added variables and relationships were recorded and saturation curves (see Figures 8.2 and 8.3 in Chapter Eight) were constructed and reviewed for saturation. The curves tended to flatten towards the end of 'policy issue' CLD combination, indicating no new concepts were emerging and therefore additional interviews from within the stakeholder groups were not likely to produce additional information on the system structure.

The final step was to validate the resulting SMM via 90-minute structured dialogue sessions (29, 39) with eight key stakeholders (including representation from each of the stakeholder groups) who were known to have intimate knowledge of the system problem being examined. These sessions were conducted in November 2020. Each interview focused on presenting and discussing the model's structure, behaviour and structure-behaviour connections (39). Participants were encouraged to question the real-world validity of the variables and feedback structures presented to them (particularly those added from the literature) and highlight flaws or missing structures (39). Detailed notes were taken during these sessions. Model structures not validated by stakeholders were removed and some parts that had not been fully understood from analysing the original interview data were clarified. Once the SMM was adequately revised to address the flaws and missing structures identified by stakeholders, it was considered to be the final conceptual model (34). Appendix Five presents the pre-validated SMM and outlines the changes made in the final conceptual model as a result of model validation.

3. RESULTS

The final conceptual model included multiple highly inter-related political economy factors and mechanisms of power that inhibit (or promote) DR NCD policy action according to model-building participants' knowledge and experience. Several feedback loops were identified during model development and are the focus of this analysis since it is feedback that generates the dynamics which drive system behaviour (32). In reinforcing loops, change of a variable in one direction triggers a chain of effects that ultimately result in more change of the original variable in the same direction. Depending on the desired outcome, reinforcing loops may either be 'vicious' or 'virtuous'. In contrast, balancing loops are stabilizing feedback structures that regulate the effects of changes imposed on the system (40). Within a system, feedback loops are usually linked together and of varying strengths, pulling variables in different directions- either growing them, depleting them or trying to bring them into a balanced state. The non-linearity of relationships in complex systems produces a shifting dominance of feedback loops generating various complex system behaviours (40).

Three sub-sections of the complete conceptual model of 'DR NCD policymaking' emerged through the model development process. These are I) Trade and investment liberalization, corporate economic/material power and NCDs; II) Instrumental power and III) Structural and discursive power. This ordering of sub-systems was selected since Sub-system I has a primary role in generating the DR NCD policy problem, Sub-system II is focused on policy processes and decisions in response to the DR NCD problem, and sub-system III illustrates the broader policymaking environment relevant to DR NCDs. There is a degree of cross-over between the sub-sections reflecting the challenge in disentangling different forms of power, however dividing the conceptual model in this way facilitated communication of the model.

3.1 Sub-system I: Trade and investment liberalization, corporate economic power and the DR NCD policy problem

Sub-system I (see Figure 9.1 below and the key in Table 9.2 on the following page) models stakeholders' understanding of the dynamics of trade and investment liberalization, the economic power of food corporations and DR NCDs. The relationships in this sub-system were, overall, less frequently described and understood by stakeholders than the relationships included in sub-system II and III.

Figure 9.1: Sub-system I: Trade and investment liberalization, corporate economic power and the DR NCD policy problem

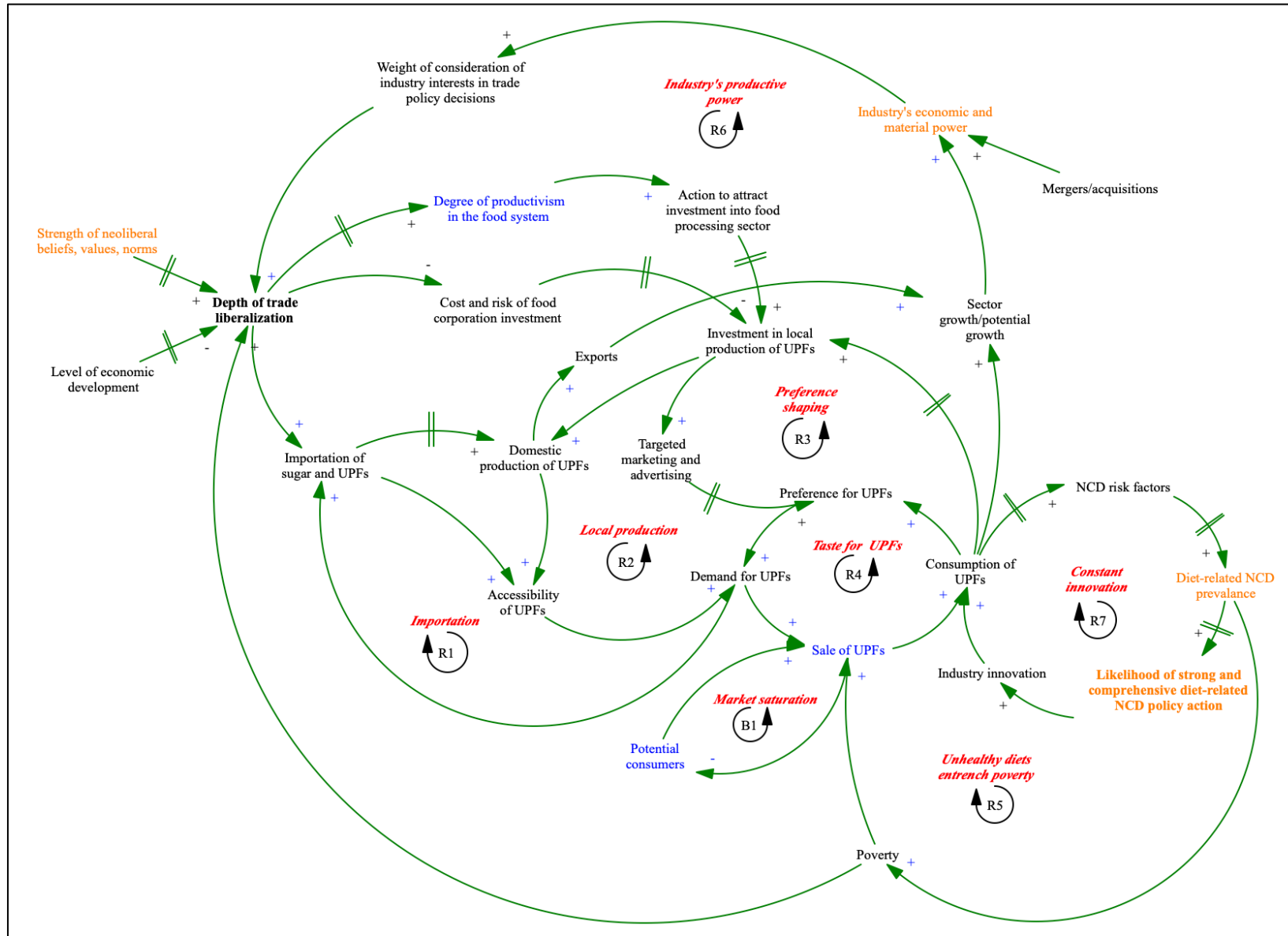








Table 9.2: Key for all sub-systems

Arrows indicate the direction of the influence	
Positive polarity indicates that the influencing variable and the receiving variable change in the same direction	
Negative polarity indicates the receiving variable changes in the opposite direction of the influencing variable	
Delay between cause and effect	
Variables linking to two other sub-systems are orange	Variable A
variables linking to one other sub-system are blue	Variable B
variables only within one sub-system are black	Variable C
Names of feedback loops are in red	Feedback loop
<i>Reinforcing loop</i>	
Balancing loop	

A number of stakeholders identified that since the end of Apartheid, South Africa had adopted an approach to policymaking that focused on achieving economic growth through market-oriented reform, including trade and investment liberalization to gain access to foreign markets for South African companies and products. Liberalization tends to incentivize the government to adopt policy that promotes production of foods with added value (in terms of profit) through processing (e.g. milk as a basic food has less value in terms of profit than ice cream or infant formulas) and high exportability (desirable taste, easily modifiable to local regulations and have long shelf lives). Trade and investment liberalization was also perceived to lower the risk and cost of investment in food processing in South Africa. Together these factors were thought to promote investment into the food processing sector, increasing the local production of UPFs for both local sale and export.

Seven reinforcing feedback loops and one balancing loop were identified in this sub-system. R1-R4 reflect the reinforcing causal loops contributing to increased rates of consumption of UPFs over time in South Africa, in line with a recent quantitative analysis reporting significant increase in rates of apparent consumption of UPFs and ultra-processed beverages in South Africa from 2006-2019 (8). R1 indicates importation of UPFs driven by trade liberalization, increases the accessibility (availability and affordability) of UPFs leading to increased demand, sales and consumption of UPFs driving further UPF importation and, over time, increasing DR NCD risk exposure and prevalence. This is supported by findings that between 1995 and 2010 imports into South Africa of soft drinks and processed snack foods increased by 92% and 83% respectively which is likely to reflect the adoption of the South African EU Free Trade Agreement in 1999 which substantially increased imports into South Africa (41, 42).

There has also been a substantial associated increase in NCDs in South Africa in recent decades with NCDs now accounting for 51% of all deaths annually (43). R2 illustrates that local production of UPFs also increases their accessibility, increasing demand, sales and consumption, prompting further investment in UPF production. R3 shows how investment in food processing also drives investment in targeted product marketing which was identified as highly effective in shaping consumer preference and demand for UPFs, ultimately promoting greater investment in the sector. Finally, R4 illustrates stakeholders' perception that due to the desirable taste of UPFs with added sweeteners, fats and/or salt, consumption itself tends to drive further demand. B1 represents a balancing domestic market saturation loop which provides a counter-force to the reinforcing feedback loops R1-4. When the local South African market for UPFs has become tight or near saturation (B1), food processing corporations have turned to export markets to support ongoing growth. Two of South Africa's largest food manufacturers, Pioneer Foods and Tiger Brands for example, currently export globally to 80 and 33 countries, respectively (44).

Notably, stakeholders commented that due to marketing specifically targeting the poor and the high accessibility (low cost and availability) of UPFs compared to healthy alternatives, consumption was highest amongst South Africa's poor, further driving health inequities in the country. R5 reflects stakeholders' understanding of the vicious cycle of poverty, unhealthy diets and DR NCDs which, in turn, further entrenches poverty.

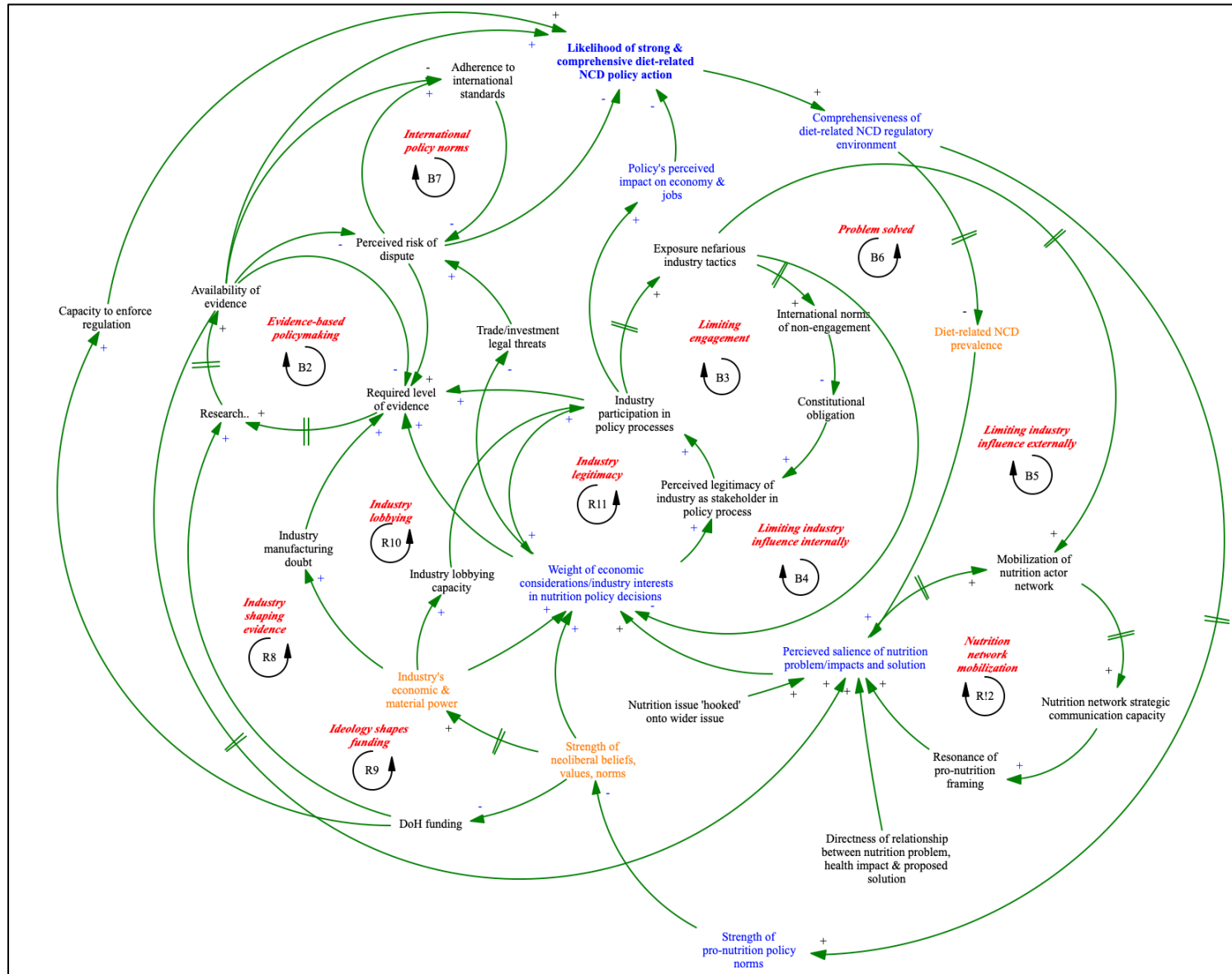
R6 indicates that through trade and investment liberalization, over time, large food corporations active in South Africa (both foreign-owned multinationals and South African corporations that have undergone multinationalization) benefit financially through local sales and/or exports, increasing their economic power and employment capacity giving them significant leverage to lobby for more favourable trade and investment arrangements. This economic power also allows corporations to influence nutrition policy as is illustrated in detail in sub-section two.

R7 reflects the ability of the food industry to constantly innovate and adapt their easily manipulated products in response to government regulation, resulting in some tweaking of the product content, but ongoing consumption of UPFs. For example, when the tax on sugar sweetened beverages was introduced, nutrition policy makers were concerned industry was simply replacing sugar with artificial sweeteners, also with potential health impacts (45).

3.2 Sub-system II: Instrumental power

Sub-system II (Figure 9.2) illustrates stakeholders' understanding of the dynamic relationships between mechanisms of industry's instrumental power including relationships, knowledge and evidence and rules and pro-nutrition policy actor's responses. The relationships presented in this sub-system were generally most frequently described by stakeholders.

Figure 9.2: Sub-system II: Instrumental power



In this sub-system five reinforcing loops and six balancing loops were identified. R8, R9 and R10 illustrate feedback processes involving mechanisms of industry instrumental (usually visible) power – the ability to directly influence policy decisions. R8 illustrates how the economic and material power of industry increases the food industry's ability to 'manufacture doubt' (for example, stakeholders reported infant formula companies fund biased child nutrition research and education) which increases the required level of evidence to support policy adoption. This drives adherence to evidence-based policymaking which leads to significant delays in the policy process while the required research is gathered or conducted (B2). When this is not possible due to lack of resources or methodological challenges, the likelihood of policy adoption is low with policymakers frequently citing lack of evidence as the reason for policy inaction. Policy inaction then tends to perpetuate weak pro-nutrition policy norms, providing no counter force to policy norms which further expands industry economic power. R9 indicates that the DH receives significantly less funding than economy-focused government departments (e.g. the DTI). This substantially limits the DH's capacity to conduct/commission DR NCD policy research and to enforce regulations which both decrease the likelihood of DR NCD prevention policy action, again maintaining weak pro-nutrition policy norms.

R10 illustrates a reinforcing loop linking industry economic and material power to their increased lobbying capacity, which increases their participation in nutrition policy processes, and potentially also the weight of industry interests in policy decisions, in turn increasing the required level of evidence required by the DH to advance a proposed regulation, there after driving the same reinforcing feedback behaviour as for R8 and R9.

R11 shows that when policymakers consider it important to weigh economic considerations more heavily in nutrition policy decisions, the food industry is perceived as a more legitimate stakeholder in this process which increases industry's participation, in turn further emphasizing the weight of economic considerations, and specifically industry interests, in policy decisions. Importantly however, stakeholders reported industry participation the policy process is driven by an obligation within South Africa's Constitution which can only be overridden by a higher international legal obligation. B3 shows how industry participation in policy processes can also prompt public health advocates to expose the nefarious tactics used by industry to prevent policy adoption/promote their products, as for example occurred in the case of tobacco corporations. Over time, this kind of exposure reduces public and therefore political acceptability of industry and can lead to the development of international rules and norms institutionalized in legally binding international treaties, over-riding any domestic institutional obligation, and committing governments to restrict industry participation in policy processes. B3 can then provide a counter force to R9 and reduce industry participation and influence in policy processes.

In the absence of an international treaty, two balancing loops were described which can provide significant counter force to R11's 'vicious' cycle of increasing influence in policy processes. B4 illustrates that when industry's nefarious tactics are exposed (e.g., non-adherence to pledges of self-regulation), nutrition policymakers report lowering their consideration of industry interests during subsequent related policymaking. B5 indicates how the exposure of nefarious industry tactics can also drive the mobilization of a nutrition actor network R12 (external to government), ultimately increasing the perceived salience of a DR NCD policy problem which can, once a certain threshold is reached, reduce the influence of economic and industry concerns in nutrition policy decisions.

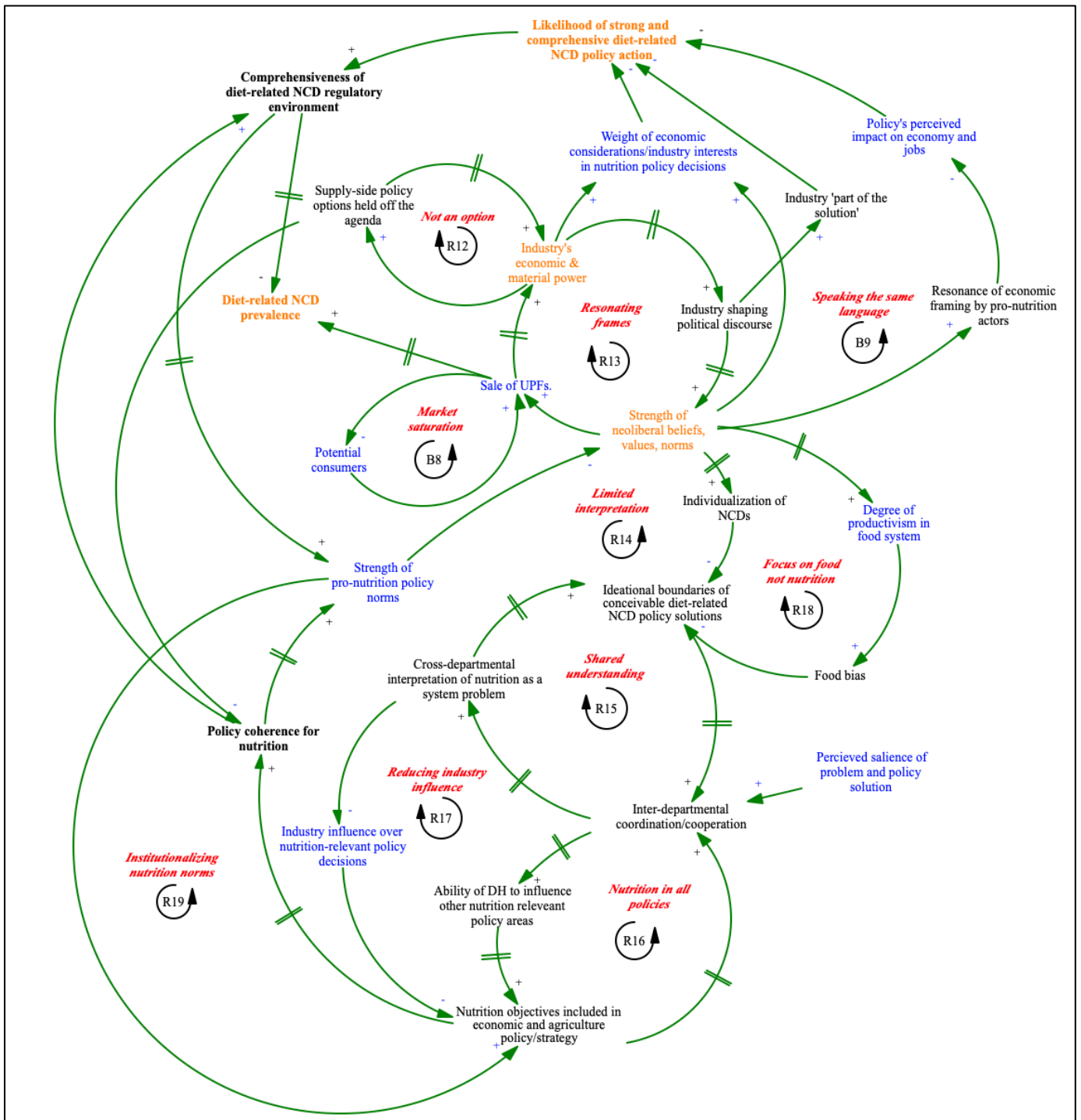
In R12, mobilization of a nutrition actor network (including for example NGOs, academia, communication and advocacy experts, grassroots groups, and other governments and spanning from the local to the international) can lead to expansion of the network's strategic communication capacity (e.g. public education, targeted lobbying strategies for different policy actors and use of various advocacy/communication tools) which may increase the resonance of pro-nutrition issue framing and in turn increase the perceived salience of the issue and proposed solution among stakeholders, ultimately reducing the weight of economic considerations during decision-making. B6 illustrates that if DR NCD prevalence decreases (as a result of effective policy action), perceived salience of the nutrition problem will naturally decline, countering the reinforcing nature of R12.

However, when their participation in policy processes is limited by such processes as described by B3, B4, B5 and R12, multinational corporations are more likely to use or convince other governments to use legal threats, including threats of trade and/or investment disputes. Such threats increase perceived risk of a trade dispute and trigger B7, where health policy makers ensure adherence to international standards to lower the perceived risk. This can become problematic if international standards limit the comprehensiveness of a proposed policy since they also have been influenced by industry interests. Perceived risk of a trade/investment dispute also drives B2 further sustaining the evidence-based policymaking approach.

3.3. Sub-system III: Structural and discursive power

Sub-system III (Figure 9.3) illustrates stakeholders' understandings of the relationships between mechanisms of structural and discursive power including ideologies, values, perception and preference shaping, organizational structures, and norms.

Figure 9.3: Sub-system III: Structural and discursive power



R12 loop illustrates the dynamics of industry structural (hidden) power – their ability to hold certain issues and solutions off the political agenda. In this reinforcing loop, the economic power of the food industry prevents certain policy options that would have significant economic impacts on industry, including for example trade and investment policy levers, from ever being considered as viable policy options. In turn allowing the economic power of industry to grow. However, B8 indicates that at some point the growing economic power of industry will be offset by a reduced potential for growth as the market saturates, slowing growth in UPF sales and preventing industry economic power from growing exponentially.

A key strategy reported by nutrition policy actors to get issues and solutions onto the policy agenda and subsequently adopted, was the use of economic framing to build broad support from more powerful economic policy actors. B9 illustrates that using economic analytical tools (e.g. costing analyses) and framing nutrition problems and policy solutions in economic terms can increase the likelihood of policy adoption, increasing the comprehensiveness of the policy environment and strengthening pro-nutrition policy norms. Being a balancing loop indicates that using economic framing will only maintain norms at a steady state, not entirely transcend them.

Before DR NCD policies are even under consideration R13 and R14 describe the dynamics of industry's potential discursive (invisible) power – their ability to hold significant problems and potential solutions outside the minds of policy actors. R13 indicates that growth in UPF sales (including exports), in turn increases the economic and material power of the food industry (as was described in detail in Figure 9.1), this then increases the capacity of industry to use various tactics (e.g. issue framing and narratives communicated through corporate networks and the media as well as through privileged access to policymakers) to shape the political discourse, looping back to reinforce the policy norms they tend to benefit from. R14 illustrates how the individualization of NCDs, where risk exposure is considered personal responsibility, not determined by complex structural drivers, is a natural extension of a socio-political context dominated by the imperative for economic growth. This interpretation tends to limit stakeholders' ideational boundaries of conceivable policy solutions, ultimately weakening pro-nutrition policy norms and further strengthening the focus on economic growth. R14 therefore suggests that while policy actors can have agency over discursive power, it can also be deterministically generated from socio-political-economic system dynamics.

Stakeholders reflected that, from their experience with access to medicines, institutional mechanisms can potentially contribute to disrupting the dynamics of discursive power. R15 illustrates that institutional structures and arrangements that increased inter-departmental co-ordination and cooperation may subsequently increase the capacity across departments to interpret and understand DR NCDs as products of complex structural drivers across a range of sectors which, in turn, may expand stakeholders' ideational boundaries of possible nutrition policy solutions, motivating further inter-departmental co-ordination and

co-operation. R16 illustrates that reducing policymaking silos and improving co-ordination between departments in economic policy development can increase the DH's influence within other policy domains including trade and investment and agriculture and lead to the inclusion of nutrition objectives in economic and agricultural policy and strategies, again increasing the desire for deeper inter-departmental coordination.

R18 again suggests discursive power can be deterministically-driven creating policy environments that support the production of crops and food products (particularly 'value-added' products like UPFs) that maximize profit and their exportability. This normative approach to trade, investment and agricultural policy tends to drive 'food bias' where there is a perception, as one stakeholder reflected, that if there is sufficient food in the system, then the system 'works', holding policies that would increase the nutritional quality of food, outside the boundaries of conceivable policy solutions. In turn, this contributes to poor policy coherence for nutrition across sectors and weakening of pro-nutrition policy norms over time which in turn, without an alternative approach, strengthens the existing normative approach.

R19 indicates that not including nutrition objectives in the overarching strategies of other nutrition-relevant policy areas including trade, investment and agriculture, leads to poor policy coherence for nutrition, weakening pro-nutrition policy norms and in turn further limiting the consideration of nutrition objectives across sectors. Non-health policy actors for example, frequently cited that their mandate was to fulfil the economic and social development objectives laid out in the National Development Plan (NDP), however, there is a significant lack of coherence between the NDP and nutrition policy. For example NDP objectives include increasing economic productivity and employment through agriculture, food processing and food retail and while food security is a key priority there is no mention of improving the nutritional quality of food (46). Economic policy documents like the NDP are time bound and generate a cascading effect shaping the objectives across government departments and the performance reviews of their appointed officials and employees generating a 'bureaucratic inertia' as described by one stakeholder.

4. DISCUSSION

This case study demonstrates how DR NCD policymaking is part of a complex system of inter-connected political economy factors that shape and are shaped by actors with competing interests/goals. As pro-nutrition, economic and industry actors all work to achieve their different goals, this drives persistent barriers to policy action and coherence that would contribute to a healthy, sustainable and more equitable food system. The additional explanatory insights into the system dynamics of DR NCD policy inaction offered by this work provides the starting point for considering the impact of various interventions on feedback relationships that drive system behaviour as well as on more distal parts of system. Adopting a systems

thinking approach, I discuss here how some key recommendations for driving NCD policy action identified by the Lancet Commission on Obesity, Undernutrition and Climate Change (6) and in my own previous work (presented in Chapter Four and Six) may affect the DR NCD policymaking system as well as some additional leverage points that have surfaced through analysis of the conceptual model. The list is not exhaustive and not every impact of an intervention is described as this would be impractical, it provides some initial insights into how the system might be shifted by using a systems thinking approach.

It appears that system actors tend to think in short causal chains and are generally insensitive to the presence of feedback between their decisions and the wider environment (47). However, by understanding feedback relationships within the system, and particularly reinforcing loops, potentially powerful leverage points can be identified (35) to shift power dynamics and promote DR NCD policy action. The first key barrier-generating feedback process, R6 in Sub-system I, reflects an archetypal ‘success to the successful’ (or in this case, power to the powerful) systems trap (40). R6 indicates that trade and investment liberalization tend to increase the economic power of the food industry, which in turn gives them more influence to shape trade and investment policy decisions in their own favour, facilitating their ongoing growth, a feedback process also recognized by others (24). Weakening this feedback process by introducing regulations that slow and limit the investment in and growth of corporations producing UPFs (and sales of UPFs) is likely to be a key leverage point to promote DR NCD policy action. This could for example be done by embedding a framework and objectives for nutrition based on the WHO NCD Global Action Plan, within the remit of national and regional trade bodies, such as the South African Development Community (SADC) (41), and regulations that internalize the true cost of food corporations’ products in terms of health and environmental impacts. In countries including the US and European Union, the removal of perverse subsidies, such as on sugar, will be important.

Bans on marketing of unhealthy foods and non-alcoholic beverages could also intervene in R3 (‘preference-shaping’). Sufficiently high taxes on unhealthy products (e.g., sugar sweetened beverages and other UPFs) coupled with subsidies on healthier products may also counter feedback in R1 (‘importation’) and R2 (‘local production’). Given system inter-linkages, intervening in these feedback processes to reduce UPF sales may also contribute to bringing R6 under control, and in turn reduce industry political influence. It is likely that the whole suite of levers outlined would be needed to make UPF production so economically unrewarding that the food industry shifts their focus towards the production, distribution and promotion of healthier foods.

Industry economic power links all three sub-systems together and, similar ‘success to the successful’ feedback processes, are also seen in Sub-system II and III where industry economic power gives industry, via various pathways (e.g., industry’s lobbying capacity), greater influence over policy decisions and agenda-setting and contribute to limiting stakeholders’ ideational boundaries of conceivable DR NCD policy solutions,

each in turn reducing regulatory barriers to the UPF industry's growth and economic power. Again, the high degree of inter-connectivity between system elements indicates that the interventions outlined so far are also likely to reduce industry's capacity to prevent DR NCD policy over time. In other words, policy action begets policy action.

Other key barrier-generating feedback processes relate to nutrition policy actors' adherence to strict evidence-based policymaking in response to industry pressure and in an effort to avoid legal disputes. However, considering more distal linkages within sub-system II indicates that an evidence-based approach can ultimately maintain weak pro-nutrition policy norms which, by default, perpetuates policy norms driving industry influence in nutrition policy processes and the trade and investment rules forcing strict adherence to evidence-based policy. This work therefore supports calls for an 'evidence-informed and practice-based' approach (19, 48) to DR NCD policy decisions that promotes active policy experimentation and evaluation, since it could break the undesirable feedback loop described, ultimately potentially strengthening pro-nutrition policy norms with various positive repercussions across the system including weakening the individualization of NCDs to expand ideational boundaries of policy solutions and greater policy coherence for nutrition across sectors.

Strengthening a number of existing facilitative feedback loops within the system will also be important to drive nutrition policy action and coherence. These include R12 ('nutrition network mobilization'). In recent work Baker et al used system dynamics methods providing a more detailed analysis of how nutrition networks may be strengthened to promote political commitment for malnutrition (18). Driving loops R15 ('shared understanding'), R16 ('nutrition in all policies'), R17 (reducing industry influence') and R18 ('institutionalizing nutrition norms') will be important for overcoming the critical problem of nutrition not having a single departmental 'home' and as a result not being prioritized. Driving these loops will be important for promoting policy coherence across sectors towards generating a healthy and sustainable food system and reducing DR NCDs. Key leverage points here include capacity building within the DH, DTI and DAFF and governance structures that ensure nutrition policymakers are included in the development of trade and investment strategy and on negotiating teams. These interventions are likely to make embedding a framework and objectives for nutrition within the remit of trade decision-making bodies, as suggested earlier, and including nutrition objectives within other key economic policy documents (e.g., the NDP) more possible, in turn strengthening policy coherence and pro-nutrition policy norms.

Another key leverage point is adding system structures that provides informational feedback where it was previously lacking, in other words making actors directly accountable for their own actions (40). These are often hard to implement as they generally require those in power to agree to being more accountable. For example, making the DTI pay directly out of their own budget for the health care costs of people requiring

chronic management of DR NCDs due to their economic policies and strategic decisions that increases availability and consumption of UPFs. Internalizing the cost of the health impacts of industry products would be another example.

Time lags in feedback processes can often be overlooked by policymakers. Generally speaking, the perceived salience of a policy problem (and therefore willingness to act) is increased when more immediate and direct feedback linkages can be made between the nutrition problem, the health and social impacts and the proposed policy solution/s effect on the problem. This contributes to policy actors' tendency to not consider potentially high-leverage (trans-sectoral) approaches that have the potential to transform the food system and reduce DR NCDs but take significant time to come into effect. Time delays, where possible to change, can have relatively high leverage. For example, strategies to mobilize nutrition network may result in driving issue salience to the necessary threshold for earlier policy action. Being aware that it will take time for inter-departmental co-ordination to result in tangible policy coherence is important to motivate health policy actors to persevere. Increasing funding of policy research and adopting novel research methods may reduce the time delays in 'evidence-based policy' loop, also reducing delays in policy adoption.

The rules of any system determine its scope and degrees of freedom (the number of ways the system can vary) and can be high leverage interventions (40). Rules include laws (strongest), punishments, incentives and informal social agreements (weakest). Given the power of the rules governing a system, it is highly concerning, as illustrated in the conceptual model and in related work (20), that the food industry (and other corporations) has significant influence over the rules of international trade and nutrition policy at both the domestic and international level. It is industry's shaping of trade rules that has unleashed the 'success to the successful' loops leading to accumulation of industry productive power earlier described.

A key rule in the nutrition policymaking system is the South African Constitutional requirement that policymakers engage with all interested stakeholders during policy development, including industry. This rule alone limits the scope for pushing the system towards reducing food industry involvement in nutrition-relevant policy processes. However, the Constitution also commits the government to comply with its international obligations. This includes international health instruments like the Framework Convention on Tobacco Control which, under Article 5.3, obligates parties to adopt measures that protect 'their public health policies related to tobacco control from commercial and other vested interests of the tobacco industry' (49). As such, a systems thinking perspective would support proposals for a Framework Convention on Food Systems (6). This would drive B3 ('limiting engagement'), controlling R11 ('industry legitimacy') to limit food industry participation and influence in policy development. The knock-on effects of such an instrument could powerfully facilitate policy action and promote pro-nutrition policy norms. That said, it may lead industry to adapt by strengthening more covert strategies to influence policy- including mechanisms of discursive power

(e.g., perception shaping through issue framing/narratives communicated through corporate foundations, opinion leaders and media capture).

The overall goal or purpose of the system is one of the most powerful points of leverage in any system. Seeking the wrong goal will drive the system in an undesirable direction. For example, major focus on GNP growth or economic growth more broadly, has been found to generate problems of unemployment, poverty, hunger, resource depletion and environmental degradation (50). Arguably, the nutrition policymaking system presented in this work is not driven by an overarching goal of ensuring a nutritious, sustainable and equitable food system, but more by food security objectives and by the goal of growing food production and retail corporations to increase global market share and grow the economy. System goals, along with its rules and relationships arise from core underlying paradigms – deeply held beliefs and associated assumptions about how the world works (40). During this research a number of paradigmatic assumptions were identified, including ‘consumption-based growth is critical for development’, ‘the food system is a resource to be converted to economic gain’ and ‘trade is ultimately good for health’. As the system’s source, intervening at the level of the paradigm can be transformative. A systems perspective therefore strongly supports increasing calls from the public health and new economics communities for a new paradigm that seeks to meet the health and social needs of the population within the means of the planet (6, 51, 52). Paradigm shifts is a field of research in itself but broadly requires persistently highlighting failures of the existing paradigm, framing problems, challenges and solutions according to the new one, positioning advocates of the new paradigm in positions of power and visibility, and focusing on building broad support (40).

Finally, systems are highly resilient so care must be taken when making and considering recommendations that existing power relations are not simply reproduced. For example, industry responds to food reformulation by adapting their products, but maintaining sales, indicating product reformulation will do little to reduce the economic power of the food industry, indicated in this model to be a key driver of the DR NCD policy making system’s behaviour.

5. LIMITATIONS

Important variables, links and feedback structures may not have been captured in the model for a number of reasons. First, given system dynamics models are constructed based primarily on stakeholders’ understanding of the problem under investigation (and in this research, the addition of a small number of causal linkages from two literature reviews) it is quite possible the model contains inaccuracies and deficiencies due to stakeholder subjectivity and limited understanding (53). While significant effort was made to include as many stakeholders as possible with intimate understanding of different aspect of the problem, it was challenging to access high level politicians/government officials who may have provided additional

system insights. Second, due to the political nature of the research topic and the inherent vested interest of different stakeholders, it is possible some participants were sharing politically motivated reasoning or omitting certain causal relationships from discussion in the interviews. While interviews were conducted in private and anonymity was offered, it was not possible to entirely mitigate this risk.

While having only the primary researcher conduct the purposive text analysis and model development ensured consistent coding it also introduces the risk of potential bias. However, this risk was reduced by having the same researcher also collect the data. This provided the opportunity for asking probing questions to gain a deeper understanding of the context of the data at the time of data collection (54) which facilitated response to 'subtle nuances of, and cues to, meaning in the data' during data analysis (55) to reduce potential bias. Modeler bias was also mitigated by conducting follow-up model validation discussion sessions with a sub-set of stakeholders to build confidence in the model structure (54).

A data source reference table that records the links between each causal relation within the conceptual model and their data sources in the interview transcripts was not included given the high number of causal relationships within the model that would make this process highly labour intensive (36) and since variables/relationships were developed and refined iteratively during the coding process. However, I suggest, as others have, that omitting a data source reference table can be justified given that the same coder also collected the data, which, as mentioned above, can allow for a greater sensitivity to meaning in the data and reduce bias in coding (54, 56). Further, the purposive text analysis tables generated for each stakeholder interview do provide a reference for the causal relationships included within the model, although some of the variables were iteratively developed and generalised during the coding process. Again, the follow-up stakeholder model validation discussions provided an opportunity for the 'interpretive leap' from the data to the conceptual model to be scrutinised by stakeholders and any biases that may have occurred in this process to be addressed. In future research maintaining the links from the final conceptual model to the data sources time efficiently but also allowing for the iterative development of model variables could be done using computer-assisted qualitative data analysis software such as NVivo which allows for building relationships between codes and linking these relationships to the data sources (56).

Generalizability to other country contexts is limited given the context-specific nature of the problem under investigation. A next step would be to engage stakeholders in another country context to explore similarities and differences in the causal structure of the South African nutrition policymaking model to assess generalizability.

Given the number of qualitative and intangible variables included in this model and lack of historical data to parameterize them and generate accurate numerical equations representing their relationship to other

variables, progressing to numerical simulation modelling of the policymaking problem examined in this research, I suggest, would be rely too heavily on assumptions, estimates based on logic and simplifications, resulting in unreasonable uncertainty of simulation model validity.

6. CONCLUSION

Using South Africa as a case study, a conceptual model (separated into three sub-systems) was developed that represented DR NCD policy inaction due to political economy mechanisms and corporate power emerging in the context of international trade and investment liberalization. By explicitly focusing on feedback relationships, qualitative SDM can be used for identifying key leverage points within the system which may shift the existing power dynamics to facilitate greater political commitment for healthy, equitable and sustainable food system transformation as well as providing deeper understanding of strategies identified through more traditional health policy analysis method, including providing insight into their mechanism of action and how they may affect more distal elements of the system.

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CHAPTER TEN: DISCUSSION

CHAPTER OVERVIEW

This final chapter provides an overview of the thesis, reviews the theoretical, methodological and empirical contributions of this work as they align with its aims, reflects on some key challenges and limitations and future areas for research.

1. THESIS OVERVIEW

The influence of politics and power in health has been recognised for centuries. From Rudolf Virchow in the 19th century, to the Alma-Ata Declaration in 1978 and more recently the WHO's seminal 2008 Commission on Social Determinants of Health, which recognised health inequities within and between countries result from the inequitable distribution of power, money, and resources that shape and in turn have been shaped by the social and economic structures, institutions and policy, and the prevailing politics of our time (1, 2). In 2014 the University of Oslo Commission on Global Governance for Health described how globalization has meant health inequities increasingly emerge from transnational activities involving non-health actors with different interests and degrees of power – states, transnational corporations, civil society and others (3). Despite this persistent recognition of the role of power, and increasingly transnational power, in the inequitable distribution of health outcomes and in health policymaking, there has been limited empirical study of it.

In this thesis I therefore sought to contribute to better understanding power in global health policy, defined as health policy issues whose causes or redress lie outside the capability of any one nation state (4). More specifically, I examine how power structures and dynamics emerging from or facilitated by the international trade and investment regime (an important global governance mechanism) (5) influence NCD prevention policy development. Chapters Four to Nine of this thesis make theoretical, methodological and empirical contributions to the development of the international trade and investment and health policy literature. In Chapter Four, a conceptual framework for analyzing power in health policy processes was developed and existing literature was synthesized and mapped against the framework in a realist review to gain a more nuanced understanding of how THCCs utilise or benefit structurally from the international trade regime in ways that encourage NCD prevention policy non-decisions. In Chapter Five I present a second, related, realist review that attempts to expand existing theories explaining how, and under what conditions, the international investment system may influence health policy processes and decisions, and identifies existing evidence to support or challenge these. In Chapter Six I use the conceptual framework developed in Chapter Four as a heuristic to empirically study how THCC power emerging from the international trade and investment regime influences nutrition and alcohol regulatory development in a 'developing' country context. In Chapter Seven, I empirically investigate the specific concern of investor-state dispute-related regulatory chill as compared to trade dispute-related regulatory chill. In Chapter Eight I attempt to move beyond traditional health policy process analysis methods to explore the utility of system dynamics methods as a novel tool for understanding corporate power in health policy processes. In Chapter Nine I present the results of using these methods to better

understand the inter-dependence and dynamic feedback among multiple political economy factors, different forms and relations of power in NCD prevention policymaking in the context of international trade and investment liberalization and identify key leverage points in the system that may help drive effective policy action.

A number of overarching central arguments emerged from this thesis. First, that the norms, policies, and practices arising from global political interaction in the trade and investment system are political determinants of health, which shape, and are shaped by, the power asymmetries between health/non-health and state/non-state actors with conflicting interests. Second, the international trade and investment system contributes to THCC profitability which enables them to exercise and passively benefit from, instrumental, structural and discursive power in health policymaking. Third, trade rules/investment protection and trade and investment dispute mechanisms included in international trade and investment agreements empower THCCs to influence NCD prevention policy through the socialization and internalization of neoliberal ideas and norms in policymaking across areas relevant to NCD prevention. Fourth, that trade and investment liberalization plays an important role within the dynamics of the NCD prevention policymaking system which is characterised by a high degree of inter-connectedness and feedback between different political economy mechanisms entrenching corporate power over time and preventing progressive action on NCD prevention across sectors.

2. CONTRIBUTIONS

2.1 Theoretical contribution to health policy analysis

2.1.1 Developing an integrated political economy and power approach to health policy analysis

While various frameworks used in health policy analysis integrate political economy factors to understand policy process and decisions, in commencing the realist review presented in Chapter Four, I identified the lack of a health policymaking framework that explicitly included theories of power. This was despite calls from the academic community for researchers to draw on existing perspectives on power from different disciplines to study health policymaking (6, 7). For these reasons, I developed the conceptual framework presented in Chapter Four integrating overlapping and complimentary political economy and power theory for analyzing health policy processes and (non)-decisions. The framework illustrates how various forms of power – instrumental (usually visible), structural (more hidden) and discursive (invisible) – are exercised by actors or emerging from socio-economic political systems via eight different but interdependent mechanisms active at different levels (local to global)

and in different spaces (which may be closed, open, invited, or claimed). Finally, the framework highlights that power and its outcomes should be considered explicitly within the dominant paradigm (here, neoliberalism) although specificity, nuance and reflexivity are critical to understanding neoliberalism's varied manifestations in different political and cultural contexts.

A key utility of the conceptual framework is that it encourages analysis of not only policy decisions, but also *non-decisions* as an outcome. It is designed for analyzing why and how certain public health issues and solutions are recognised and lead to meaningful policy action while others exhibit 'policy inertia'- since they are either never recognised, suffocated before they make it onto the political agenda or are minimised or re-interpreted in the decision-making stage such that transformative policy action rarely occurs. The framework was used in this work, and I suggest should be viewed in the future from a 'health in all policies' perspective, such that unhealthy policy decisions in non-health sectors, for example trade, finance and labour are also conceptualized as health policy non-decisions warranting deeper understanding by public health actors with a view towards identifying strategies for change.

By synthesising evidence across a range of disciplines in the realist review (Chapter Four), I identified some evidence supporting the theory that THCCs are able to use material power, attained partly through increased trade and investment across borders, to exercise instrumental power via two main mechanisms. The first is direct lobbying, often via privileged access to policymakers, to ensure favourable trade and health policy at both the national and international level. The second mechanism is the potential for international trade and investment rules to be used by THCCs to either coerce governments into non-decision-making or, if that fails, to shift public health policy decision-making to more favourable international trade (or investment) legal venues. These mechanisms link to the concept of global or 'new' constitutionalization that refers to the process of, 'creating constitutionally based systems of law above the level of the state', such as through trade and investment agreements (8). Critics of global constitutionalism consider it part of the neoliberal project aiming to embed policy preferences, including privatization and liberalization in macroeconomic and microeconomic policy, to further the interests of elite economic actors including transnational corporations, locking in existing inequalities and power structures (5, 8-10).

A number of analyses of trade agreement texts and dispute indicate that governments may be deterred from progressing to a dispute given the complexity of establishing an adequate defence in a WTO dispute. However, I found limited empirical evidence that THCCs have caused health policy non-

decision-making by generating real or perceived risk of a WTO dispute. Rather, I only found robust evidence to empirically validate certain elements of the proposed causal mechanism of THCC structural power – that within a neoliberal dispensation, governments are dependent on private sector profitability (gained particularly through exports) for job creation and economic growth and, as such, reorientate institutional structures and practices to include private actors and prioritize their interests during the policy process. Evidence indicated the institutionalization of industry involvement in trade and health policy processes at both the domestic and international level, and the exclusion of health actors in trade policy spaces. However, while a few studies identified an association between industry involvement in policy process and policy non-decisions, little empirical evidence has been undertaken so it is not possible to confirm if there is a causal link or not. Further, the impacts of THCC structural power on agenda-setting versus decision-making were relatively indistinguishable in the existing literature.

In terms of mechanisms of discursive power, I identified some empirical evidence that neoliberal ideas have shaped the interpretation of issues at the intersection of trade and health and have limited the psychological boundaries around NCD prevention interventions to those that address individual choice/demand and the emergence of policy norms characterised by a persistent tendency for economic and trade objectives to be prioritised over health. While some evidence indicates THCC's attempt to exercise discursive power by framing trade and health issues in ways that promote neoliberal policy norms, it is difficult to empirically quantify the impact of these efforts on NCD prevention policy decisions and norms. In reality, discursive processes likely emerge through both the deliberate effort of THCCs and other actors, and the socio-economic political system within which actors are embedded.

Overall, I found developing and testing theories about power in health policymaking, and specifically how the international trade and investment regime facilitates/enables different forms of THCC power to promote NCD prevention policy (non-)decisions, to be complex and challenging for various reasons. The first major challenge relates to developing theory about phenomena that are not visible – including structural (usually hidden) and discursive (invisible) power and policy non-decisions (often inactions) – all manifesting in relatively opaque political contexts. However, theoretically, these fit well within a critical realist perspective that argues specifically against empiricism and positivism, but rather that scientific reality is not only composed of observable events, but also unobservable phenomena and structures that generate the outcomes we observe; and that not all events or outcomes are observable (11). I found the realist methodological approach adopted in this work to be

very helpful for building and testing theories of power in health policymaking since it enables the researcher to start with an 'unexplained' phenomenon (e.g., NCD prevention policy inaction) and propose hypothetical (including unobservable) mechanisms that, if they existed, would generate or cause that which is to be explained, then finds evidence that either eliminates or supports these explanations (12).

Other significant challenges I encountered while developing and testing theories on power in health policymaking include the long and highly inter-connected causal chains involved; the involvement of different levels from the global to the individual policymaker and different sectors and spaces; and the context-dependence of causal mechanisms. Adopting a realist review approach again proved valuable since it facilitated the piecing together of evidence from a range of different disciplines and studies to plausibly map some of these causal processes. Similarly, system dynamics modelling of the policymaking process effectively enabled the visualisation of these complex causal chains and additionally provided explanatory insight into the dynamic effects of their inter-connectedness over time.

The theoretical framework was essential to the development of the analytical approaches taken to the empirical work presented in Chapters Six and Nine (exploring how THCC power emerging from the international trade and investment regime influences nutrition and alcohol regulatory development in South Africa). It specifically drove the emphasis on how, under the neoliberal paradigm (promoting trade liberalization and market extension), corporate and economic actors have been facilitated to exercise different forms of power via various mechanisms to influence South Africa's regulatory environment. In this work I highlight that without explicit and comprehensive analysis of power and paradigms in trade and health policy research, recommendations to improve policy coherence or to promote health policy action remain trapped within a neoliberal logic which means that they are either unlikely to be acted on or, if they are, then they tend to be hijacked by existing power structures (13).

Using the conceptual framework as a heuristic for the empirical analysis presented in Chapter Six also provided some additional useful insights for theory development. I found that same mechanism of power had varied functions for different forms of power, e.g., evidence functioned as a mechanism of both instrumental and structural power. I also identified deep inter-connections between the different forms of power and constant interplay between power as the deliberate strategies of

dominant actors and as structural processes of socialization and internalization. Additionally, power at the international level was often reproduced at the national level.

2.1.2 Expanding the conceptualization of the influence of the international investment liberalization on health policy decisions

The realist review in Chapter Five was the second piece of work in which I explored the ways trade and investment liberalization may facilitate corporate power in NCD-prevention policy decisions. Here I sought to find evidence for, and expand existing theories explaining how and under what conditions, the international investment system may influence NCD prevention policy processes and decisions. Existing arguments claim trade and investment agreements empower THCCs through an expansive set of rights enshrined in rules enforced by the ISDS arbitral system (5) with the potential to generate public health ‘regulatory chill’ (14). By adopting a political economy perspective, I attempted to move beyond the focus on formal ‘rules’ to capture a broader range of causal mechanisms by which the international investment regime may facilitate THCCs’ power over NCD policy decision-making, including political economy mechanisms.

The majority of evidence I identified explored aspects of regulatory chill. Potential drivers of regulatory chill include ambiguity in treaty terms, inconsistency in arbitral rulings, potential arbitrator bias and the high cost of arbitration. THCCs may be incentivised to threaten or pursue an investor-state dispute since the costs to them may be outweighed by the benefits of even just delaying regulatory adoption, particularly since this effect can ripple out across jurisdictions. The review identified some evidence indicating the real potential risk of all three types of regulatory chill-response, precedential and anticipatory. Although not the primary subject of empirical study, various economic, political and industry-related factors were identified as likely interacting to increase/decrease the ultimate risk of regulatory chill.

In terms of broader political economy mechanisms, in Chapter Five I propose that, under a neoliberal paradigm promoting free, open and competitive markets to achieve economic growth, private foreign investment is often, although not always, considered by governments to be a fundamental source of employment, production, technology transfer and tax revenue. As such, attracting FDI is a key pillar of the economic development plan in many LMICs, including investment into the processed food, alcohol and, in some cases, tobacco sectors. Given many governments believe that FDI from private corporations is critical to job creation and economic development, THCC’s access to, and influence within, political decision-making spaces may be significantly expanded. Limited studies empirically

testing this theory were found, although some evidence indicates that THCCs have taken advantage of governments' prioritization of foreign investment over NCD prevention objectives to influence the NCD prevention regulatory environments.

There is therefore a clear need for more politically-oriented research on how international investment liberalization may shape actor interests and priorities in ways that affect NCD prevention policy. Chapter Six included empirical investigation of the political economy mechanisms of international investment-related NCD policy non-decisions and in Chapter Seven I provide further empirical analysis specifically of the regulatory chill theory.

2.2 Methodological contribution to health policy process analysis

While systems thinking, and system dynamics modelling (SDM) methods more specifically, are increasingly being used to evaluate health policy outcomes, to the best of my knowledge this thesis presents the first attempt to apply a SDM approach for analyzing NCD prevention policymaking processes in the context of trade and investment liberalization. Moreover, it is one of the first attempts to use these methods for analyzing any health policy decision-making process. Thus, the exploration of the utility of these methods for health policy process analysis presented in Chapter Eight, and results presented in Chapter Nine, provides a novel methodological contribution to trade and health research but also health policy analysis more broadly, offering a new way of thinking about and understanding health policy processes and (non)-decisions.

While the more traditional health policy process analysis methods (including thematic analysis and process tracing) I adopt in Chapters Five and Six usefully allow for in-depth analysis of mechanisms of power contributing to a policy decision in isolation, they are not able to fully capture or analyse how the dynamic relationships between different elements across multiple levels in the whole 'policy making system' affects NCD prevention policy decisions. In the work presented in Chapter Nine, I illustrate how the use of SDM to visually describe the causal structure of the health policymaking system by defining the feedback relationships between elements in causal loop diagrams (CLDs) can usefully capture the causal complexity of health policy decision-making and illustrate how corporate power in health policymaking can become entrenched (or diminished) over time. Moreover, Chapter Nine also shows how qualitative SDM is useful for identifying key leverage points within a policymaking system to drive more transformative policy action, as well as providing deeper understanding of strategies identified through more traditional health policy analysis method,

including insight into their mechanism of action and how they may affect more distal elements of the system.

In Chapter Eight I identify a number of methodological considerations when applying these methods for future analysis of highly political policy problems with complex power relations and dynamics. These include recognizing that stakeholders' misperceptions and blind-spots may be particularly amplified for problems involving hidden or invisible power and they may be more likely to use grandstanding and obfuscation. I identified that supplementing stakeholder-sourced data with causal theory identified in the existing literature and adopting a combined 'theory generating and theory testing' approach to model conceptualization were both useful methodological steps to ensure important system loops not explicitly recognized by the system actors were captured in the model.

I also identified some additional key challenges for consideration in future analyses. For example, while using interviews to elicit individual stakeholder mental models was considered important to avoid more powerful actors dominating model development in a group model building setting, securing buy-in from policymakers to engage with and use the system dynamics model was more difficult. Moreover, the demand for direct, quick, 'tidy' policy fixes was a barrier to fully engaging busy policymakers with the model. Researchers seeking to use these methods in the future should consider whether both they and stakeholders have available the time and resources required to build trust, understanding of the approach and interest in drawing lessons from the model. Part of this is ensuring stakeholders rather than researchers drive problem identification.

SDM also holds value in its capacity to integrate both agency and structure. The findings I presented in Chapters Four and Six indicate industry power to promote NCD prevention policy non-decisions facilitated by trade and investment liberalization are likely both agent-driven and determined by the socio-economic political system via processes of socialization and internalization of policy norms, supporting the structuration theory perspective (15). This raised the challenge of acknowledging the system-level aspects of power and (non-)decision-making while not absolving policymakers of their responsibility to act. SDM provides a method for resolving this tension since these methods not only expose the policymaking system structure and how policymaker's behaviours are shaped by it, but the model can also be used as a tool for empowering stakeholders themselves to identify leverage points in the system to promote policy action. In so doing, system dynamics methods recognize system level drivers of policy decisions while still recognizing and ensuring actor accountability. SDM can also allow for extensive stakeholder engagement in the modelling process itself. Involving stakeholders in this

way may facilitate different policy actors – who may not otherwise consider their work of particular relevance to nutrition and NCDs – to see their part in the problematic system structure, representing a possible starting point for building consensus for action (16).

While the utility of SDM for better understanding complex value-laden social system problems has been uncertain, the work presented in Chapter's Eight and Nine indicates SDM does offer a promising tool for understanding complex social system problems. Recent work by Richardson modelling the structures inherent in the emergence of what he describes as 'extensive evil' supports this perspective (17). System dynamics methods should continue to be applied and developed as an additional methodological tool for health policy process analysis, particularly since it can assist in understanding the feedback and dynamics of the political economy influences on policymaking.

2.3 Theoretical contribution to system dynamics modelling paradigm – integrating system dynamics and power theory

In addition to exploring the utility of SDM for analyzing highly political policymaking processes and decisions, in Chapter Eight I reflect on the conceptual model of power in health policymaking (developed in Chapter Four) to identify some complementarities between system dynamics and power theory. This analysis proposes that the use of system dynamics analysis within a power theory (or other related) perspective may extend the utility of system dynamics for understanding highly political and complex social system problems.

Power theory may extend the utility of system dynamics by increasing system dynamicists' attention to, and understanding of, how decisions are made, which is critical to identifying strategies to drive positive policy change. System dynamics has largely focused on how decisions affect system behaviour but has traditionally paid limited attention to the complexity of decision-making itself (18). Conversely, a primary purpose of power theory is to explain why decisions are made, including decisions that do not appear to be in the best interest of the stakeholders involved (19). As Chapter Eight shows, power theory can assist in both the data collection and analytical phases of system dynamics by guiding system modelers to ask probing questions that may reveal the underlying mechanisms of how and why decisions are made including via visible, hidden and invisible mechanisms (19-21).

2.4 Empirical contribution to international trade and investment regime and NCD prevention policy

2.4.1 International trade and investment liberalization, corporate power and nutrition and alcohol policymaking

Drawing on the conceptual model developed in Chapter Four, Chapter Six contributes one of the first empirical case studies to adopt an integrated political economy and power approach for analyzing how the international trade and investment system may facilitate corporate power to promote NCD prevention policy non-decisions in an emerging economy. Some of the key findings on the mechanisms of power identified in this work, many of which are highly inter-connected, are reflected on here. First, neoliberalism manifested in policy reforms including trade and investment liberalization has oriented the interests and goals of different policy actors in various related ways that create barriers to NCD prevention. While corporations attempt to influence the trade and investment system as identified in the realist reviews presented in Chapters Four and Five, Chapter Six provides additional detail on how their interests, actions and power may also be shaped by it. Trade and investment liberalization has contributed to promoting South Africa as a production hub for food and alcohol corporations to access new markets across Africa (22) but also increased the motivation and opportunity for domestic corporations to trade and invest across borders (23). As such, and given South Africa is a regional policy leader, the food and alcohol industries' particular interest in exercising power over South Africa's food and alcohol regulatory environment is motivated not only by a desire to profit within South Africa, but also to 'control' policy transfer across Africa. Additionally, foreign investment and corporate mergers in the food and alcohol sectors have expanded the productive power of dominant actors, both increasing their lobbying capacity and their instrumental power in NCD prevention relevant policymaking. This finding suggests that while the least economically developed countries are often characterized as most vulnerable to THCC influence, it may be that larger developed and emerging economies are subjected to the most pressure from THCCs and as such also vulnerable to their influence.

Neoliberal theory that policy reform, including trade and investment liberalization, is necessary to achieve narrow goals of economic growth and reductions in unemployment was clear amongst economic policy actors; similar to the realist review's findings presented in Chapter Four. These reforms have led to the South African government's increased focus on expanding the production and export of value-added products (including processed foods and alcoholic beverages) to achieve set goals of economic growth and unemployment reduction, similar to findings by others (24). These shifts in interests and goals have deeply shaped the relationships between government and industry,

particularly incentivizing economic policymakers' to grant productively powerful, export commodity-producing food and alcohol corporations significant access to, and thus the ability to exercise instrumental and structural power within, economic/trade policy spaces. This includes via informal mechanisms (as have been found in multiple previous studies (25)) but there is also a general orientation of formal domestic institutional structures (e.g. the National Economic Development and Labour Council) and processes (e.g. socio-economic impact assessments) that include industry or promote their interests. This is a particularly important finding since although health policy actors attempted to limit industry influence, particularly over nutrition policy decisions, much of the necessary policy action on NCD prevention, as in any country, falls not within the mandate of the Department of Health (DH), but in trade, investment and agricultural sectors. In South Africa for example, health warning labelling is the only alcohol regulation that falls under the DH's direct mandate. Where nutrition and alcohol policy did fall within the DH's mandate, mandatory consultation with industry created significant barriers to policy adoption. Others have similarly found government silos to generate barriers particularly to nutrition policy (26).

Both trade and health policymakers identified primarily isolated substantive issues of front-of-package food labelling, alcohol health warning labelling, iron fortification of imported foods, and standardised packaging requirements as health regulations of potential relevance to South Africa's trade obligations. However, limited knowledge, particularly amongst trade policymakers, of the potential broader linkages between trade/investment and food/alcohol environments, outcomes and policy was a powerful mechanism of DH exclusion from institutional structures and spaces where the trade and investment policy agenda is set and decisions made. Similar findings have been made in a case study of Australia where nutrition generally not been considered as a trade policy issue (27). From a power perspective, knowledge (or in this instance, a lack of it) is a potent mechanism of structural power that is not necessarily intentionally exercised by certain actors, but rather is the function of the neoliberal politico-economic system, supporting the structuration perspective (15).

The high evidentiary standard demanded of the DH to prove public health policy effectiveness by industry and economic policymakers in South Africa, but also institutionalized through WTO rules, was a powerful tool of both structural (agenda-setting) and instrumental (decision-making) power, particularly given the DH's very limited research budget. These requirements contributed to the internalization of an evidence-based health policymaking norm by policymakers; a lack of evidence, usually of policy effectiveness, was cited as a key driver of policy non-decisions. A tight budget also

meant the DH frequently relied on international standards and guidelines to set the policy agenda and safely justify policy proposals.

The individualization of unhealthy diets, alcohol-related harm and NCDs more generally, as well as the interpretation of food and alcohol as primarily economic commodities in general political discourse, were linked to the internalization of neoliberal ideas. Health policymakers reported increasingly using economic framings of nutrition and alcohol-related harm as the most effective strategy for advancing proposed regulation. I identified clear attempts by THCCs to capture discursive power and prevent NCD prevention policy through the use of frames and narratives that resonated with neoliberal ideas and values. This aligns closely with findings by others that THCCs appeal to individual freedom, personal responsibility for health, and minimal regulation to promote economic competitiveness to undermined government action to address NCDs (28-30) and in trade negotiations (31). Studies have also found very similar neoliberal discourse within WHO fora including TBT Committee meetings in challenges to nutrition labelling proposals (32) and tobacco control (33).

I suggest however, these efforts alone do not explain how nutrition and alcohol-related harm problems were conceptualized by policy actors. More deterministic processes of socialization and internalization of the accepted neoliberal paradigm and discourse (coupled with limited knowledge of the linkages between trade and health), appear to have strongly influenced the interpretation of these health issues, particularly by economic policymakers. It is within this interpretive context that policymaking norms prioritizing economic/trade over health objectives or attempting to balance economic and health concerns seemed to have emerged. These norms manifest as significant incoherence between economic/trade policy and NCD objectives, primarily demand-side action on diet-related NCDs, and repeated alcohol harm reduction policy non-decisions. Major departures from these norms have however been observed in relation to policy problems for which the health impacts are perceived as so direct and severe that they are not accepted by the public.

2.4.2 The dynamics of corporate power in the diet-related NCD policymaking system

Gill and Benatar have described neoliberalism as not only a set of economic processes but also a system of power (34). The inter-dependence of multiple political economy factors manifesting as different forms of power in NCD prevention policy processes, resulting in causal complexity of NCD prevention policy non-decisions, is recognised in both Chapters Four and Six. Using system dynamics methods, Chapter Nine proposes that NCD prevention policy (and specifically diet-related NCD

prevention policy) (non-)decisions emerge from the dynamics of a wider system of power in policymaking generated under neoliberalism and applies SDM to describe the causal structure of the policymaking system driving DR NCD policy inaction in South Africa. This involved developing causal loop diagrams defining the feedback relationships between system elements which could be used to better understand persistent policy inaction and identify key leverage points in the system which may shift the existing power dynamics to facilitate greater political commitment for healthy, equitable and sustainable food system transformation.

The analysis identified a number of important dynamic feedback processes affecting DR NCD prevention policy processes and decisions, that, to the best of my knowledge, have not been reported through use of formal system methods elsewhere. A series of feedback processes driven by consumption-based economic growth and monetary profit imperatives involving trade and investment liberalization, importation, investment in local production and marketing of ultra-processed foods were identified as contributing to increased rates of consumption of ultra-processed foods over time and ultimately contributing to generating the NCD policy problem. In an important 'power to the powerful' loop, trade and investment liberalization contributes to the growth of multi-national food corporations, increasing their economic power and employment capacity which in turn gives them greater leverage to secure trade and investment arrangements in their own interest.

The food industry's material/economic power also facilitated corporate instrumental power in nutrition policy processes via other reinforcing loops. These involve industry's ability to 'manufacture doubt' and their direct lobbying capacity, which can both increase the required level of evidence policymakers must produce (to prove the health harmful effects of their products and the effectiveness of any proposed policy response) and decrease the likelihood of policy action, ultimately facilitating the further expansion of industry economic power. It was also found that when policymakers consider it important to weigh economic considerations more heavily in nutrition policy decisions, the food industry is perceived as a more legitimate stakeholder in this process, increasing industry's participation, which in turn may further emphasize the weight of economic considerations, and specifically industry interests, in policy decisions. However, a number of balancing feedback processes involving government and nutrition actor networks were also identified that can limit industry instrumental power in nutrition policy processes when nefarious tactics used by industry are exposed. Notably, it appeared to be when industry participation and/or influence is otherwise limited, that they are more likely to use legal threats, including threats of trade and/or investment agreement violations to prevent policy adoption.

The food industry's use of economic and political structures to influence the policy agenda (structural power) was the most challenging form of power to capture and understand in both Chapter Six and in the system dynamics analysis in Chapter Nine. One 'vicious' feedback process was though identified whereby industry's economic power prevents certain policy options, including trade and investment policy levers, from ever being considered as viable alternatives, which in turn can facilitate further accumulation of their economic power. It was difficult to ascertain, however, to what extent industry actively drove this process, or whether economic policymakers were simply automatically adhering to policy norms dominated by the imperative for economic growth. Further, not including nutrition objectives in the overarching strategies of other nutrition-relevant policy areas including trade, investment and agriculture, inevitably leads to poor policy coherence for nutrition, weakening pro-nutrition policy norms and in turn further limiting the consideration of nutrition objectives across sectors.

Discursive power benefiting industry was found to be entrenched by feedback processes that were both agency-driven and deterministically generated from socio-economic political system dynamics, visualizing the structuration perspective (15) discussed in Chapters Two and Six. One reinforcing loop describes how industry's economic power increases its capacity to use various tactics (e.g., issue framing and narratives) to shape the political discourse, looping back to reinforce the policy norms they tend to benefit from. In another loop, the individualization of NCDs, a natural extension of a political context dominated by the imperative for economic growth, tends to limit stakeholders' ideational boundaries of conceivable policy solutions to those that do not significantly interfere with that economic imperative. As such, potentially high leverage supply-side policy options in the trade and agricultural sectors may never be considered. A third loop illustrates how the normative focus in trade investment and agricultural policy on maximizing profit and exportability by producing value-added products (like ultra-processed foods), tends to drive 'food bias' where the focus is on policy that increases the quantity not the nutritional quality of food. This in turn contributes to poor policy coherence for nutrition across sectors.

2.4.3 Regulatory chill

The realist review in Chapter Five presented evidence supporting the argument that international trade and investment agreements empower THCCs via relatively expansive rights enforced by the ISDS arbitral system. Very limited empirical evidence of regulatory chill, a specific type of policy non-decision-making where a government delays, compromises or abandons a policy to avoid an ISDS

claim, was identified. Chapter Seven was therefore primarily concerned with empirically testing if, why, in what form and under what conditions trade or investment dispute-related regulatory chill may be occurring in a 'developing' country context.

Aligned with both previous empirical studies identified (35, 36), low level of awareness was identified amongst nutrition and alcohol policymakers of South Africa's international investment obligations and the potential threat of an ISDS challenge, with an outsourcing of legal vetting of public health regulations for BIT compliance. While this indicates the potential for investment dispute-related anticipatory chill, no definitive evidence of such was found. However, WTO obligations and the perceived risk of a WTO state-state dispute had contributed to policymakers internalizing a relatively strict evidence-based policymaking approach, a general adherence to international standards/guidelines (particularly when local evidence is not available), and the design of regulations to be as least trade restrictive as possible. Health policy makers reported trade obligations (which are largely WTO-based) had limited the scope of policies and policy design options available to them, delayed the policy process and was burdensome on resources, reflecting concerns raised in previous assessments of WHO trade agreements (37-39), as well as of more recent agreements containing 'WTO-plus' and 'WTO-extra' provisions (38, 40-43). However, front of package nutrition labelling of packaged foods, health warning labelling on alcohol containers and tobacco standardized packaging were the only NCD prevention regulations identified by stakeholders to be specifically relevant to South Africa's trade obligations.

Unlike the well-known action of tobacco companies in Australian and Uruguay (44, 45), no clear evidence was identified that THCCs have resorted to threatening South Africa directly with an investor-state dispute in relation to nutrition or alcohol regulations. Rather THCCs tend to seek to protect their status as legitimate stakeholders in policymaking processes and instead use a range of 'soft power' strategies to influence policy decisions. However, South Africa's 'wait and see' response to the tobacco standardized packaging case against Australia, provides evidence that by initiating investment litigation against one country, THCCs can generate a response chill delaying the same regulatory development process in others- as has been anecdotally reported elsewhere (44, 46-49). Stakeholders also indicated that precedential chill may well have occurred if ISDS arbitrators ruled against Australia. These findings support concerns that a single investor state dispute can potentially shift decision-making power (at least temporarily) from the state to a private tribunal, not only in the litigating country, but also, in other countries around the world (44, 50). Importantly however, the

WTO cases against Australia also had a chilling effect, similarly delaying South Africa's progress towards introducing proposed standardized packaging regulation.

Informal trade-related concerns raised by trading partners and industry usually based on arguments that there is insufficient evidence for a regulation and/or it creates unnecessary barriers to trade due to cost or technical feasibility, appear to occur much more frequently than threats of BIT non-compliance. Such concerns raised either bilaterally or escalated through discussions at WTO TBT Committee meetings, were reported to potentially contribute to regulatory chill by way of delaying the policy process or leading to modifications of the regulation which may or may not reduce its effectiveness. A recent 2021 study undertook a comprehensive analysis of TBT Committee meetings between 1995 and 2016, identified 250 informal trade challenges made to health regulations during this time- 16.4% centred on food, 10.4% on alcohol and 4.2% on tobacco, with LMICs disproportionately challenged by HICs (51). Challenges were also found to, at times, use questionable scientific claims (51). The study didn't however investigate to what extent these challenges led to policy chill, this is where case study analysis as undertaken in this work can add further useful insight.

An additional kind of trade-related health policy non-decision was also identified in which, during trade agreement negotiations, a less powerful country weakens a health regulation in order to gain access to a foreign market. This has some similarities with the 'race to the bottom' theory that proposes countries increasingly lower standards (e.g. employment protection) in order to attract foreign investment (52). This was, however, only identified in an isolated trade agreement negotiation in which South African health and safety standards were allegedly reduced to allow chicken imported from the US which in turn gave South Africa access to the US market for thousands of export commodities.

Various aspects of the ISDS mechanism were reported to potentially increase the risk of regulatory chill, including lack of perceived legitimacy of ISDS process, potential arbitrator conflict of interest, lack of consistency in arbitral rulings and the cost involved, each of which have been identified in previous analyses of treaty texts and disputes (45, 53-56). In practice though, I found that the perceived high costs associated with either a WTO or an ISDS dispute could potentially have a chilling effect on health policy. Industry-related factors that may increase the risk of both ISDS-related or WTO dispute-related regulatory chill include the social acceptability of the industry and product being regulated. Linked to this, a product's perceived risk to health could also influence the willingness of policymakers to pursue a regulation. Both these findings reflect the observed willingness of Australia

and Uruguay to pursue tobacco control policies despite facing investor-state disputes. The capacity for cross-border policy learning appeared to build policymaker confidence in developing regulations that would withstand a potential trade (or possibly investment) challenge.

Overall, trade obligations/risk of *trade* dispute was a much more prominent driver of nutrition and alcohol regulatory chill than any chilling effect from investment agreement obligations/risk of *investor-state* dispute. Moreover, only a relatively narrow set of nutrition and alcohol regulations (e.g., labelling) were identified as having the potential to raise trade-related challenges.

3. RECOMMENDATIONS FOR CHALLENGING CORPORATE POWER FACILITATED BY TRADE AND INVESTMENT LIBERALIZATION IN NON-COMMUNICABLE DISEASE PREVENTION POLICY PROCESSES

Taken together, the findings of this thesis illustrate that reforming contemporary trade and investment agreement rules and dispute mechanisms is important for minimizing negative externalities on health policy making, including regulatory chill, particularly given the potential for wider use of the ISDS mechanism by THCCs in the future. However, focusing on 'rules'-based mechanisms alone will not address the complex power structures and dynamics that have emerged under neoliberalism involving governments, corporations and civil society and that promote NCD prevention policy non-decisions. Moreover, rules-based recommendations risk not being adopted unless underlying power structures that drive the economic growth imperative are challenged and dismantled. A key argument of this thesis therefore is that exposing all forms of power (both agent and structurally-driven) active in trade and health policymaking spaces is essential for identifying barriers to more progressive nutrition and alcohol regulation, and to develop strategies for greater coherence between trade and health policy and objectives. This section draws together a set of key strategies identified from considering the analyses in Chapters Four through Seven and Nine. It must be emphasized that transformative change cannot be achieved by adopting any of these strategies in isolation.

The analyses in chapter's Four, Five and Six indicate reducing industry's instrumental power to influence trade and health policy requires reducing potential conflicts of interest and increasing transparency in policymaking. Action in this domain could include civil society pressure for bans on THCC political funding and lobbying as well as closing the revolving door between government and industry. Addressing industry structural power over domestic health policy as a result of their ability to shape international health standards will require structures and rules governing interactions

between THCCs and international public health standard-setting bodies. Rules limiting industry involvement in health policy making at both the national and international level could usefully be included within a legally binding WHO 'Framework Convention' on Food Systems and/or Alcohol (57) that includes enforceable sanctions when its terms are violated. The FCTC's Article 5.3 guidelines to protect tobacco control policies against industry interference could provide a starting point (58). A more nuanced approach may however be necessary for the food industry where some argue engagement in policy is, at times, appropriate. However to date the WHO has taken a relatively vague and inconsistent position on managing conflicts engagement with the food and alcohol industry (59, 60), taking for example a cautious approach in their guidance document on preventing and managing conflicts of interest in nutrition policymaking and implementation (59, 61)

The findings of Chapter Nine suggest an international 'Framework Convention' on Food Systems could drive a number of useful reinforcing feedback processes that limit THCC participation and influence in policy development, promoting policy action and pro-health policy norms. It is important to note however that although the FCTC has promoted significant trans-sectoral progress on tobacco control in many countries, and implementation of Article 5.3 has been effective in a few, globally, Article 5.3 implementation has been slow while industry opposition to tobacco control measures has intensified (62-65). Monitoring of industry activities and exposure of industry maleficence is an important early step in promoting the adoption of rules to limit industry interference in policy development (65).

Capacity-building (through technical training on trade and health) coupled with increased co-ordination and cooperation between trade and health departments was indicated as necessary from the findings of four chapters and serves multiple related functions. Chapter Nine indicates that increased inter-departmental coordination is important for shifting from sectoral differences in interpretation of NCDs (as others have also found (66, 67)), towards developing a shared understanding of DR NCDs as products of complex structural drivers and impacts across a range of sectors, challenging corporate discursive power. This in turn, may expand non-health stakeholders' ideational boundaries of possible NCD prevention policy solutions beyond primarily demand-side options. This shift in perception, particularly amongst powerful economic actors will be critical to gain the necessary support for including NCDs objectives within the mandate of trade and economic decision-making bodies when developing their goals, strategies and policies and in the negotiations of future trade and investment agreements both at the national and regional level, a recommendation others have also pointed to (68). This may reduce corporate structural power emerging from the exclusion of health objectives from guiding trade and economic strategy and policy. Including NCD

objectives within the mandate of departments of trade should be part of broader ‘health in all policies’ approach aimed at ensuring responsibility and accountability for systematic consideration of the health implication in public policy across all sectors (69).

This links to the finding in Chapters Four, Five and Seven, that increased trade and health co-ordination will be important to promote health policy expert engagement in trade and investment policy and agreement negotiations, also found in a study of global health diplomacy in Thailand (70). This, along with mandatory health equity impact assessments on policy proposals and trade agreement draft texts, may help ensure public health policy space is better protected in future agreements for example by eliminating ISDS and requiring consideration of WHO recommendations/action plans in any dispute with implications for NCDs (71). However, major reforms to the international trade agreements require action at the multi-lateral level (discussed below). Post-treaty adoption, capacity-building and co-ordination can increase government confidence and ability to design policies that are consistent with trade and investment rules, as has been recommended as useful for tobacco control measures (65, 72). Strengthening mechanisms for policy learning across borders will also be important (73). These actions may limit the use of trade and investment agreements as tools of corporate instrumental power to generate regulatory chill or trade dispute-related policy non-decisions.

Co-ordination and co-operation between trade and health decision-making bodies must also be replicated at the international level. The Lancet Commission on Global Governance for Health, for example, proposes the establishment of a UN Multi-stakeholder Platform to address the siloed approach to policymaking with major health implications, including trade and investment policy, across the global governance system (3). It would engage governments, intergovernmental organizations (including in trade, finance, food), and non-state actors and serve as a policy platform for stakeholders ‘to frame issues, set agendas, examine and debate proposed policies that would have an effect on health and health equity... and shape action by making recommendations to the decision-making bodies of participating state, intergovernmental, market, and civil society actors’ (3). Such a body could potentially provide stronger health leadership and engagement on health issues within WTO fora; and provide technical assistance to governments to more effectively assert health goals in trade and investment policy and agreements (3).

From a trade and health perspective, the success of such a multilateral organization would depend on its effectiveness in reforming international trade and investment agreements in ways that limit both THCC instrumental and structural power. Such reforms may include for example, compulsory health

tariffs on health harmful commodities; complete carve-outs of regulations designed to protect public health; reducing the burden on health policymakers to prove regulatory effectiveness a priori, instead accepting post-adoption policy evaluation (74); eliminating ISDS; alleviating the potentially prohibitive cost for LMICs to defend a health measure in a trade or investment dispute; and requiring public health experts to sit on WTO arbitration panels residing over cases of public health relevance.

The need to strengthen broad public health advocacy networks was identified in Chapters Four, Five, Six and Nine. Chapter Four and Five highlights their utility for minimizing the effectiveness of industries trade or investment legal threats/challenges to promote NCD policy non-decisions, as others have found (48); and for increasing the visibility and legitimacy of health interests on the trade agenda, challenging industry's structural power. Chapter Six identifies that building nutrition and alcohol control advocacy network capacity and engagement with trade policy issues will be important to raise political and public awareness for existing trade and health policy incoherence (27, 75, 76). In Chapter Nine nutrition network mobilization was identified as important for increasing the salience of a nutrition problem, reflecting the findings of a recent review (77), and in turn may reduce consideration of industry interests in policy decisions.

A strict evidence-based approach to nutrition and alcohol policy, driven by industry pressure and WTO rules, was an important driver of public health policy non-decisions identified in Chapters Six and Seven and was shown in Chapter Nine to potentially maintain neoliberal policy norms that promote industry involvement in health policymaking. It may be argued the promotion of 'evidence-based policymaking' is a positive effect of WTO rules, aligning with widespread calls for better use of evidence in policymaking (78). However, it may alternatively inhibit the adoption of novel or potentially transformative policy addressing the more upstream determinants of NCDs which are inherently challenging to study and can only be supported by indirect evidence (79). This may particularly disadvantaging LMICs given their limited capacity to conduct their own research, and force reliance on international standards that are known to be industry-influenced. One potential way forward may be an 'evidence-informed and practice-based' approach to nutrition and alcohol policy decisions that promotes active policy experimentation and evaluation rather than inaction (28, 80). Such an approach must be supported by the WTO, which should take action to resolve the uncertainty regarding evidential requirements to prove the necessity of a health measure in WTO fora and confirm the acceptability of measures based on existing science or scientific logic in the absence of indisputable evidence of policy effectiveness. An alternative approach would be to shift the burden of

evidentiary requirement onto industry to show their products are not harmful which could be framed as an extension of food safety.

The Lancet Commission on Global Governance for Health also proposes the establishment of an Independent Scientific Monitoring Panel on Global Social and Political Determinants of Health (3) comprised of academic institutions and centres of excellence to investigate the complex interactions of the political, structural and social determinants leading to health outcomes and the effectiveness of different global governance arrangements for promoting and protecting health (3). Such an institution could potentially help address issues of power disparities in knowledge generation, an issue identified in Chapter Six where health departments are noted to have highly limited research budgets as compared to departments of trade and corporations, yet the burden of proof falls on them to provide the evidentiary basis for regulating unhealthy products not on corporations to prove their products are healthy. Further, ensuring evidence is communicated effectively can help address policymakers' limited knowledge of the links between trade policy and dietary change or alcohol-related outcomes, increasing the perceived relevance of economic/trade policy for addressing these health challenges.

Chapter Six indicates that challenging the invisible (discursive) power of internalized policy norms that prioritize value-added export-driven economic growth over health as a development imperative will be critical to promoting the adoption of a 'health in all policies' approach to nutrition and alcohol-related harm but also for preventing regulatory chill or trade dispute-related health policy non-decisions as suggested by the analyses in Chapter Five and Seven. This requires shifting perceptions of NCDs and risk commodity consumption as problems of individual responsibility and choice to understanding them as system-level problems requiring trans-sectoral solutions. Use of frames and narratives is a key strategy in this domain, as has been found in a case study of political priority for obesity prevention in Australia (28). Using simple frames that emphasis the direct and severe impacts of prioritizing economic/trade objectives over health (e.g., reframing NCDs as an epidemic or perhaps a food safety issue) has been useful for preventing regulatory chill of standardised tobacco packaging (27). Adopting a 'governance for health' framing that embraces policy areas/actors (e.g., trade, agriculture and social development) not explicitly health-oriented but that create the system drivers of unhealthy diets and alcohol-related harm may help these actors 'see themselves' as part of the solution. Human-rights and child protection framing may also be helpful to build broader support for health objectives across government. Moreover, such efforts must be coupled with research that directly addresses the food and alcohol industry economic arguments alongside the development of

guidelines on support for economically viable alternatives to ultra-processed foods and alcohol, as has been argued for in the area of tobacco control (65).

Making industry's economic contribution via sales of harmful products publicly and politically unacceptable can also contribute to shifting existing policy norms towards more proactive regulation of health harmful commodities (65) and reduce the risk of trade or investor-state dispute related regulatory chill according to findings in Chapter Five and Seven. Strategies to achieve this include clear communication of a product's negative impacts on public health and the importance of regulation; exposure of nefarious industry tactics to promote unhealthy consumption of these products; and exposure of the interests and values behind industry framings (65).

In Chapter Four international health instruments including standards, guidelines but particularly legally-binding agreements were identified as also contributing to shifting policy norms, limiting industry influence in health policymaking and increasing governments' confidence in adopting health measures despite trade-related concerns or legal threats (81, 82). Given they provide evidence of effectiveness and to some extent indicate necessity, international health instruments can also support the assertion of health objectives more strongly in WTO fora (83, 84). However, to adequately counter corporate power there is a desperate need for legal and regulatory mechanisms that can enforce sanctions when international health norms, laws and standards are violated by transnational corporations (85).

The SDM work in Chapter Nine highlighted that reducing the food industry's economic power will also be important since it drives many of the feedback processes entrenching all other forms of corporate power in health policymaking. A whole suite of interventions will be needed to make ultra-processed food production economically unrewarding. This could include previously mentioned strategies of embedding health objectives in trade and investment policy; regulations that internalize the true cost of food corporations' products in terms of health and environmental impacts; taxes and subsidies; and bans on marketing and advertising.

Finally, in both Chapters Four and Six this thesis proposes that adopting the strategies to challenge THCC power in trade and health policy spaces described so far, as well as their ultimate effectiveness, will likely be limited under the constraints of neoliberalism. The systems thinking perspective presented in Chapter Nine also strongly supports this claim since the overall goal or purpose driving the system arises from the core underlying paradigm. As such, this thesis argues that challenging

neoliberalism by repeatedly exposing its flaws (including capital accumulation by the few at the expense of the many), and effectively communicating viable alternatives (86) is a formidable challenge but legitimate and critical public health action for promoting transformative NCD prevention policy.

4. LIMITATIONS AND FUTURE RESEARCH AGENDA

Many of the limitations outlined in this section have been mentioned throughout the previous chapters of this thesis. In this section I summarize the key limitations and their implications and suggest some areas for future research.

4.1 Realist review

A key limitation of each of the realist reviews was that I conducted just one formal literature search, rather than repeated iterative searches as explanatory theories were refined or newly identified, as suggested by Pawson et al (87). This repeated iterative searching contributes to the already highly time consuming nature of realist reviews (88) and given the number of other aims of this PhD and the limited time and resources available, the decision was made not to conduct iterative searching in this work. This decision was deemed to reasonably balance rigor against resource and time constraints given the significant time spent on the 'front-end' developing the explanatory theories during the preliminary scoping review and as the search strategy was developed; the robustness of the formal literature search conducted; and the considerable snow-balling from bibliography searching. It is however still possible that relevant explanatory mechanisms and sources containing data that supported or challenged them were not captured in this review due to the lack of iterative searching.

It is also possible that relevant data sources were not identified due to limitations of the search strategy and the search being conducted in six databases that may have been restricted in their coverage of different disciplines, for example international law. Additionally, identification of explanatory mechanisms may have been limited due to the very small number of studies found on trade and health policy that explicitly engaged with theories of power.

At the screening stage, exclusion of books and book chapters as sources of data for developing, supporting or challenging explanatory mechanisms is a further important limitation in each of the realist reviews. The decision to exclude books and book chapters was largely a pragmatic one given time and resource constraints. However, it must be acknowledged that in doing so, the sophistication and multidisciplinary nature of the explanatory mechanisms presented in the review may well have been limited and certain evidence to support or challenge them may have been lost.

4.2 Case study analysis

In terms of data collection, I was able to secure an interview with just one policymaker/official in a high-level political role (a Deputy Director General). This may have limited my access to information on the more political dimensions of NCD prevention policymaking that takes place in closed spaces. Having said that, access to these policy actors does not necessarily mean they would have disclosed relevant information due to both formal and informal confidentiality rules. I was also only able to recruit four corporate representatives and only two of them gave consent to include their interviews in my research. However, little insightful information was in fact shared by the two who did not give permission for their interviews to be used in the research so excluding them did not significantly affect the results. Again, even in the case that I had managed to recruit a larger number of corporate representatives, it is somewhat unlikely they would be willing to respond entirely candidly to interview questions given the political nature of the research topic.

Amongst those I was able to interview, again given the highly political nature of the topics discussed and fact that many of the relevant policy discussions occur behind closed doors, there may be key mechanisms driving certain policy decisions that stakeholders did not disclose during their interviews. My own biases and limitations as an interviewer are also likely to have shaped and potentially limited the interview content as I may have asked follow-up questions to gain deeper understanding of some issues and not others. Each of these factors is likely to have contributed to limiting the richness of the data to some extent and consequently also the research findings.

Given the level of interpretation required of interview data relating to highly political processes and power relations and dynamics, the risk that my own experiences and pre-existing ideas and perceptions would bias the analysis was heightened. To reduce this risk one of my supervisors second coded two transcripts using my coding framework and we then undertook a detailed comparison of our coding and resolved any differences through discussion. Ultimately, we had a high level of inter-coder agreement despite the relative complexity of the conceptual framework being used to support the analysis.

My focus was on analysing policymaking processes and space at the policy issue level (e.g., nutrition or alcohol harm reduction) to ensure I captured as many cases as possible where trade or investment-related factors influenced the policy process. While individual policy processes were discussed as

concrete examples during the interviews and included in the analysis, the focus of the research at the policy issue level limited the degree of detail that could be covered for each specific policy process (e.g., front of package nutrition labelling). While each of these specific policies could be the object of a detailed stand-alone analysis, my data does not allow for this. Finally, the single case study design limits the generalizability of the findings to other country contexts.

4.3 System dynamics modelling

In addition to the limited interviews with policymakers/officials in high-level political roles, the interview data used for model conceptualization was limited by the interviewees' ability to explicitly recognise and describe dynamic processes and change in policymaking over time. I attempted to address this by including as many stakeholders as possible with intimate understanding of different aspect of the problem and frequently asking probing 'how' and 'why' questions and directly asking them how and why they perceived policymaking to have changed since South Africa rapidly liberalized its economy. Further, certain causal structures may have been omitted from the interviews due to stakeholders' limited awareness of how different forms of power affect their behaviour/policy processes and by their unwillingness to disclose certain information due to its politically-sensitive or confidential nature. For these reasons important variables, links and feedback structures may not have been captured in the conceptual model. While interviews were conducted in private and anonymity was offered, it was not possible to entirely mitigate this risk.

Important causal structures of NCD prevention policy inaction may also not be included in my model since I was focused on processes related to trade and investment liberalization and corporate power. Processes external to these were not included unless they were directly involved in identified feedback processes. As such, other external processes that may affect NCD prevention policy were not included.

A data reference table linking each conceptual model variable and linkage back to its source within the interviews was not included given the high number of causal relationships within the model and since variables/relationships were developed and refined iteratively during the coding process which would make developing a data reference table an extremely labour intensive process (89). While this does limit transparency of the analytical process, I decided that omitting a data source reference table could be justified given that as the coder I also collected the data, which can allow for a greater sensitivity to meaning in the data and reduce bias in coding (90, 91). Additionally, the purposive text analysis charts generated for each stakeholder interview do provide a reference for the causal

relationships included within the model, although some of the variables were iteratively developed and generalised during the coding process. The risk of modeler bias in making the 'interpretive leap' from the interview data to the conceptual model was also mitigated by conducting follow-up model validation discussion sessions with a sub-set of stakeholders to ensure accuracy of the model structure (90). In future research maintaining the links from the final conceptual model to the interview data time efficiently but also allowing for the iterative development of model variables could potentially be done using computer-assisted qualitative data analysis software such as NVivo which allows for building relationships between codes and linking these relationships to the data sources (91).

Generalizability of the conceptual model to other country contexts is limited given the context-specific nature of the problem under investigation.

Finally, since I did not proceed to quantitative simulation modelling (due to the large number of qualitative/intangible variables and major lack of data to parameterize them and generate accurate numerical equations representing their relationship to other variables), it was not possible to predict the impact of any of the identified interventions on the policymaking system behaviour over time. However, I would argue that the conceptual model alone does provide useful additional explanatory insights into the system dynamics of DR NCD policy inaction and does provide the starting point for considering the impact of various interventions on feedback relationships that drive system behaviour, as well as on more distal parts of system.

4.4 Future research

The realist reviews presented in Chapter Four and Five revealed a dearth of empirical research explicitly examining corporate power at the nexus of trade and NCD prevention policymaking and very limited empirical testing of the regulatory chill hypothesis or exploration of the broader political and economic drivers of investment-related NCD prevention policy inaction. I attempted to contribute to filling these gaps with the case study analysis presented in Chapter Six and Seven. However, additional case studies, including comparative case studies are needed to examine how power relations and dynamics between trade, corporate and health actors compare in different country contexts for example, by varying levels of economic development or socio-economic inequality, or under different (and different combinations of) political and economic paradigms. SDM should be considered as an additional useful methodological tool for such research.

Additionally, there is a need for a broader research agenda on the implications of the international investment system on NCD policy and objectives. Such an agenda should include further empirical investigation of regulatory chill, but also be extended to include questions relating to the broader political and economic drivers of investment-related NCD prevention policy non-decisions, for example, what are the barriers to greater coherence between investment and NCD policy and objectives?

A number of further research ideas also arose from the system dynamics work presented in Chapters Eight and Nine. These include formally evaluating the utility of the conceptual model for policy stakeholders (e.g., what do they learn, how does that impact the strategies they use to achieve their desired NCD prevention policy outcomes) and identifying strategies (e.g., model communication) to improve the utility of the model. Further improving the conceptual model by identifying the most dominant loops would also be useful as well as evaluating the validity of the model for different policy issues (e.g., alcohol harm reduction) and in different country contexts. Further investigation of the possibility of translating the conceptual model into a simulation model may also be warranted.

The following section positions the work conducted in this PhD within the broader global governance for health context and makes some final concluding remarks.

5. CONCLUSIONS

Currently nation states are responsible for respecting, protecting, and fulfilling their own populations' right to health, however globalisation means many important determinants of health (and policy levers) increasingly lie outside the mandate of national health departments and beyond any single government's control (3), making health equity a global political challenge. Considerations for how to promote trade and health policy coherence to improve health and health equity is therefore part of a broader, urgent discussion on how to improve global governance for health (5), an important reorientation of the concept of global health governance, defined as 'the use of formal and informal institutions, rules, and processes by states, intergovernmental institutions, and non-state actors to deal with challenges to health that require cross-border collective action to address effectively' (92). While global health governance generally refers to the governance of the actors and institutions with primary health aims, global governance for health refers to all governance areas that have implications for health, including trade and investment (3).

The Oslo Commission on Global Health Governance recognised that health inequities increasingly result from the global political determinants of health – the norms, policies and practices that arise from transnational activities and political interactions between actors (including transnational corporations, states and civil society) with different interests and degrees of power (3). The Commission particularly highlighted the formidable economic power of transnational corporations and their associated influence in global governance that national governmental departments simply cannot match. They note that the combined capital of the five largest tobacco food, beverage and pharmaceutical corporations dwarfs the GDP of 124 out of 195 states in the world (3). The Commission proposed that improving the way global governance system works can change the ways in which global political determinants of health operate, thereby improving health equity.

The findings in this thesis broadly support the five dysfunctions of the global governance system identified by the Commission in their analysis across a range of policy areas that affect health including, amongst other areas, foreign investment treaties, knowledge and intellectual property, food security and transnational corporate activity. These dysfunctions include insufficient participation and representation of civil society, health experts and marginalised groups in decision-making processes; weak accountability and poor transparency mechanisms; resistance to changing norms, rules, and decision-making procedures as needs evolve, sustaining entrenched power disparities and perpetuating health inequities; inadequate means (nationally and globally) to protect health in global policymaking arenas outside of the health sector, subordinating health under other objectives; and finally, the absence of international institutions to protect and promote health (3).

The Commission calls for transformational change to address these governance dysfunctions and proposes the establishment of two global governance for health institutions to address a gap in the current global governance institutional landscape (3). These are outlined in the previous section. However, this thesis supports critical responses to the report that the Commission's recommendations fail to address the hegemony of neoliberalism and how it operates through the powerful influence of transnational corporations that lie at the core of the dysfunctions in global governance for health (34, 93). As such its recommendations alone will fail to effectively address the existing economic and political power inequities and dynamics in global governance to achieve the goal of ensuring health objectives take greater precedent within economic and trade policymaking and in other sectors with implications for health (34, 93). In response to this shortfall in the Commission's report, McCoy suggested a new Commission on Power, Politics and Alternatives could extend the value of the Commission's analysis by deepening and broadening the analysis of politics

and power; developing proposals for an alternative development paradigm; and examining how global health professionals can support social movements challenging undemocratic processes and protesting against unfair policies (85).

Focusing on the international trade and investment system, this thesis makes a small contribution to the first objective identified by McCoy. This thesis contributes a conceptual framework for analyzing power in contemporary health policymaking and indicates its utility through applying it in both a realist review and empirical case study. Empirically this thesis provides evidence that the international trade and investment system is both influenced by and facilitates corporate power which in turn can be actively used by corporations to influence NCD prevention policy decisions. This thesis also provides evidence that corporations benefit from invisible power in health policymaking that emerges through deterministic processes of socialization and internalization of neoliberal policymaking norms. By applying novel system dynamics modelling methods this thesis also illustrates how feedback mechanisms entrench corporate power in health policymaking over time. Moreover, this work indicates that, while critical, strategies including changes to trade institutional structures, international trade and investment rules and dispute mechanisms to limit transnational corporate power, protect health policy space and promote health equity are unlikely to be achievable or successful without also considering and targeting feedback processes involving the broader political economy mechanisms of power.

Through explicit analysis of power in policymaking, the findings of this thesis indicate that achieving global governance for health – ‘a fair and equitable global governance system, based on a more democratic distribution of political and economic power that is socially and environmentally sustainable’ (3) – cannot be achieved without contesting the prevailing global market driven economic model of neoliberalism that underpins existing laws, rules and socio-economic political systems. Although not within the traditional public health domain, this thesis draws similar conclusions a few others in the field have also recently made (32, 94) – that key next steps should focus on how to mobilize public and political support for new paradigms of progress and development that are based in values of equality, solidarity and justice, are designed to reshape rather than grow the economy and aim to meet the health and social needs of the population within the means of the planet (94, 95).

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APPENDICES

APPENDIX ONE: SEARCH CONCEPTS AND TERMS FOR REALIST REVIEWS

Concept	Terms
1: Trade	'international trade' OR 'trade agreement*' OR 'trade rule*' OR 'trade law*' OR 'trade polic*' OR 'trade and investment polic*' OR 'foreign direct investment' OR 'foreign investment' OR 'international investment' OR 'investment treat*' OR 'investor state dispute settlement*' OR 'technical barriers to trade' OR 'trans-pacific partnership agreement' OR 'regional comprehensive economic agreement' OR 'transatlantic trade and investment partnership' OR WTO OR 'World trade organization'
2. Policy/regulatory chill	'Policy chill*' OR 'policy freeze' OR 'regulatory chill*' OR 'regulatory freeze' OR 'chilling effect' OR 'non-decision making' OR 'policy space' OR 'regulatory space' OR 'regulatory constrain*' OR 'policy constrain*' OR 'regulatory delay' OR 'policy delay' OR 'regulatory revers*' OR 'policy revers*'
3: Nutrition security	nutrition OR 'food polic*' OR 'food regulation*' OR 'food and beverage regulation*' OR 'food labelling' OR 'breast milk substitute*' OR 'infant formula*' OR 'food industry'
4: Tobacco control	'tobacco control' OR 'tobacco polic*' OR 'tobacco regulation*' OR 'smoke-free polic*' OR 'smoking prevention' OR 'tobacco industry'
5: Alcohol regulation	'Alcohol polic*' OR 'alcohol regulation*' OR 'alcohol labelling' OR 'alcohol industry'
6: Food, tobacco and alcohol trans-national corporations	'food industry' OR 'tobacco industry' OR 'alcohol industry' OR corporat*
7. Policy process	Policy ADJ1 (formulation OR making OR process OR development) OR governance
8. Trade-sensitive health-relevant policy areas	'health polic*' OR 'tobacco control polic*' OR 'tobacco regulation*' OR 'alcohol polic*' OR

	'alcohol regulation*' 'food polic*' OR 'food regulation*' OR 'nutrition polic*'
Search strategies: 1: Title OR Abstract ((1 OR 2) AND (3 OR 4 OR 5)) 2: Title OR Abstract (6 AND 7 AND 8)	

APPENDIX TWO: EXTRACT OF SCREENING TOOL FOR REALIST REVIEWS

Author, title of publication (year):	Type of study/source	Method stated	Data source stated (or referenced)	Empirical research	Policy area	Inclusion/Exclusion criteria: Relevant	Inclusion/Exclusion criteria: Reliable	Decision to include/exclude?	Reason for decision	Full text accessible
Al Ansari et al, Extent of alcohol prohibition in civil policy in Muslim majority countries: the impact of globalization. (2016)						RelNo		Ex	No relevant discussion about how health related policymaking processes are affected by trade-related issues	Yes
Aldis et al, The Trans-Pacific Partnership Agreement: A Test for Health Diplomacy (2013)						RelNo		Ex	No relevant discussion about how health related policymaking processes are affected by trade-related issues	Yes
Anderson, Global alcohol policy and the alcohol industry (2019)	Anrev					RelNo		Ex	No relevant trade-related factors covered	Yes
Appau et al, Disentangling regional trade agreements, trade flows and tobacco affordability in sub-Saharan Africa (2017)	AnQuant	450 H. Jarman	DYes	Yes	PTob	RelYes	QualYes	Inc	Demonstrates how the evolving trade and investment regime enables the productive and structural power of the industry	Yes

(descriptions of codes uses are on the following page)

Descriptions of codes

Type of study/source	Ananaly = other analysis; Anarb= analysis of a arbitral decision/dispute; Ancom= commentary/editorial/op ed; Anmix= mixed methods; Anfram= conceptual framework development; Andescript= descriptive; Anpol= policy analysis; AnTIAp= prospective analysis of a trade agreement; AnTIAr= retrospective analysis of a trade agreement; AnWTOmt= Analysis of WTO committee meetings; Anqual= qualitative analysis; Anrev= review; Anquant= quantitative analysis; Anlegal= legal analysis; case study= case study
Methods stated	Myes= methods stated; Mno= methods not stated
Data source stated	Dyes= data source stated or referenced; Dno= data sources and/or references not provided
Policy area	Palc= alcohol; Ptob= tobacco; Pnutr= nutritin; Pmulti= multiple policy areas
Inclusion criteria: Relevant	RelYes= yes; RelNo=no
Inclusion criteria: reliable	QualYes= yes; QualNo= no; QualCT= can't tell
Decision to include or exclude:	Inc= include; Ex= exclude

APPENDIX THREE: STAKEHOLDER INTERVIEW QUESTION GUIDES

3.1 Department of Health policymaker/official interview question guide

Thank you and introduction

I understand your role is..... and your department/organization's activities involve....

Have I got that right? Is there anything you'd like to add?

OK, thank you, I'd now like to ask you more about how X (nutrition/alcohol) policy decisions are made.

1. Could you tell me about your understanding of how X(NCD relevant-nutrition/alcohol) policy decisions are made? Have these processes changed over time? If so, in what way and why?

Can prompt to focus on relevant policy processes below:

- Ban on marketing of unhealthy food and non-alcoholic beverages to all school aged children (bill drafted in 2014)
- Nutritional front of pack labelling (currently under development)
- 11% tax on sugar sweetened beverages (estimates indicate 20% more effective)
- Code on Marketing of Infant Formula (not all elements adopted)
- Control of Marketing of Alcoholic Beverages Bill (drafted in 2013)
- Amendments of the Liquor Act of 2003 (drafted in 2013).

2. Who is involved and has influence in X policy processes and decisions?

- Within government? and outside of government? (Prompt: DTI, local businesses or foreign investors/corporations, NGOs, civil society)? International actors?
- Which channels/platforms are available/used?
 - i. Formal (e.g. stakeholder consultation)
 - ii. 'informal' (e.g. lobbying, relationship building)?
- Which actors have more or less power/influence? How has X gained/lost power?
- How have those involved in X policymaking changed over time? Why?_(Prompt: have you noticed a shift towards greater corporate involvement?)
- Who does your department build alliances with/seek support from when support is needed to advance a new X policy? How? Who does it help to 'have on your side'? Has this changed over time?
- Do new X policies in South Africa face resistance from different stakeholders? If so, how?
 - i. Which specific policies?
 - ii. From which stakeholders?
 - iii. Has this changed over time? If so, how? And why do you think this is?
 - iv. How does the DH overcome resistance to policy to achieve their preferred policy outcomes?

3. What do you think should be considered when developing X policies? (Prompt: health impact, impact on economy, avoidance of trade disputes?) Why? What should be prioritised?

- What factors do you think are actually influential in determining X policy decisions? (Prompt: health needs assessment, evidence of policy impact, cost-effectiveness analysis, donor priorities, private interests, economic concerns?) Why? Has this changed over time? Is so, in what way and why?

4. What strategies and mechanisms does your department use to advance a X policy proposal you consider to be important? What works? What doesn't work? Have these changed over time? If so, why?

- What strategies are used by stakeholders with different interests/objectives to delay or prevent adoption of X policy? Have these changed over time?
- Are there certain policies considered important by health officials that are never raised on the agenda? If so, can you explain why?

There has been concern amongst researchers and some governments, including the SA government that trade and investment liberalization may affect the development of certain health policies both directly and indirectly.

5. Do you think trade and investment liberalization may affect X policy processes and/or outcomes in South Africa either directly OR indirectly? If so, how? (Prompt with direct and indirect effects below).

- **If not**, how is X policy space maintained in the context of restrictive trade/investment commitments and conflicting trade and investment objectives?

Direct effects:

- Are you familiar with WTO disputes/challenges? In your experience, does this play a role in X policy decision-making? If so, can you explain how? Or why not?
- How does or has concern over investor flight (or a negative impact on FDI) played a role in X policy decision-making? Or if not, why not?
- Are you familiar with the investor-state dispute settlement mechanism, also known as investment arbitration? (*If not, explain ISDS to interviewee*) In your experience, does the risk of an investment dispute play a role in X policy decisions or policy decisions? If so, how? (or if not, why not?)
 - i. Can you give examples you are familiar with? (Prompt: have corporations ever threatened the SA gov with an investment dispute? Or have government perceived a threat of an investment dispute from industry?)
 - ii. For each example identified follow up with:
 - iii. How do you think it influences policy decisions? (Prompt: policy gets dropped, delays policy process, results in a policy that is less effective?)
 - iv. Why do you think it influenced/influences the policy decision?
 - v. Do you think investment disputes in other countries influence policy decisions in South Africa, if so, in what ways?
- Have you been aware of any other specific situations where TIAs or trade/investment-related concerns have affected X policy in South Africa? If so, can you explain what happened?

- Do you think the technical complexity of trade and investment agreements has resulted in government not making use of potential opportunities offered by trade and investment agreements to advance health? (e.g. compulsory licencing or innovative public health policy)

Indirect effects:

- How do you think trade and investment liberalization may have increased interest in in South Africa from corporations that produce highly processed foods and sugary beverages/alcohol/cigarettes?
 - How do you think trade and investment liberalization has changed exposures to unhealthy commodities?
 - How do you think trade and investment liberalization may have increased corporate power when it comes to influence in public policy, including public health policy?
 - Greater economic contribution?
 - Influenced public perceptions?
6. **Do you consider there to be tensions (or a lack of coherence) between South Africa’s approach to international trade (and the objectives) and public health policy (and objectives)? If so, can you explain how? Has this developed over time or always been there? If no tensions, how has this been achieved?**
 7. **Do you consider there to be tensions (or a lack of coherence) between South Africa’s approach to foreign investment (and the objectives) and public health policy (and objectives)? If so, can you explain how? Has this developed over time or always been there? If no tensions, how has this been achieved?**
 8. **How does the Department of Health and Department of Trade and Industry (or those responsible for managing trade and investment policy/agreements) work together in relation to X policy development?**
 - Are you aware of how the Department of Health deal with litigation risk?

IF A SPECIFIC POLICY IS IDENTIFIED BY STAKEHOLDERS continue with this part of the interview:
*I’d like to ask more specifically about policy Y (policy selected for in-depth analysis), if that is OK.
 (Reiterate that we are interested in the policy process and the purpose is not to question individual or organizational decisions)*

9. What was the Department of Health’s desired outcome in relation to this policy?
10. What is your understanding of who was involved in making decisions about policy Y?
11. From your understanding, can you explain the process of how decisions were made in relation to this policy?
 - How were trade and investment-related concerns influential in this process? (Prompt: concerns over investor flight, WTO dispute or ISDS litigation)
 - How did the Department of Health attempt to achieve their desired policy outcome? (Prompt: framing of issue? Building alliances? Seeking guidance from trade experts?)
 - What worked, and why? What didn’t work, and why?
 - How did other stakeholders attempt to achieve their desired policy outcome?

3.2 Department of Trade and Industry policymaker/official interview question guide

Thank you and introduction

I understand your role is..... and your department/organization's activities involve.... Have I got that right? Is there anything you'd like to add?

There has been concern amongst some researchers and some governments, that trade and investment liberalization may affect the development or implementation of certain health policies. This can be via both direct and indirect links- we are interested in learning about your understanding of these links.

1. Could you tell me about your understanding of how X(nutrition/alcohol) policy decisions are made? Have these processes changed over time? If so, in what way and why?

Can prompt to focus on relevant policy processes below:

- Ban on marketing of unhealthy food and non-alcoholic beverages to all school aged children (bill drafted in 2014)
- Nutritional front of pack labelling (currently under development)
- 11% tax on sugar sweetened beverages (estimates indicate 20% more effective)
- Code on Marketing of Infant Formula (not all elements adopted)
- Control of Marketing of Alcoholic Beverages Bill (drafted in 2013)
- Amendments of the Liquor Act of 2003 (drafted in 2013).
- International Code on Marketing of Breast Milk Substitutes

2. What did/does DTI consider key priorities when developing X policies? (Prompt: health impact, impact on economy, avoidance of trade disputes?) Why? What should be highest priority?

- What factors do you think are actually influential in determining X policy decisions? (Prompt: health needs assessment, evidence of policy impact, cost-effectiveness analysis, donor priorities, private interests, economic concerns?) Why? Has this changed over time? Is so, in what way and why?

3. Who is involved and has influence in X policy processes and decisions?

- Within government? and outside of government? (Prompt: DTI, local businesses or foreign investors/corporations, NGOs, civil society)? International actors?
- Which channels/platforms are available/used?
 - i. Formal (e.g. stakeholder consultation)
 - ii. 'informal' (e.g. lobbying, relationship building)?
- Which actors have more or less power/influence? How has X gained/lost power?
- Have you been aware of any situations when private companies (local or foreign) have attempted to influence X policy? If so, how have they attempted to achieve this?
- How have those involved in X policymaking changed over time? Why? (Prompt: have you noticed a shift towards greater corporate involvement?)
- Who does your department build alliances with/seek support from when support is needed to advance a new X policy? How? Who does it help to 'have on your side'? Has this changed over time?

4. **What strategies and mechanisms does your department use to influence X policy? Have these changed over time? If so, why?**

- Who does your department build alliances with when support is needed to influence X policy? Has this changed over time?

5. **How to you think trade and investment liberalization may affect policy processes related to reducing consumption of alcohol or highly processed foods/sugary beverages in South Africa either directly OR indirectly? If so, how?** (Prompt with direct and indirect effects below)

Direct effects:

- In your experience, do you think WTO disputes/challenges may play a role in X policy decision-making? If so, can you explain how?
- How does investment concerns play a role in X policy decision-making?
- In your experience, does the risk of an investment dispute play a role in X policy decisions or policy decisions? If so, how?
 - i. Can you give examples you are familiar with? (Prompt: have corporations ever threatened the SA gov with an investment dispute? Or have government perceived a threat of an investment dispute from industry?)
 - ii. For each example identified follow up with:
 - iii. How do you think it influences policy decisions? (Prompt: policy gets dropped, delays policy process, results in a policy that is less effective?)
 - iv. Why do you think it influenced/influences the policy decision?
 - v. Do you think investment disputes in other countries influence policy decisions in South Africa, if so, in what ways?
- Have you been aware of any other specific situations where TIAs or trade/investment-related concerns have affected X policy in South Africa? If so, can you explain what happened?
- Do you think the technical complexity of trade and investment agreements has resulted in government not making use of potential opportunities offered by trade and investment agreements to advance health? (e.g. compulsory licencing or innovative public health policy)

Indirect effects:

- How do you think trade and investment liberalization may have increased interest in South Africa from corporations that produce highly processed foods and sugary beverages/alcohol/cigarettes?
- How do you think trade and investment liberalization has changed availability of unhealthy foods and alcohol inSA?
- How do you think trade and investment liberalization may have increased corporate power when it comes to influence in alcohol and food policy, including public health policy?
 - Greater economic contribution?
 - Influenced public perceptions?

6. Do you consider there to be tensions (lack of coherence) between trade policy (and objectives) and public health policy (and objectives)? If so, can you explain how? Has this developed over time or always been there? Prompt: do you think SA approach to international trade may have implications for efforts to reduce consumption of alcohol or highly processed foods/sugary drinks?

7. Do you consider there to be tensions between investment policy (and objectives) and public health policy (and objectives)? If so, can you explain how? Has this developed over time or always been there? Prompt: do you think SA's approach to foreign investment may have implications for efforts to reduce consumption of alcohol or highly processed foods/sugary drinks?

8. How does the Department of Health and Department of Trade and Industry (or those responsible for managing trade and investment policy/agreements) work together in relation to X policy development?
 - Is DTI or any other government department responsible for considering trade and investment-related legal risks in relation to any new/novel X policy under consideration? If so, what is the risk assessment process?
 - What other role do you (and/or your department) have in X policy development?

IF A SPECIFIC POLICY IS IDENTIFIED BY STAKEHOLDERS continue with this part of the interview: *I'd like to ask more specifically about policy Y (policy selected for in-depth analysis), if that is OK. (Reiterate that we are interested in the policy process and the purpose is not to question individual or organizational decisions)*

9. From your understanding, what was the Department/Ministry of Trade's preferred outcome in relation to this policy?

10. What is your understanding of who was involved in making decisions about policy Y?

11. From your understanding, can you explain the process of how decisions were made in relation to this policy?
 - How were trade and investment-related concerns influential in this process? (Prompt: concerns over investor flight, WTO dispute or ISDS litigation)
 - How did the Department/Ministry of Trade attempt to achieve their desired policy outcome? (Prompt: alliances?)
 - How did other stakeholders attempt to achieve their desired policy outcome?

3.3 Academics, international organizations, non-governmental organizations and civil society organizations interview question guide

Thank you and introduction

I understand your role is..... and your department/organization's activities involve.... Have I got that right? Is there anything you'd like to add?

OK, thank you, I'd now like to ask you more about how X (nutrition/alcohol/tobacco) policy decisions are made.

1. Could you tell me about your understanding of how (nutrition/alcohol) policy decisions are made and who is responsible for these decisions? Have these processes changed over time? If so, why?

Can prompt to focus on relevant policy processes below:

- Ban on marketing of unhealthy food and non-alcoholic beverages to all school aged children (bill drafted in 2014)
- Nutritional front of pack labelling (currently under development)
- 11% tax on sugar sweetened beverages (estimates indicate 20% more effective)
- Code on Marketing of Infant Formula (not all elements adopted)
- Control of Marketing of Alcoholic Beverages Bill (drafted in 2013)
- Amendments of the Liquor Act of 2003 (drafted in 2013).

2. Who is involved and has influence in X policy processes and decisions?

- Within government? and outside of government? (Prompt: DTI, local businesses or foreign investors/corporations, NGOs, civil society)? International actors?
- Which channels/platforms are available/used?
 - i. Formal (e.g. stakeholder consultation)
 - ii. 'informal' (e.g. lobbying, relationship building)?
- Which actors have more or less power/influence? How has X gained/lost power?
- How have those involved in X policymaking changed over time? Why?_(Prompt: have you noticed a shift towards greater corporate involvement?)
- Who does your department/organization build alliances with/seek support from when support is needed to advance a new X policy? How? Who does it help to 'have on your side'? Has this changed over time?
- Do new X policies in South Africa face resistance from different stakeholders? If so, how?
 - i. Which specific policies?
 - ii. From which stakeholders?
 - iii. Has this changed over time? If so, how? And why do you think this is?
 - iv. How is resistance to policy overcome?

3. What do you think should be considered when developing X policies? (Prompt: health impact, impact on economy, avoidance of trade disputes?) Why? What should be prioritised?

- What factors do you think are actually influential in determining X policy decisions? (Prompt: health needs assessment, evidence of policy impact, cost-effectiveness)

analysis, donor priorities, private interests, economic concerns?) Why? Has this changed over time? Is so, in what way and why?

4. What strategies are you aware of that different stakeholders (DH, DTI, industry, civil society) use to advance their preferred policy agenda? What works, what doesn't work? Have these changed over time? If so, how and why do you think this is?

- Have corporations influenced the perceptions and beliefs of politicians and or the public (such that they support policies that are not necessarily in their own best interest)

5. Are there certain X policies you consider to be important that are never raised on the agenda? If so, can you explain why you think this is?

There has been concern amongst researchers and some governments, including the SA government that trade and investment liberalization may affect the development of certain health policies both directly and indirectly.

6. Do you think trade and investment liberalization may affect X policy processes and/or outcomes in South Africa either directly OR indirectly? If so, how? (Prompt with direct and indirect effects below).

- **If not**, how is X policy space maintained in the context of restrictive trade/investment commitments and conflicting trade and investment objectives?

Direct effects:

- Are you familiar with WTO disputes/challenges? In your experience, does this play a role in X policy decision-making? If so, can you explain how?
- How does or has concern over investor flight (or a negative impact on FDI) played a role in X policy decision-making?
- Are you familiar with the investor-state dispute settlement mechanism, also known as investment arbitration? (*If not, explain ISDS to interviewee*) In your experience, does the risk of an investment dispute play a role in X policy decisions or policy decisions? If so, how?
 - i. Can you give examples you are familiar with? (Prompt: have corporations ever threatened the SA gov with an investment dispute? Or have government perceived a threat of an investment dispute from industry?)
 - ii. For each example identified follow up with:
 - iii. How do you think it influences policy decisions? (Prompt: policy gets dropped, delays policy process, results in a policy that is less effective?)
 - iv. Why do you think it influenced/influences the policy decision?
 - v. Do you think investment disputes in other countries influence policy decisions in South Africa, if so, in what ways?
- Have you been aware of any other specific situations where TIAs or trade/investment-related concerns have affected X policy in South Africa? If so, can you explain what happened?
- Do you think the technical complexity of trade and investment agreements has resulted in government not making use of potential opportunities offered by trade and

investment agreements to advance health? (e.g. compulsory licencing or innovative public health policy)

Indirect effects?

- How do you think trade and investment liberalization may have increased interest in South Africa from corporations that produce highly processed foods and sugary beverages/alcohol/cigarettes?
- How do you think trade and investment liberalization has changed exposures to unhealthy commodities?
- How do you think trade and investment liberalization may have increased corporate power when it comes to influence in public policy, including public health policy?
 - Greater economic contribution?
 - Influenced public perceptions?

7. **Do you consider there to be tensions (lack of coherence) between trade policy and alcohol/food policy and objectives related to unhealthy food/alcohol? If so, can you explain these?**

8. **What about tensions (or lack of coherence) between investment policy and alcohol/food policy and objectives related to unhealthy food/alcohol? If so, can you explain these?**

9. **How does the Department of Health and Department of Trade and Industry (or those responsible for managing trade and investment policy/agreements) work together in relation to X policy development?**

- Are you aware of how the Department of Health deal with litigation risk?

IF A SPECIFIC POLICY IS IDENTIFIED BY STAKEHOLDERS continue with this part of the interview: *I'd like to ask more specifically about policy Y (policy selected for in-depth analysis), if that is OK. (Reiterate that we are interested in the policy process and the purpose is not to question individual or organizational decisions)*

10. What is your understanding of who was involved in making decisions about policy Y?

11. From your understanding, can you explain the process of how decisions were made in relation to this policy?

- How were trade and investment-related concerns influential in this process? (Prompt: concerns over investor flight, WTO dispute or ISDS litigation)
- How did stakeholder attempt to achieve their desired policy outcome? (Prompt: framing of issue? Building alliances? Seeking guidance from trade experts?)
- What worked, and why? What didn't work, and why?

3.4 Industry/corporation interview question guide

Thank you and introduction

I understand your role is..... and your department/organization's activities involve.... Have I got that right? Is there anything you'd like to add?

OK, thank you, I'd now like to ask you more about your understanding of how X (nutrition/alcohol/tobacco/medicine) policy decisions are made.

- 1. What do you think should be prioritised when deciding on new X policies? (Prompt: health impact, impact on economy, avoidance of trade disputes?) Why?**

Private sector involvement in policy making is recognised by many to be important to ensure policies are effective

- 2. Are you, or anyone in your company, involved in any way in X policymaking in South Africa? If so, can you explain this involvement?**

- Has your company's involvement in X policy changed over time? If so how and why do you think this has happened?

- 3. What strategies does your company uses or has used to ensure business interests are protected in relation to new X policy? What works/doesn't work? Have these changed over time? If so, why?**

- Who does your company build alliances with in relation to a new X policy? How is this achieved?

There has been concern amongst researchers and some governments, including the SA government that trade and investment liberalization may affect the development of certain health policies both directly and indirectly.

- 4. Do you think trade and investment liberalization may affect public health policymaking in South Africa? If so, how?**

- Are you aware of any specific situations where your company has been concerned that a X policy may be in breach of certain trade and investment rules in South Africa? If so, can you explain what happened?
- Do you think existing international trade and investment rules in SA provide protection to your company's business interests in relation to potential new X policy? If so, can you explain how and which specific T&I rules?
- Do you think concerns over investment has or could play a role in X policy decision-making? Can you explain how and why?
- Are you familiar with the investor-state dispute settlement mechanism, also known as investment arbitration? Is this a legal mechanism your company has ever considered using, can you explain why or why not?
- How do you think trade and investment liberalization may have increased interest in South Africa from X corporations?

- How do you think trade and investment liberalization has changed exposures to certain foods/alcohol/cigarettes?
- How do you think trade and investment liberalization may have increased corporate power when it comes to influence in public policy, including public health policy?
 - i. Greater economic contribution?
 - ii. Influenced public perceptions?

5. **Do you consider there to be tensions between trade and investment policy (and objectives) and public health policy (and objectives)? If so, can you explain how? Has this developed over time or always been there?**

IF A SPECIFIC POLICY IS IDENTIFIED BY STAKEHOLDERS continue with this part of the interview: *I'd like to ask more specifically about policy Y (policy selected for in-depth analysis), if that is OK. (Reiterate that we are interested in the policy process and the purpose is not to question individual or organizational decisions)*

6. From your understanding, what was your organization's preferred outcome in relation to this policy?
7. What is your understanding of who was involved in making decisions about policy Y? Was your company involved?
8. From your understanding, can you explain the process of how decisions were made in relation to this policy?
 - How were trade and investment-related concerns influential in this process? (Prompt: concerns over investor flight, WTO dispute or ISDS litigation)
 - Did your organization use any strategies to achieve its' desired policy outcome? (Prompt: Issue framing? Alliances? Use of TIAs as legal tools? Use of other leverage points?)
 - How did other stakeholders attempt to achieve their desired policy outcome?

APPENDIX FOUR: EXAMPLE OF PURPOSIVE TEXT ANALYSIS CODING CHART

Below is an excerpt of purposive text analysis of one of the stakeholder interviews using the coding chart (1). This figure illustrates how causal phrases are identified within stakeholder statements and translated into a causal or effect model variable. A corresponding words and arrow diagram is then developed illustrating the causal structure and the relationship type between each variable (positive or negative).

Participant quotation:	Causal phrases requiring interpretation:	Model variable:
<p><u>So the minute we start specifying certain things in a regulation [1], the next product that come out, will be able to go through that.</u> So that's what we constantly also have to formulate in the legislation, is to say, we can't really list everything because they'll find something else that, like you'll call something a yoghurt. You can only use a yoghurt as in this, this, this. Now <u>lots of people eat yoghurt, but now you regulate it: what the composition must be, or whatever the scenario must be.</u> Then <u>they'll come along with something called Yogetta or something, it's for the consumer to know what it is, but it's not actually yoghurt because they're trying to get around legislation</u> and the content</p>	<p><i>So the minute we start specifying certain things in a regulation</i></p>	<p>Public health regulation (causal)</p>
	<p><i>the next product that come out, will be able to go through that.</i></p>	<p>Product innovation (effect)</p>
	<p><i>So that's what we constantly also have to formulate in the legislation</i></p>	<p>Public health regulation (effect)</p>
	<p><i>Lots of people eat yoghurt</i></p>	<p>Consumption of unhealthy product (causal)</p>
	<p><i>but now you regulate it: what the composition must be, or whatever the scenario must be</i></p>	<p>Public health regulation (effect)</p>
	<p><i>they'll come along with something called Yogetta or something, it's for the consumer to know what it is, but it's not actually yoghurt because they're trying to get around legislation</i></p>	<p>Industry product innovation (effect)</p>
	<p>Main argument:</p> <p>When public health regulation is introduced in response to high consumption of an unhealthy product, the food industry is able to adapt their products in response, requiring further amendments to the regulation.</p>	
<p>Drawing of causal structure:</p> <pre> graph LR A[Consumption of unhealthy product] -- "+" --> B[Public health regulation] B -- "+" --> C[Industry product innovation] C -- "-" --> B </pre>		

References

1. Tomoaia-Cotisel A. The Journey toward the Patient-Centered Medical Home: A Grounded, Dynamic Theory of Primary Care Transformation. London: London School of Hygiene and Tropical Medicine; 2018.

APPENDIX FIVE: PREVALIDATED SHARED MENTAL MODEL

Variables and links that were identified from the stakeholder interviews are coloured black and green respectively. Variables or links included in the Shared Mental Model (SMM) based on findings of the previously conducted realist review are presented as purple variables and dashed purple lines in the sub-sections of the pre-validation SMM below. If these variables and/or links were validated by stakeholders during the validation discussions, they were converted to black variables and green links in the final conceptual model presented in the paper. Variables or links that were added to the model or re-conceptualized as a result of the validation interviews are presented here in pink. As for the conceptual model variables linking to two other sub-systems are orange, variables linking to one other sub-system are blue and variables only within one sub-system are black. Names of feedback loops are in red.

Figure A5.1 SMM Sub-System I: Trade and investment liberalization, corporate economic power and NCDs

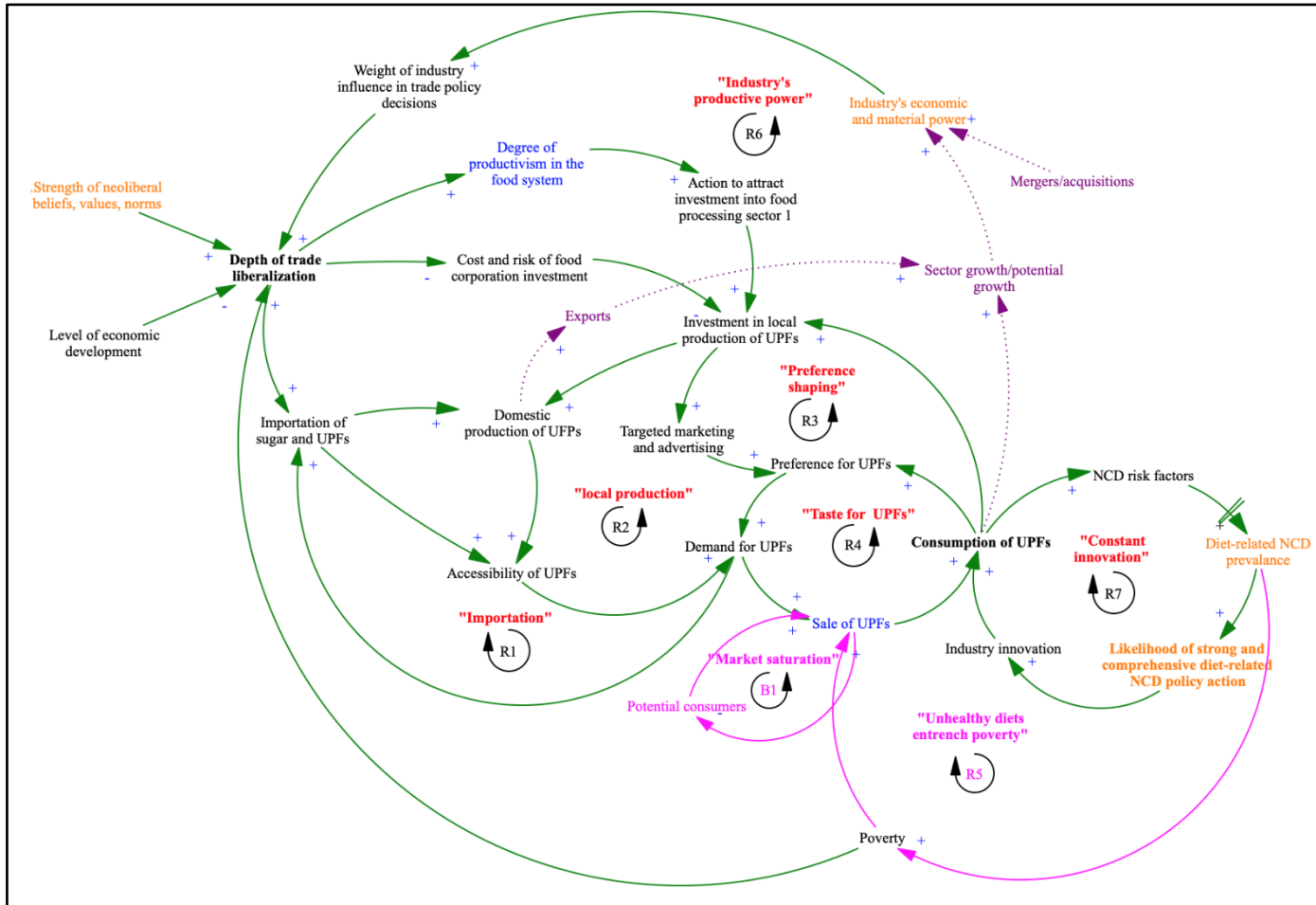
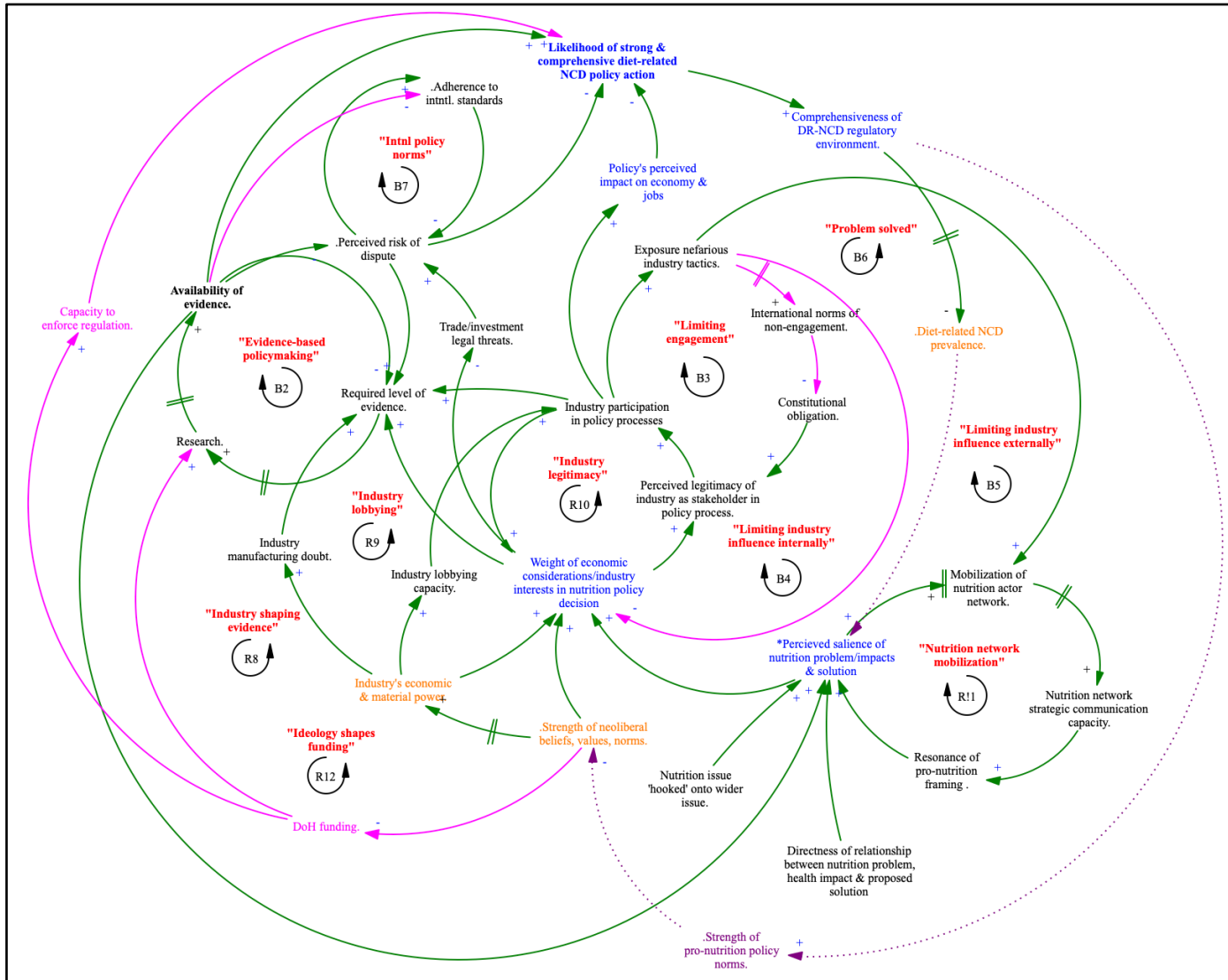








Figure A5.2 SMM Sub-system II: Instrumental power



Key

<p>Arrows indicate the direction of the influence</p>	
<p>Positive polarity indicates that the influencing variable and the receiving variable change in the same direction</p>	
<p>Negative polarity indicates the receiving variable changes in the opposite direction of the influencing variable</p>	
<p>Delay between cause and effect</p>	
<p>Reinforcing loop</p>	
<p>Balancing loop</p>	

APPENDIX SIX: INTERNATIONAL TRADE RULES WITH THE POTENTIAL TO RESTRICT REGULATION OF RISK COMMODITIES

Since the break-down of the World Trade Organization's (WTO) Doha Round negotiations, developed countries with support from transnational risk commodity corporations (THCCs), have pursued progressively expansive trade and investment liberalization through alternative means than those provided by the multilateral WTO process (1-3). These include bilateral investment treaties (BITs) and, increasingly, large regional trade and investment agreements (RTAs) (1, 2, 4, 5). Compared to earlier agreements, contain 'WTO-plus' provisions that are deeper than minimum WTO obligations (6-8) and 'WTO-extra' provisions that extend 'behind borders' to reduce what are considered to be non-tariff barriers to trade (6). RTAs including the Trans-Pacific Partnership Agreement (TPPA) which, despite US withdrawal, is set to be concluded between 11 Asia-Pacific Rim countries (1, 9), the Regional Comprehensive Economic Partnership (RCEP) between 16 Asia-Pacific countries (10) and the Comprehensive Economic and Trade Agreement (CETA) between Canada and the EU (11), are likely to be particularly important given the collective size of the economies involved, the political power of many of the negotiating governments (12), and the political leverage held by large THCCs originating from/operating in negotiating countries. However, currently the majority of developing countries' obligations remain limited to WTO rules, with governments cautious not to make deeper obligations that may negatively impact social and economic development. So, while more recent prospective analyses argue that RTAs may have particularly restrictive effects on health policy processes, we have included an analysis of relevant WTO agreements as well as WTO-plus and WTO-extra provisions included within more recently negotiated RTAs.

General Agreement on Tariffs and Trade (GATT)

GATT lays out rules for treatment of products in international trade. The most important of these are the obligations of non-discrimination: the 'most-favoured nation' (MFN) in Article I requires that states give equally favourable treatment to 'like' products of all other members; the 'national treatment' in Article III requires that states treat foreign products at least as favourably as 'like' domestic products when they regulate (13). This constrains governments' ability to use measures that discourage consumers from developing a taste from imported alcohol products, particularly those with higher alcohol content or those targeted at adolescents (14). There have been a number of such cases, for example the US, Canada and the European Commission have invoked the national treatment rule over Japan's high taxes on import alcohol successfully arguing that vodka, gin, rum and whiskey and other spirits are 'like' Japan's traditional spirit shochu, as a result, liquor prices in Japan dropped (15), a

similar ruling was made against Korea (16), the UK, Ireland and Nordic countries (14). In a Chilean case a WTO panel rules that spirits with higher alcohol content could not be taxed at a higher rate since this in effect favoured Chilean liquor pisco that had lower percentage alcohol than imported spirits (16). The US has also used GATT rules to argue that Canadian provincial liquor taxation levels and minimum pricing were discriminatory against less expensive imported US beer (16).

GATT articles XIV and XX recognize the protection of human health as an interpretive principle giving countries the space to adopt trade restrictive measures when it is 'necessary to protect human, animal or plant life and health' (17). However, as discussed in detail below, a country must satisfy three successive threshold tests. Firstly, they must prove that the policy in question is designed to protect human, animal or plant life or health; contributes to a legitimate health objective and is necessary to protect health with no alternative less trade restrictive measure available; and is not arbitrarily or unjustifiably discriminatory between countries and is not a disguised restriction on trade (18). Some argue this provision has been interpreted narrowly (15), a position potentially supported by a 2015 report finding that just one of 44 attempts to invoke Article XX, (or the equivalent provision in GATS), had ever been successful. The exception was considered relevant in just 33 of these cases, and in most of these (18 cases) the governments involved were unable to sufficiently prove the measures were 'necessary to' or 'related to' protecting health or conserving natural resources (18). After lobbying by the US Cigarette Exporters' Association, the US challenged Thailand under GATT for prohibiting imported cigarettes (19, 20). Thailand attempted to use the exemption for public health protection arguing that opening their market would increase smoking prevalence (19). For example, the Thai government argued that increased competition 'would lead to the use of better marketing techniques (including advertising), a wider availability of cigarettes, a possible reduction of their prices, and perhaps improvement in their quality' (19). Thailand also claimed 'the United States cigarette industry would exert great efforts to force governments to accept terms and conditions which undermined public health and government were left with no effective tool to carry out public health policies' (20). This argument required demonstrating with sufficient evidence that market restrictions were necessary to prevent increased smoking prevalence and was the least trade restrictive option available (19). The panel rejected Thailand's argument ruling that the restriction breached non-discrimination obligations under GATT and suggested that 'there were various measures consistent with the General Agreement which were reasonably available to Thailand to control the quality and quantity of cigarettes smoked and which, taken together, could achieve the health policy goals that the Thai government pursues by restricting the importation of cigarettes inconsistently with Article XI:1' (19). Arguably, this can be interpreted as a narrow interpretation of the

health exception by WTO panels showing insensitivity to the challenges faced by developing countries in regulating tobacco when multi-national tobacco corporations enter then market (20). Others have gone further to suggest this case also indicates that 'necessity' can be interpreted 'with a bias against rules that discriminate against foreign investors' (14). The US used the same argument to force open Taiwan and South Korea's market to foreign tobacco companies (16). In part due to the previous failed attempts to invoke Article XX but also due to the inclusion of investment chapters (discussed in a related review) providing investors extensive rights and privileges that can conflict with governments' attempts to regulate in the interest of health or the environment, there is significant concern amongst some experts that importing Article XX into new multilateral agreements like the TPPA would be ineffective at protecting health and the environment (18).

Tariffs can be an important source of government revenue for LMICs and commitments under the WTO to lower tariffs before adequate alternative taxation mechanisms are developed has been found to reduced public revenue in many LMICs (21). At the same time the legal, regulatory and other infrastructure required to comply with trade agreements can place significant additional financial burden on LMICs (21). This may have indirect impacts on the public finances available for public health policy development and implementation (22).

More recently negotiated trade and investment agreements including the TTIP propose deeper reductions or elimination of tariffs on some certain risk commodities including processed foods and alcohol. Such reductions on processed foods are predicted to generate one of the largest percentage increases in imports of goods by sector (23). In the TTIP for example, evidence indicates imports into the EU of US agri-food produce may increase two-fold by 2025, although this is from a low baseline. The CETA agreement eliminates all import tariffs on alcohol and Spirits Canada have stated they expect to double their exports to Europe, particularly targeting Eastern Europe (23). Increased availability is likely to lead to reduced cost and increasing the availability of unhealthy foods and alcohol which may pose challenges to developing effective nutrition and alcohol policy (23).

It may however be possible for governments to counter such tariff reductions with tax, since it is not considered a technical barrier to trade. For example, while NAFTA resulted in a significant reduction in tariffs on soft drinks in Mexico, after pressure from public health stakeholders, the Mexican government introduced a tax on soft drinks (23). However, similar fiscal policies to reduce the affordability of other certain unhealthy foods may be challenging to apply without THCCs attempting to raise a trade challenge since it is possible that a regulation or tax rate could affect an imported

product or product from a specific country disproportionately as compared to an arguably 'like' domestic product (13, 21). For example, a policy of applying variable tax rates to different food products in an effort to influence consumption patterns, where those with lower rates are generally locally produced foods; or labelling regulations that applies only to specific food product categories, where the majority of those types of products are imported from a particular country (13). Discrimination would only be allowed on public health grounds if the measure is supported by sufficient evidence that it is 'necessary' to achieve certain health objectives, it is not a disguised restriction on trade and no other reasonable less trade-restrictive alternative is available (13).

Agreement on Sanitary and Phytosanitary Measures (SPS)

The WTO SPS Agreement sets out procedural and substantive requirements aimed at preventing domestic health and safety standards from unnecessarily impeding international trade (directly or indirectly) (24). This includes any measure adopted to protect consumers from food-borne risks (e.g. from food additives, contaminants, toxins or disease causing organisms) and protect consumers from disease-related risks including import bans, processing and product standards and information tools such as labelling requirements (24). Measures are generally considered consistent with the SPS if they are based on a relevant international standard (e.g. Codex Alimentarius Commission) (25). It is a significant concern however that such standards are highly influenced by multinational food corporations (25).

When a domestic measure is stricter than international standards, the state must scientifically justify the measure based on a risk assessment that may, according to the SPS, be 'based on' minority scientific opinion, essential for allowing application of the precautionary principle (24, 26). THCCs however have supported a move in more recently negotiated agreements to higher levels of evidential requirements to justify new regulations, including in SPS regulations. For example, PMI's comments on the TPP states that they support 'negotiations that promote... science-based regulations' (27) and the TPPA's draft SPS Chapter reflects this, stating that if a country's regulation exceeds international standards, they will be required to provide 'documented and objective scientific evidence' potentially raising the level of evidence required to defend an SPS regulation related to food, alcohol or tobacco that exceeds international standards, effectively curtailing the use of the precautionary principle (24). Similarly, the draft SPS Chapter in the TTIP requires that Members' SPS measures are based on international standards or scientific risk assessment with the right to apply the precautionary principle only to the extent necessary. This demand for higher levels of evidence to justify a trade restrictive health policy included in more recent trade agreements may contribute to a political reluctance to

implement novel policies to address the complex problems of reducing consumption of unhealthy food and alcohol since the impact of such policies cannot be directly measured a priori but rather may often require a 'learning by doing' approach (28).

Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)

The TRIPS agreement deals with intellectual property rights including trademarks and patents making it relevant to alcohol, food and tobacco control policies. THCCs have specifically called for a 'TRIPS-plus' chapter in the TPPA which may protect their use of trade-marks allowing THCCs to challenge the introduction of, plain packaging or potentially other forms of risk commodity advertising, which according to legal experts, is not possible under the existing WTO TRIPS Agreement that protects their right to register a trademark but not to use it (29-31). This has not prevented THCCs arguing that existing TRIPS rules have been violated by regulations restricting their use. Most recently, PMI argued Australia's plain packaging regulation violated TRIPS. Earlier in 1995 after Guatemala introduced legislation aligned with the WHO's International Code on Marketing of Breastmilk Substitutes that prohibited marketing by showing pictures of babies, on behalf of Gerber Foods, the US initiated a WTO dispute threatening Guatemala with withdrawal of most favoured nation trading status for violating trademark rules (17, 32). This threat likely played a role in the Guatemalan Supreme Court ruling that Gerber would be exempt from an obligation to comply with the labelling regulations (32).

Technical Barriers to Trade (TBT) Agreement

The TBT Agreement aims to ensure that domestic standards, technical regulations and conformity assessment procedures do not discriminate against foreign producers or create unnecessary obstacles to trade (33). The TBT covers technical regulations and standards including a number relevant to tobacco, alcohol and food policy space including for packaging, labelling or product content (e.g. sugar, salt or trans-fat content) regulations (13). Two key TBT Agreement obligations that affect risk commodity regulatory space are the non-discrimination obligation and the requirement to use 'least trade restrictive measures' to achieve a health objective (20). Harmonization is also a key element of the TBT agreement and members are expected, where possible, to use international standards as the basis of technical regulations (20) and in this case are 'presumed not to create an unnecessary obstacle to international trade' (13). Over the past five years, nutrition and alcohol labelling have been repeatedly raised in the TBT Committee as a specific trade concern. Members have argued such regulations may be more trade restrictive than necessary with other less trade restrictive alternatives available, are not based on international standards and in this context, insufficient scientific evidence, and/or were discriminatory (13, 33). For example eleven countries raised concerns that Peru's

proposed front of package interpretive nutrition labelling may be more trade restrictive than necessary to achieve the stated objective of reducing obesity to combat NCDs and was not based on sufficient scientific evidence to demonstrate this (33, 34); concerns were also raised that Chile's labelling of foods high in fat, sugar, calories or salt deviated from international standards, may not have a scientific basis and would be more trade restrictive than necessary (33); comments were made that Indonesia should consider less trade restrictive alternative measures to their proposed labelling (for example education campaigns); and some members complained Thailand's proposed labelling discriminated against snack foods (33). Since 2010 there have also been nine alcohol health warning labels that have been raised as a specific trade concern (35) most commonly on the grounds that the proposal is more trade restrictive than necessary and/or that the measure is not consistent with international standards (35). In 2011 twenty WTO members complained that Canada's 'Cracking Down on Tobacco Marketing Aimed at Youth Act' initiative that prohibited tobacco products containing certain additives would effectively exclude blended cigarettes using tobacco from specific countries including Malawi, Kenya and Uganda, which was in violation of the TBT (36, 37). Brazil's even stricter ban on the use of additives with the goal of reducing the attractiveness of smoking has also been subject to discussion at the TBT Committee (37). The comprehensive scope of the ban could in effect eliminate almost all blended cigarettes from the Brazilian market which account for nearly all cigarettes sold, as such the measure was criticised as being more trade restrictive than necessary and without sufficient scientific basis (37). Also under Article II of the TBT, members are obligated to notify the WTO of proposed technical regulations and allow sufficient time to receive and take into consideration other members' comments (33, 35).

The TBT chapter in the TPPA goes beyond WTO TBT commitments in two main ways. First it provides new avenues for THCCs to participate in regulatory development 'on terms no less favourable than those it accords to its own persons' creating the potential of regulatory capture (26). Secondly, while the WTO TBT infers that a regulation that complies with an existing international standard is not in violation of the agreement, the TPPA TBT calls on members to co-operate in developing international standards such that they 'do not create unnecessary barriers to international trade'. This has the potential to weaken international health standards and by default also domestic health regulations (26). Further, the TBT states that 'nothing...shall prevent a Party from adopting or maintaining technical regulations or standards' provided, however, that these are 'in accordance with its rights and obligations under this Agreement' (art.8.3), so only health regulations that are otherwise compliant with the TBT are permitted (26).

General Agreement on Trade in Services (GATS)

GATS commitments state the extent of access foreign service providers are allowed (14) and each country chooses which specific sectors they wish to open to international trade. GATS contains two main obligations that apply to all sectors covered under trade in services: non-discrimination (similar to the GATT and TBT agreements), and a transparency provision obligating prompt notification of all measures affecting trade in services (13, 14). Deeper commitments including restrictions on domestic regulation of services only apply when a country has specifically committed to such for a certain service sector or type of trade in services (13). Services relevant to risk commodities that may be covered under GATS include for example packaging, retail and distribution and advertising (27). Relevant provisions include the market access provisions that prohibits limitations on the number of service suppliers, service operations or participation of foreign capital in sectors covered under the agreement (14). Many members have made commitments under 'distribution services' for example which may limit policy-makers' capacity to restrict alcohol and tobacco supply by limiting retail outlets, total volume or sales (14).

More recently negotiated trade agreements contain GATS plus provisions. In the WTO rules on market access prohibitions of quotas apply to a 'positive list' of sectors (i.e. a select list of agreed sectors) in a country's schedule of commitments (27). The TPPA however is a 'negative list' meaning the rule applies to all sectors except those included in the list. It may well be more challenging for public health policy makers to get a sector on the negative list as opposed to keep it off a positive list. Consequently, the TPPA could affect cross border distribution of risk commodity products under market access for most TPPA countries (27). Other public health researchers are concerned GATS may impact countries seeking to implement restrictions on marketing of food and beverages, including to children as well as alcohol advertising as this may be considered a barrier to cross-border advertising (a type of trade in services) (30). This would however only be the case if the country had made specific commitments to disciplines on domestic regulation in the advertising sector (13) as may be the case in more recent TIAs including the TPPA which may potentially add to GATS commitments on domestic regulation and expand coverage to additional sectors for example, the advertising sector (27).

Regulatory coherence and transparency

Regulatory coherence chapters have only been recently introduced into trade agreements. They introduce requirements on the degree of transparency in domestic policy development processes and institutionalize the right of private actors to participate (25, 38). Requirements include providing public access to documentation relevant to all regulatory measures, potentially giving THCCs access

to more information they can use to litigate (39). Governments are also required to provide opportunities for 'interested persons' and other parties to have input in policymaking processes (24). Further, both the TPPA and TTIP proposed the establishment of an inter-governmental body comprised of regulators and industry for the purpose of driving regulatory harmonization between countries, providing a further avenue for THCC influence (40). KORUS (The United States–Korea Free Trade Agreement) for example, contains a provision in the TBT chapter, stating that 'Each Party shall allow persons [a national or an enterprise] of the other Party to participate in the development of standards, technical regulations, and conformity assessment procedures' (21). A similar provision exists in the leaked draft proposal for the regulatory coherence chapter of the TPPA (41). These provisions allow for industry from other countries to participate in policy development with limited scope to restrict their input (21).

Regulatory coherence chapters also encourage the use of regulatory impact assessments (RIAs) which THCCs, specifically British American Tobacco, have worked since the 1990s to have embedded in policymaking processes (21, 24, 42). RIAs create a structure for developing regulations that use an economic framework of analysis, ensures early corporate involvement in policy development and formalizes the ability of THCCs to exploit the information asymmetries between government and corporations (29, 43). The tobacco industry has, for example, delayed implementation of graphic warning labels in the US by questioning the Food and Drug Administration's (FDA) RIA, a similar strategy has been used in New Zealand (44). Industry efforts to enshrine RIA in policymaking processes has more recently been reflected in their recommendation for international trade agreements including for example the TPPA (29). In line with this recommendation a leaked draft of the TPPA Regulatory Coherence Chapter proposed that governments should endeavour to conduct RIAs as 'best practice' on all regulations under development aiming for decisions to be 'based on the best reasonably obtainable scientific, technical, economic and other information' (31). Additionally, it recommends for national bodies to be established to promote coordination of policy development across all departments and with the authority to review compliance with 'good regulatory practice' (2, 24, 27) presumed to include the completion of a 'pro-market and pro-business' RIA (39). This may generate barriers for innovative public health policies, complicate the policy process and increase the cost of public policy development.

It is important to note that many, particularly HICs countries already widely adopt pro-business assessment of policies under consideration and perceive industry consultation as necessary and valuable. For example the US, Australia and New Zealand already follow a 'best practice' approach to

domestic policy/regulatory development based on consideration of a set of pro-market factors and following a pro-business process (39). Regulatory coherence and transparency chapters however would create significant new obligations for LMICs which may deter policy development or increase the risk of attracting threats of an investor-state dispute and lose of such a dispute were it to be pursued (39). Together regulatory coherence and transparency obligations are predicted to provide THCCs with additional legitimate tools and fora to influence health policymaking processes (29, 30, 39, 45).

Harmonization

Under the WTO's TBT agreement governments are not necessarily required to adhere to agreed regulatory schemes between countries. Supported by THCCs, however both the proposed TPPA and TTIP included chapters on harmonization of technical norms and standards which seek to streamline and harmonize regulations across countries, limiting 'regulatory diversity'. These provisions have the potential to restrict countries' space to implement stricter than agreed standards on for example front of package food labelling (21).

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APPENDIX SEVEN: INTERNATIONAL INVESTMENT AGREEMENT TERMS AND OBLIGATIONS RELEVANT TO REGULATORY CHILL

While a number of international investment agreement (IIA) terms and obligations are important, we focus here on those that have featured most prominently in analyses of IIAs for their potential to restrict health harmful product regulatory space; or that have been used by investors as the grounds on which to pursue an investor-state dispute.

Definition of an investment

The majority of IIAs define investment broadly, including ‘every asset that an investor owns or controls, directly or indirectly, that has the characteristics of an investment, including such characteristics as the commitment of capital or other resources, the expectation of gain or profit, or the assumption of risk’ (1, 2). This definition is generally followed by forms the investment could take an usually explicitly include intellectual property rights and other ‘tangible or intangible, movable or immovable property, and related property rights, such as leases, mortgages, liens, and pledges’ (1).

Prohibition of expropriation

While direct expropriation is relatively clearly defined as the direct taking by the state of an investor’s property (3), in recent decades indirect expropriation has been one of the most commonly cited grounds for initiation of an investor-state dispute by investors and has been vaguely defined in IIA texts resulting in various different interpretations of it by arbitration panels (4). Indirect expropriation is broadly considered to be regulatory action taken by a government not reasonably expected by an investor that affects the value of a company’s investment and their future profits, even if that was not the intent (5). For example, in its case against Australia’s plain packaging legislation, PMI claimed indirect expropriation- arguing that the legislation significantly reduced the value of its trademark (6) and their expectation that they could reliably use their trademark was reasonable given existing national and international trademark protections (6). Challenges may arise for governments in predicting the outcome of such a claim since tribunals have considered indirect expropriation via three different approaches: the ‘sole effects doctrine’ considers only the extent of a measure’s impact on an investment, with no consideration to the purpose of a public policy measure; the proportionality approach balances the public benefits of the measure with the impact on an investor; and the third approach carves-out certain legitimate measures of significant public value that cannot be considered expropriation regardless of their impact on an investment (7). A second element of indirect expropriation considers the extent of impact on an investment with some tribunals ordering

compensation for a significant loss while others have required near total destruction of the investment value before awarding compensation (8, 9). These different approaches have been used in different arbitral awards, making it difficult for governments to predict the decision in a future potential case.

Fair and equitable treatment

Fair and equitable treatment (FET) is another vague concept not specifically defined in any investment treaty (4, 7, 9) yet has also been one of the most common principles on which investors have initiated an investor-state dispute and on which arbitrators have ruled (10, 11). FET has previously been interpreted by arbitration panels as entitling foreign investors to a 'stable and predictable regulatory environment' that protects their 'legitimate expectations' of profit (6, 8). In ruling on the extent of protection that should be granted, panels consider the contribution of the investment to the national economy, if the regulation is arbitrary, and the policy environment at the time the investment was made, but decisions on the scope of protection have varied significantly (7, 8, 12). For example in the *Tecmed vs Mexico* case the tribunal interpreted 'legitimate expectations' very broadly, ruling that to avoid violating their FET obligation a host state must act in such a manner as to 'not affect the basic expectations that were taken into account by the foreign investor to make the investment;' and that is consistent, 'free from ambiguity and totally transparent,' such that the investor can be aware of all the relevant rules and regulations and their respective purpose and aims before deciding to invest (7). Other tribunals have had a much narrower interpretation of FET, requiring only that states act in a manner that is not 'egregious and shocking' and one tribunal added that investors' expectations 'must be reasonable and legitimate in light of the circumstances prevailing in the host country' (7). In line with this interpretation another tribunal ruled that it was not reasonable for an investor to expect Lithuania, a country in the process of EU accession (so undergoing significant legislative change), to remain in a legislative freeze (7). Since tribunals are not obliged to follow a precedent when deciding on a dispute, different interpretations of the FET can be expected to continue (7). Thus when PMI also claimed violation of their right to FET arguing that it reasonably expected to be able to continue to use branding and trademarks on packaging to differentiate its products, it was difficult for Australia and other countries also considering plain packaging to predict the likely tribunal decision on this point (6).

Most favoured nation

The Most Favoured Nation (MFN) provision means investors are entitled to treatment as favourable as that provided to other investors covered under any investment treaty the government is party to (7). While this seems relatively straightforward, in recent decades MFN obligations have been used by

investors to 'import' more favourable commitments from any of the other possibly dozens of agreements to which the host is party to replacing or supplementing the protections granted to the investor under the primary treaty (6, 7). Investors have successfully argued that although the IIA between their home country and the host may not be favourable to their claim, they are entitled to equally favourable treatment as promised to investors covered under other treaties the host country has signed (7). Some arbitral decisions also indicate that when a provision is 'imported', the investor can disassociate them from their original limitations and exceptions arguably allowing investors to generate a set of protections that enhances their rights to which the host country never agreed (7). The TPPA draft explicitly states that parties are free to invoke provisions within other agreements/treaties that provide greater investor protection (10). This means tobacco companies in one TPPA country could still initiate an ISDS case against another using a more favourable agreement, effectively rendering the tobacco exception within the TPPA ineffective (10).

Unreasonable or discriminatory measures

Usually a secondary claim to FET, 'unreasonable or discriminatory measures'. In its claims against Australia, Phillip Morris attempted to argue that given the weak evidential link between plain packaging and the stated public health objectives, the measure was arbitrary or unreasonable and went on to claim any benefits from the legislation were disproportionate to the harm it would cause Phillip Morris' investment (1). Similar claims were made in relation to Uruguay's graphic warning label regulation (1). The Australian case was dismissed on jurisdictional grounds, but the tribunal in the Uruguay case drew heavily on the amicus brief submitted by the WHO and concluded that the rationale for the regulation was supported by public health evidence and was therefore not unreasonable or discriminatory.

National treatment

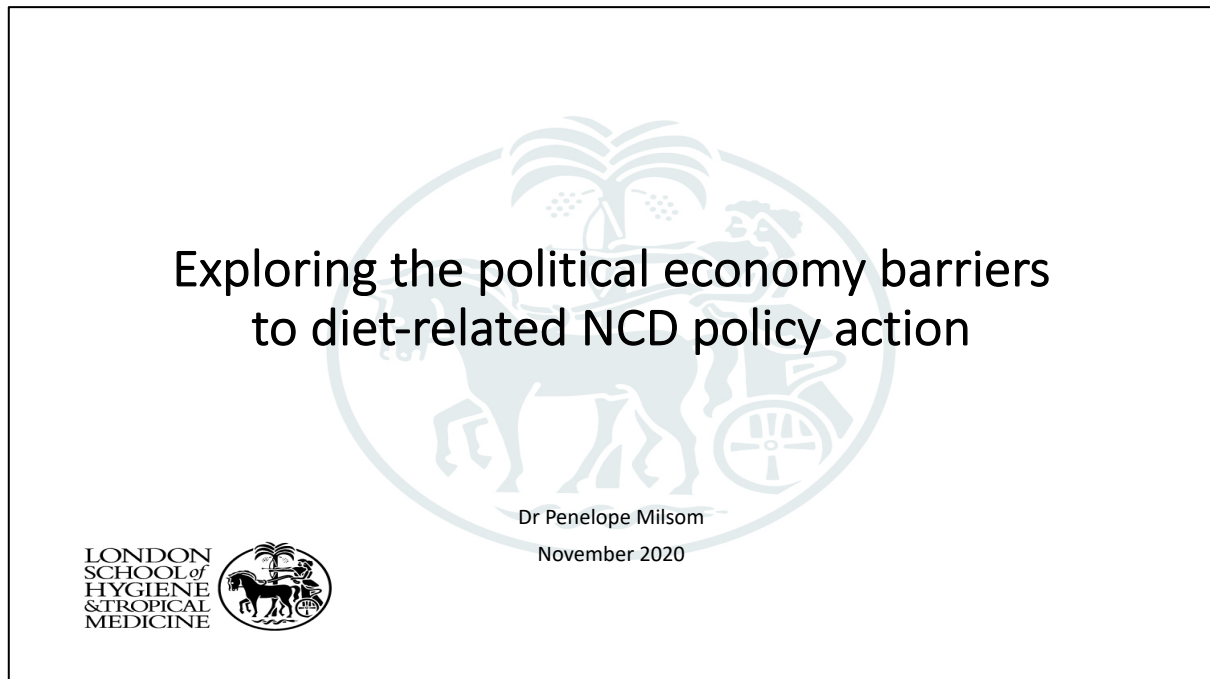
National Treatment (NT) is another core principle of international investment law and is designed to prohibit discrimination of foreign over local investors at all stages of the investment from the pre-establishment phase to post-establishment (1).

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APPENDIX EIGHT: POWERPOINT PRESENTATION FOR SYSTEM DYNAMICS MODEL VALIDATION INTERVIEWS

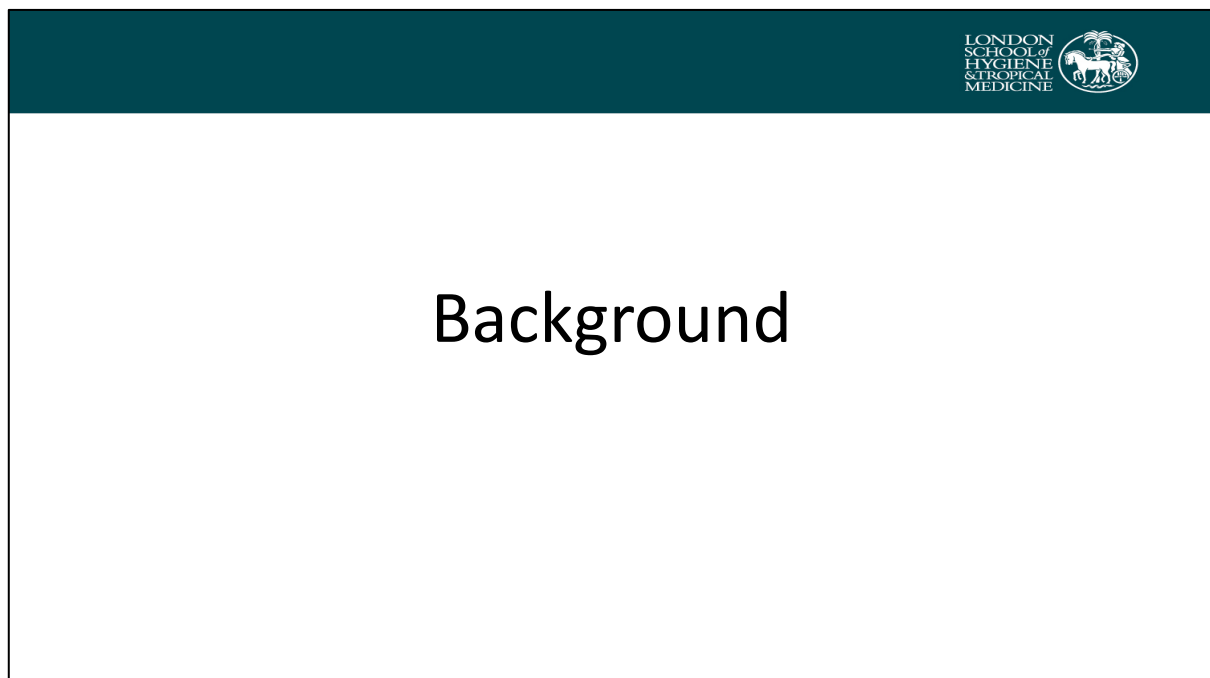
Below is an example of one of the powerpoint presentations used during model validation sessions. The presentation was revised/adapted for each interviewee according to their areas of expertise/experience within the system.



Exploring the political economy barriers
to diet-related NCD policy action

Dr Penelope Milsom
November 2020

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Background

Complex drivers of diet-related NCDs



- **NCDs** are the leading cause of mortality globally and in South Africa are increasing, now accounting for approximately 50% of deaths annually.
- **Unhealthy diets** (including energy dense foods high in fat, sugar and salt e.g refined and ultra-processed foods and beverages) are key driver of the rapid rise in obesity and diet-related NCDs worldwide, particularly in middle-income countries and are a **normal response to the obesogenic food environment**
- **Nutrition transition driven by food system transformation** affecting the availability and access to food through changes to food production, procurement and distribution. Sales of ultra processed foods for example are rising at a particularly high rate in South Africa
- **Globalization including through trade and investment liberalization** is a major driver of food system transformation and the nutrition transition.
- Social system factors also important drivers of the nutrition transition – eg urbanization, employment, poverty

Trade and investment liberalization and food system transformation



- Expansion of transnational food corporations
- International food trade changing the availability of foods high in saturated fat and sugar (e.g. refined foods and ultra-processed foods)
- Global food advertising and promotion

(these all have various inter-linkages)

Policy options to address the food system drivers of unhealthy diets and DR-NCDs

Food supply

- Removing sugar subsidies
- Trade, investment and agricultural policies that incorporate nutrition objectives
- Public procurement through 'short chains'

Food environment

- Healthier product reformulation
- Banning unhealthy food marketing to children
- Targeted subsidies
- Food labelling

Despite nutrition and NCDs being a global priority for achieving sustainable development, most countries have not taken action to address unhealthy food systems including in agriculture, trade, investment, public policy and marketing.

Barriers and facilitators for DR-NCD policy action and trade and nutrition policy coherence?

Lack of 'political will' and corporate influence have been frequently cited as reasons for DR-NCD policy inaction- but what are their underlying drivers?

Political economy factors?

- Powerful/competing interests
- Ideologies
- Institutional arrangements
- Trade agreements/rules limiting policy space
- Knowledge and evidence
- Perceptions

Research aims

To gain a deeper understanding of the complexity and dynamic nature of the **political economy factors** which inhibit (or promote) diet-related NCD policy action in South Africa and to identify strategies for promoting future action.

Methods

Methods

1. **Data collection:** 24 interviews with 25 key policy actors (Dept Health, DTI, DAFF, NGOs, CSOs, academics, industry)
2. **Data analysis:** Purposive text analysis for model development
3. **Model construction**
4. **Model validation**
5. **Identify key leverage points** within the model for reducing barriers to diet-related policy action

Findings:
Dynamics of political economy factors influencing DR-NCD policy action

Definitions

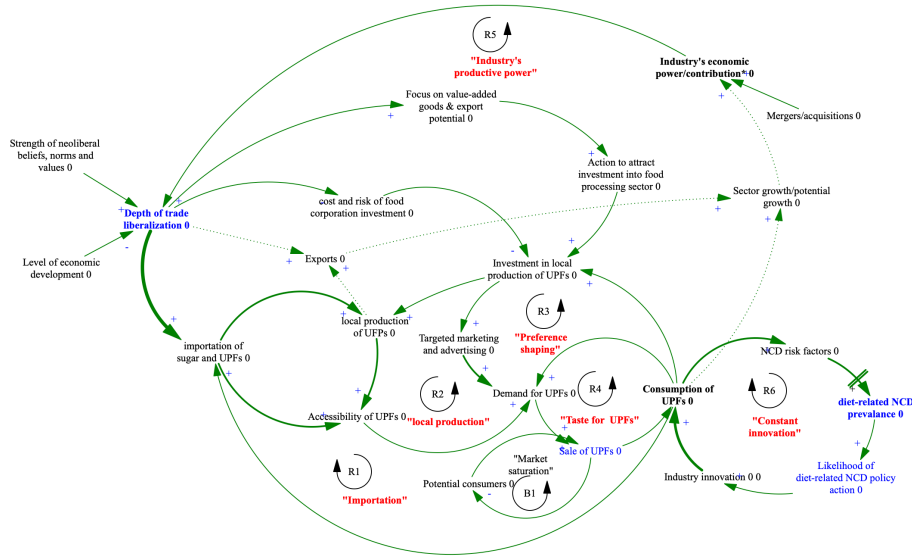
Neoliberal norms- policymaking based on the premise that free and open markets achieves economic growth and can address the urgent challenges of poverty and unemployment

Policy norms- standard/accepted ways of making policy

System dynamics modelling

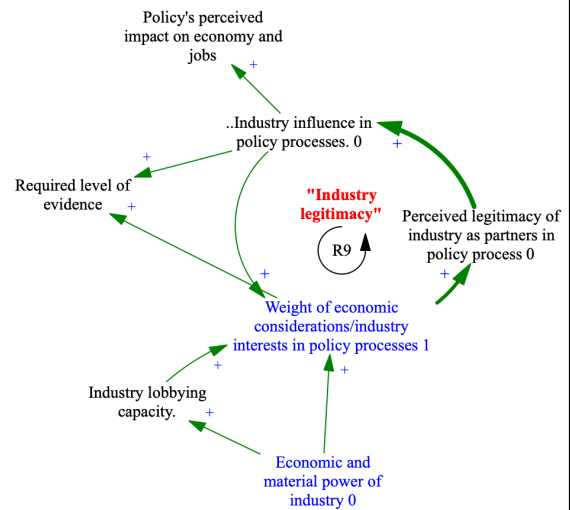
- *The arrows indicate the direction of the influence*
- *The + or - sign indicates polarity of the relationship.*
 - *+ polarity indicates that the influencing variable and the receiving variable change in the same direction*
 - *- polarity means the receiving variable changes in the opposite direction of the influencing variable.*
- *Variables linking to other sub-systems are blue*
- *'R' loops indicate a reinforcing relationship- ultimately result in more change of the original variable in the same direction and can be 'vicious' or 'virtuous' feedback loop*
- *'B' loops indicate a balancing relationship – stabilizing feedback structures that regulate the effects of changes imposed on the system*
- *Red labelling names a feedback process*

Linking trade and investment liberalization to unhealthy food environment and NCDs



Industry's economic power & participation in DR-NCD policy-making processes

- Trade and investment liberalization has expanded the 'economic power of food industry'
- Economic considerations are weighed increasingly heavily in nutrition policy decisions
- High legitimacy of industry as partner's in policy process
 - increases the weight of economic considerations in policy decisions.
- Industry participation in policy processes can:
 - Increased required level of evidence to support a proposed policy/regulation
 - Increase perceived impact on economy and jobs



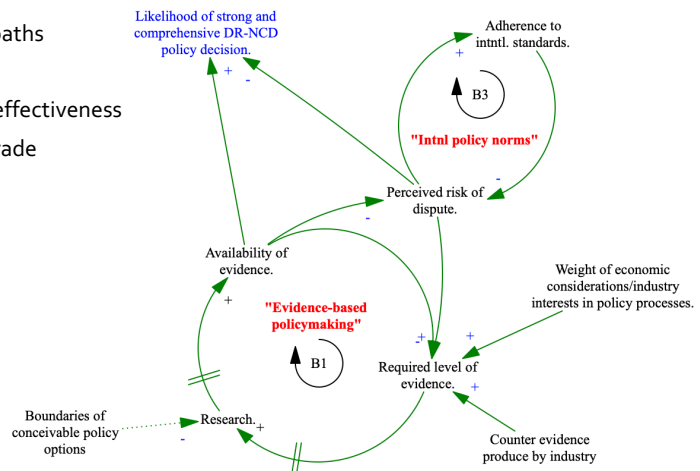
Food industry strategies to influence DR-NCD policy processes

Industry preference for 'soft tactics'

- Direct lobbying through formal & informal paths
- Claims of unacceptable economic impact
- Counter evidence to create doubt of policy effectiveness
- Generally only use 'hard' legal threats e.g. trade challenges when other tactics are ineffective

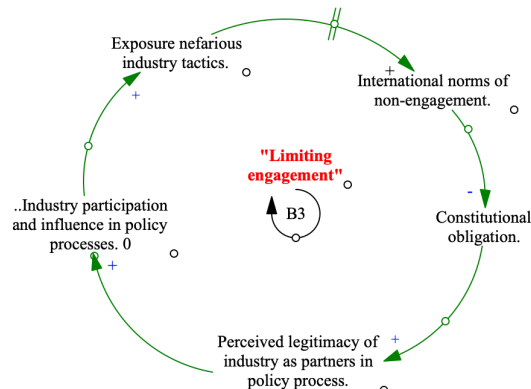
Impact of industry influence:

- Strict 'evidence-based policymaking'
- Adherence to international standards/guidelines
- Delay in policy adoption



Promoting DR-NCD policy making

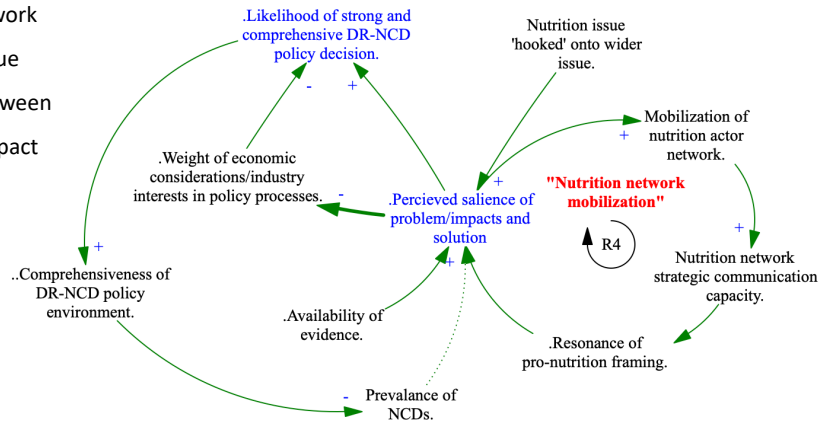
- Exposure of 'nefarious' industry strategies could lead to the establishment of international norms of non-engagement (e.g. FCTC) reducing industry participation in nutrition-relevant policy processes and therefore their influence. (e.g. despite economic impact on local industry, economic policymakers support tobacco plain packaging and do not promote further investment in tobacco sector)



Promoting DR-NCD policy making

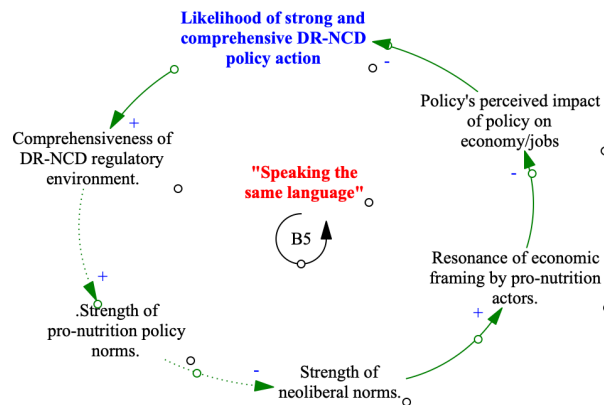
- Increasing the perceived salience of a DR-NCD policy problem:

- Evidence of problem and policy effectiveness
- Mobilization of nutrition network
- 'Hooking issue onto wider issue'
- Directness of relationship between Nutrition problem, health impact And proposed solution.



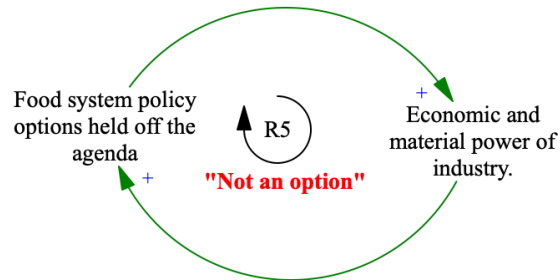
Promoting DR-NCD policy making

- Using economic framing of DR-NCD problem and policy solution



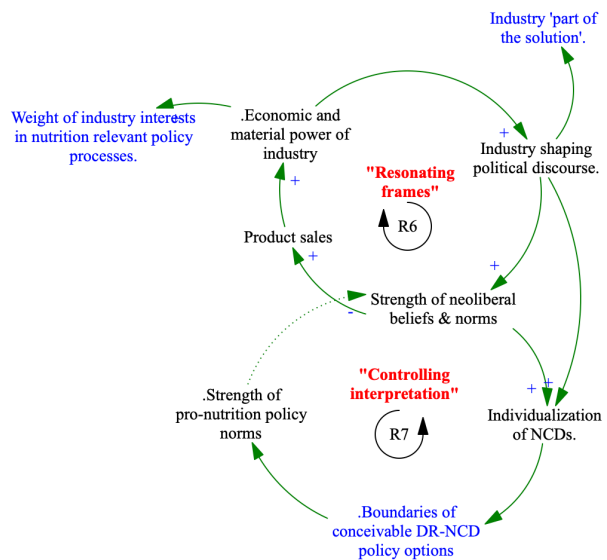
Limitations on DR-NCD policy agenda-setting

- The economic power of the food industry prevents certain policy options that would have significant economic impacts on industry and employment from ever being considered as viable policy options.



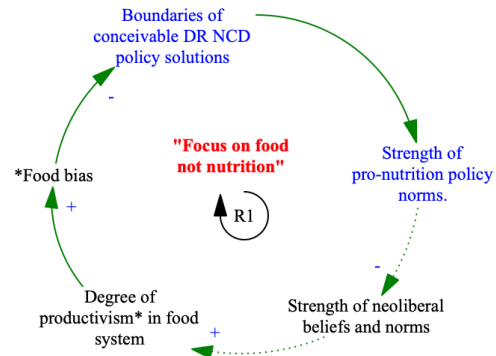
Restrictions on conceivable DR-NCD policy options

- Economic power of food industry facilitates the shape political discourse to further strengthen neoliberal policy norms that benefit them.
- Industry framed as part of the solution
- Individualization of NCDs- risk exposure is considered personal responsibility, not determined by complex structural drivers
- limits the boundaries of conceivable policy solu
- Weaken nutrition policy norms



Restrictions on conceivable DR-NCD policy options

- Focus on food and not nutrition in the food system:
 - Dominance of 'productivism'- trade and agricultural policies that support the production of crops and food products (particularly 'value-added' products like UPFs) to maximize profit and exportability.
 - Drives 'food bias'- a focus on food not nutrition security
 - limits boundaries of conceivable DR-NCD policy solutions
 - Weakens pro-nutrition policy norms.



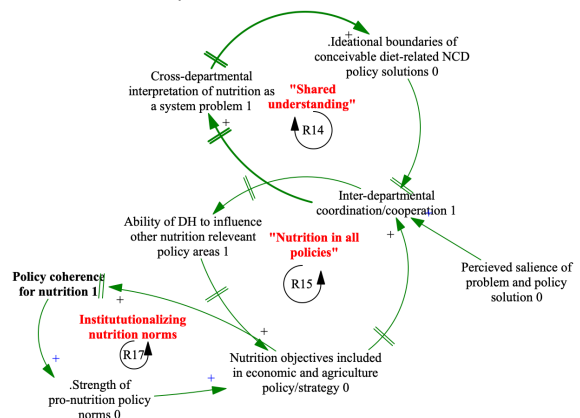
Challenge of trade, investment and nutrition policy coherence

- DR-NCDs generally not perceived as a whole food system or trans-sectoral problem
- Limited capacity within DH and DTI to engage in nutrition issues at the intersection of trade, investment, agricultural and health policy

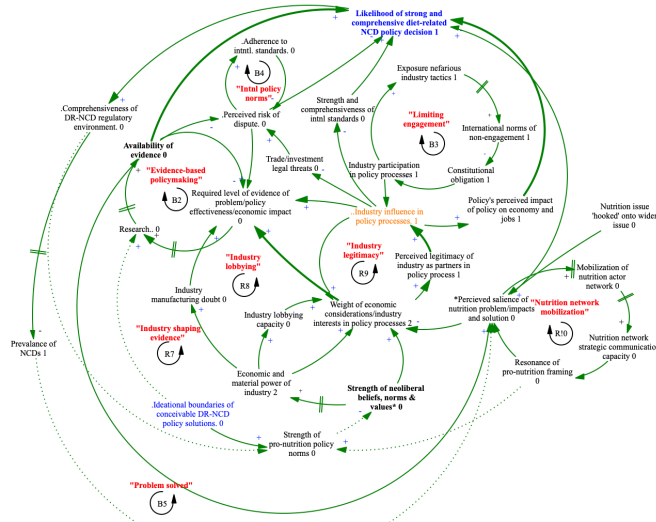
- limits the conceivable policy options (lack of 'nutrition in all policies' approach)
- Low perceived need for co-ordination between Departments to address DR-NCDs as a food system problem

DH has limited influence over policy outside their direct mandate

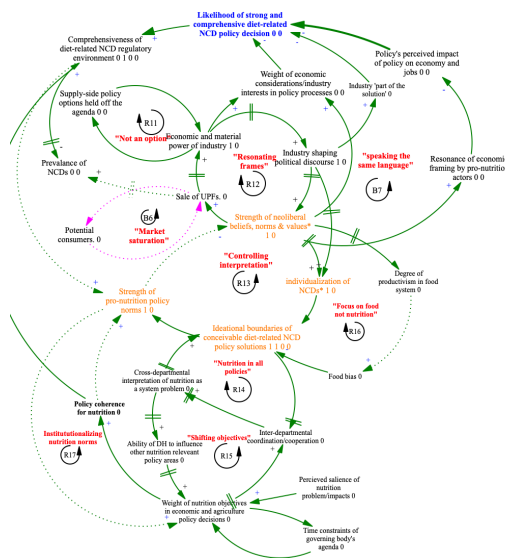
- Poor policy coherence and weak pro-nutrition policy norms (e.g. DTI promoting investment in agro-processing/food processing)



Nutrition policy making- a dynamic complex system



Nutrition policy making- a dynamic complex system



Discussion

- Do you agree with the linkages/relationships identified?
- Are there any linkages/relationships you disagree with? If so, how should they be changed to reflect your experience of how things work?
- Are there any missing parts of the system?
- Questions?

Thank you

