

University of Denver

Digital Commons @ DU

Undergraduate Theses, Capstones, and Recitals

Undergraduate Research

Spring 4-13-2022

Trade Liberalization and the Social Determinants of Health: A Case Study of NAFTA's Impact on Mexico from 1994 to 2005

Maria Trubetskaya
University of Denver

Follow this and additional works at: https://digitalcommons.du.edu/undergraduate_theses



Part of the [Growth and Development Commons](#), [Health Economics Commons](#), [International Economics Commons](#), and the [Political Economy Commons](#)

Recommended Citation

Trubetskaya, Maria, "Trade Liberalization and the Social Determinants of Health: A Case Study of NAFTA's Impact on Mexico from 1994 to 2005" (2022). *Undergraduate Theses, Capstones, and Recitals*. 18. https://digitalcommons.du.edu/undergraduate_theses/18

This Undergraduate Thesis is brought to you for free and open access by the Undergraduate Research at Digital Commons @ DU. It has been accepted for inclusion in Undergraduate Theses, Capstones, and Recitals by an authorized administrator of Digital Commons @ DU. For more information, please contact jennifer.cox@du.edu, dig-commons@du.edu.

Trade Liberalization and the Social Determinants of Health: A Case Study of NAFTA's Impact on Mexico from 1994 to 2005

Abstract

Given the increased transnationalization of borders and economic interdependence between countries in the Global North and South, it is imperative to address how these trends impact the health and well being of the populations involved. The conventional neoliberal economic framework, however, falls short in explaining these dynamics due to its overemphasis of proximal determinants of health as direct consequences of commodification and free market activities. In congruence with those theoretical limitations, there is a limited assessment of more distal determinants – the social determinants of health (SDOH) – that are arguably more consequential for health and are interrelated with the dynamics of domestic, regional, and global political economies. The relationship between trade liberalization and SDOH, therefore, deserves greater examination through a critical political economy oriented framework that accounts for the shortcomings of the conventional neoliberal framework. This thesis seeks to address the aforementioned gaps by assessing the impacts of trade liberalization on SDOH within a case-study analysis of the North American Free Trade Agreement (NAFTA) and its impact on Mexican SDOH pathways in the period between 1994 and 2005. I identify three SDOH pathways for the analysis of NAFTA: employment (with respect to income and economic insecurity), regulation (with respect to occupational safety and environmental health), and agricultural commerce (with respect to food insecurity and sovereignty). By analyzing the intended impacts of NAFTA and Mexican policies, the quantitative primary, and the qualitative secondary data of the actual outcomes, I find that NAFTA's impact on SDOH was incredibly nuanced.

Document Type

Undergraduate Thesis

Degree Name

B.A. in International Studies

First Advisor

Sandy Johnson

Keywords

Trade, Economics, Global health, Social determinants of health, Liberalization, Critical political economy

Subject Categories

Economics | Growth and Development | Health Economics | International Economics | Political Economy

Publication Statement

Copyright is held by the author. User is responsible for all copyright compliance.

Trade Liberalization and the Social Determinants of Health: A Case Study of
NAFTA's Impact on Mexico from 1994 to 2005

Maria Trubetskaya
University of Denver Josef Korbel School of International Studies
Undergraduate Thesis for Departmental Distinction in International Studies
Advisor: Sandy Johnson PhD
Spring Quarter 2022

Abstract

Given the increased transnationalization of borders and economic interdependence between countries in the Global North and South, it is imperative to address how these trends impact the health and well being of the populations involved. The conventional neoliberal economic framework, however, falls short in explaining these dynamics due to its overemphasis of proximal determinants of health as direct consequences of commodification and free market activities. In congruence with those theoretical limitations, there is a limited assessment of more distal determinants – the social determinants of health (SDOH) – that are arguably more consequential for health and are interrelated with the dynamics of domestic, regional, and global political economies. The relationship between trade liberalization and SDOH, therefore, deserves greater examination through a critical political economy oriented framework that accounts for the shortcomings of the conventional neoliberal framework. This critical examination also serves to help establish SDOH as a relevant and valuable variable in the study of global political economy and development. This thesis seeks to address the aforementioned gaps by assessing the impacts of trade liberalization on SDOH within a case-study analysis of the North American Free Trade Agreement (NAFTA) and its impact on Mexican SDOH pathways in the period between 1994 and 2005. Through the literature review, I identify three SDOH pathways for the analysis of NAFTA: employment (with respect to income and economic insecurity), regulation (with respect to occupational safety and environmental health), and agricultural commerce (with respect to food insecurity and sovereignty). By analyzing the intended impacts of NAFTA and Mexican policies, the quantitative primary, and the qualitative secondary data of the actual outcomes, I find that NAFTA's impact on SDOH was incredibly nuanced. The agreement produced mixed outcomes on an aggregate basis, but devastatingly poor outcomes for specific groups of people. These findings also illuminated that NAFTA, on its own merits, may not necessarily be the primary causal factor in these outcomes as its provisions are merely an extension of the liberalized, unequal domestic political economy and an acceleration of the inequality perpetuated by developmental imbalances between the three signatories. But, the ultimate conclusion of this analysis is that the true impact of trade liberalization on SDOH cannot fully be examined in isolation, for each SDOH factor is inextricably linked with the other and is broadly interrelated with the domestic and global political economies. These findings have implications for further research in identifying SDOH as variables of concern within theories of political economy, as well as variables of concern for future trade and development policies. Finally, this thesis aims to serve as an extension of the cautionary tale of trade liberalization as a primary method for sustainable development due to the method's oversimplification and dependence on strong domestic conditions for full efficacy.

Table of Contents

Introduction	3
Literature Review	4
Trade Liberalization and the Social Determinants of Health	7
Income & Economic Insecurity	7
Household Income	8
Economic Insecurity	9
Regulation	10
Environmental Health	10
Occupational Safety and Health	12
Agricultural Commerce: Food Insecurity and Sovereignty	12
Background	14
An Overview of Mexican Development and the Advent of NAFTA	14
NAFTA Employment Goals and Conditions of the Labor Market	18
The NAFTA Side Agreements	19
Conditions of the Regulatory Landscape of OSH and Environmental Health	22
State of OSH Policy Before and During NAFTA	22
The State of Environmental Policy Before and During NAFTA	24
The Pre-NAFTA Agricultural Domestic Market and Government Intervention	26
The Introduction and Goals of the NAFTA Agricultural Chapter	28
Methodology	30
Employment Methods	31
Regulation Methods	32
Agricultural Commerce Methods	35
Analysis	36
Employment	36
Sectoral Impacts on Income and Economic Insecurity	40
Maquiladoras - Unskilled Manufacturing	40
Disguised Maquilas - Skilled Manufacturing	42
The Informal Economy and Migration - Agriculture	43
Summary	46
Occupational Safety and Health Regulation	47
Table 1: NAO Submissions and Outcomes	47
Environmental Health Regulation	54
Table 2: CEC Submissions on Enforcement Matters and Outcomes	56
Agricultural Commerce	63
The Impact of NAFTA's Agricultural Chapter: Food Security	63
The Impact of NAFTA's Agricultural Chapter: Food Sovereignty	66
Discussion	69
Appendix	76
Bibliography	83

Introduction

The processes of globalization – in the age of rapid information exchange and extensive global supply chains and economic interdependence – have become valuable contexts for the evaluation of economic liberalization policies and their relationship to population health outcomes. In particular, trade liberalization – the progressive reduction of barriers to imports and exports (Grown 2005) to increase free-market oriented production (Hawkes 2006) – has been a focal point in this assessment of health, given its direct implications on public health such as the introduction of cheap medicines, changes in diet, and greater access to harmful substances such as tobacco and alcohol (McNamara 2017). However, there has been a fairly limited assessment of trade’s impact on social determinants of health (SDOH) – “the conditions in which people are born, grow, live, work, and age” that influence health outcomes (World Health Organization 2021). Arguably, those factors are more consequential determinants of population health, but are more distal determinants that are harder to conceptualize and are strongly interrelated with broader socioeconomic and sociopolitical contexts. Individual pathways of impact may thus be difficult to disaggregate from this broader context. The conventional neoliberal framework, however, falls short in explaining these dynamics due to its overemphasis of proximal determinants of health as direct consequences of commodification and free market activities. SDOH, therefore, deserves greater examination through a critical political-economy framework to account for these shortcomings.

This thesis poses some overarching questions that will be answered – or at least contextualized – in different parts of the study. The first question is: to what extent does trade liberalization impact SDOH in semi-periphery, emerging market economies? The broader links assumed in this question will be addressed in the literature review. A deeper analysis calls for a

case study assessment of a particular region and trade agreement, to which the second research question becomes: to what extent did NAFTA's trade liberalization policies impact SDOH in Mexico from 1994 to 2005? The choice of this case study is primarily attributable to Mexico's fully liberalized domestic political economy, the consequential nature of NAFTA, and its unique characteristics of symmetry and universal coverage (De La Calle 2017). In addition, the agreement – on its own – made profound changes to the foundation of Mexico's economy, set the stage for other multilateral free trade agreements (FTA) across the world, and solidified the neoliberal mindset and policy posture for Mexican development. Thus, the findings of this research can be broadly applicable to the assessment of the viability of economic liberalization as a development strategy.

In an attempt to answer these questions, I will utilize primary quantitative and secondary qualitative data to assess the relationship between NAFTA's policies (i.e. tariff removals/reductions, reputational compliance dispute settlement mechanisms, etc.) and the SDOH pathways of Mexican residents. This thesis establishes three broad SDOH links of concern: employment (with respect to income and economic insecurity), regulation (with respect to occupational and environmental health), and agricultural commerce (with respect to food security and sovereignty). I ultimately hypothesize that NAFTA had considerably negative impacts on SDOH – despite its assumptions of symmetry, universal coverage, and its hope of revitalizing Mexican development.

Literature Review

Since the 1980s, the neoliberal framework for globalization's impact on health has been hinged on the notion that “globalisation is good for your health, mostly” (Feachem 2001). Such

sentiments were predicated on the growing popularity of market-oriented policies of the 1980s wherein competition was seen as the defining characteristic of human relations with added emphasis of personal liability, choice, and responsibility for one's health outcomes (Monbiot 2016). Policies were enacted with goals to eliminate price-controls, deregulate capital markets, lower trade barriers, and reduce government involvement through austerity and privatization. Neoliberal policy makers purported that less restrictions on free market activities would allow for the "invisible hand" of the market to more efficiently regulate the allocation of scarce resources. In the context of free trade, reducing barriers to it would reduce global commodity prices and thus would allow economies greater export opportunities, the opportunity to capitalize on comparative advantage, attract foreign investment and capital, and reinvest into the domestic economy and society (Schwarzenberg 2019). Trade theory also posits categorical predictions about shifts in economic activity upon said liberalization, through its prediction of impacts of exports/imports on income and employment (The United Nations Conference on Trade and Development 2021). By expanding the flow of capital, goods, and services, free trade aims to create greater household and macroeconomic wealth through the facilitation of investment and increased availability of inputs to health. The neoliberal framework thereby advocates that globalization is "good for your health, mostly" because greater wealth and availability of inputs to health equate to better social, economic, and health outcomes (McNamara 2017).

However, this notion has become highly contested, especially with regard to trade liberalization. The neoliberal assumption of individual responsibility as a determinant for health behaviors and outcomes ultimately fails to recognize the broader structural factors that are crucial to the explanation of health behaviors and outcomes (Walls et. al 2018). Additionally, the neoliberal presumption erroneously assumes that the economic and social behaviors of

individuals are directly applicable to predicting macroeconomic outcomes and conditions, thus presuming that isolated impacts on individual health and well-being are replicated across populations, regions, political systems, and economic sectors. At its foundation, the argument also erroneously presumes a level-playing field in terms of equal agency to engage with economic forces. Given these shortcomings, the critical political economy framework aims to fill these gaps by positing a holistic, historical institutionalist approach that looks beyond those erroneous assumptions and economic efficiency as predictors of societal outcomes (Lee 2011).

Furthermore, the impact of trade liberalization on health has been mostly conceptualized in relation to commercial inflows of consumer goods that have directly contributed health outcomes through changes in diets, the consumption of harmful substances such as tobacco or alcohol, and access to healthcare products such as medicine (McNamara 2017). This conceptualization also extends to these behaviors as a byproduct of increased wages and disposable income, an increase in government wealth, and greater investment. As a result, there are some gaps in knowledge with regard to the indirect –but arguably more consequential– impacts on SDOH. However, some research has established various pathways for analysis of SDOH in the context of FTAs as well as showcased impacts on independent factors such as nutrition, the environment, and employment. While there is extant literature on trade impacting the aforementioned direct determinants of health such as harmful goods like tobacco, I will be primarily focusing on more distal causes in this literature review.

Trade Liberalization and the Social Determinants of Health

Efforts have also been made to quantify the impact of social determinants as opposed to other related proximal determinants such as diet, health services and communicable disease spread (Huynen et. al, 2005; Naik et. al 2017). The results overwhelmingly provide an indication

that social and economic factors are the greatest influences on population health (Naik et. al 2017). With regard to trade liberalization, researchers have identified trade liberalization's relationship to public health outcomes through the pathways categorized in greater instances of economic insecurity, declines in public revenues, the trading of health services, and food insecurity (Labonte et. al 2007). An expansion of the analysis to SDOHs further found that trade liberalization is associated with greater wage inequality, economic insecurity, and the proliferation of unhealthy commodities, and the health impacts of environmental degradation (Blouin et. al 2009). Four broad links between trade and SDOH have been identified: income & economic insecurity, regulation, agricultural commerce with respect to food insecurity & sovereignty.

Income & Economic Insecurity

Income is arguably the most identifiable pathway for SDOH as improvements in material conditions decrease mortality from food insecurity and the spread of communicable diseases from poor sanitation and environmental quality (Blouin et. al 2009). However, it is unclear if income is the clear determinant factor for health or if it may be a spurious variable in the overall measurement of socioeconomic status and development (Bloom and Canning 2007). The income pathway can therefore be categorized with respect to household income in its enhancement of agency in purchasing inputs and/or mitigating harm and economic insecurity as a reflection of broader structures.

Household Income

Some of the literature argues that trade liberalization, in conjunction with export promotion policies, may be associated with potentially positive impacts for health as it facilitates

economic growth and reduces poverty through the correction of imbalances in import-export ratios (De Vogli and Birbeck 2005). Yet, it is unclear if open trade markedly reduces poverty or improves health outcomes. It stands to reason that if trade has a positive impact on material conditions, then improvements in population health should follow (Blouin et. al 2009; Cornia et. al 2007). However, this notion remains inconclusive as the evidence does suggest that openness enhances growth, but we cannot be entirely sure due to various exogenous influences and methodological problems (Winters 2004). Further analysis identifies that structural factors are far more consequential to economic growth, thus this leads to another conclusion that trade liberalization – on its own merits – is an insufficient strategy to boost the economy and the positive impacts on SDOH through income (Blouin et. al 2009).

Poverty also has a strong, direct relationship to poorer health outcomes in terms of life expectancy and child mortality (Subramanian et. al 2002). Developing countries are effectively more dependent on income for better health outcomes as life expectancy is more sensitive to variations in income (Blouin et. al 2009). A higher household income also significantly contributes to other factors of SDOH as it equates to enhanced agency in the purchase of inputs to health such as clean water, adequate food and housing, education, and quality health services (Blouin et. al 2009). This category for income provides a promising mode of analysis for assessments of community and individual health, but it can be better categorized in relation to the broader context of the labor market and the distribution of wages.

Economic Insecurity

From the perspective of income, economic insecurity is best contextualized in broader labor markets and wage differentials. With regard to the labor market, the common underpinning of neoliberal trade policy is that unskilled labor would benefit from the increased purchase of

goods produced by the unskilled labor (Blouin et. al 2009). However, that is not entirely the case as reductions in tariffs are correlated with greater instances of inter-occupational wage inequality, with greater wage prioritization in skilled over unskilled labor (Blouin et. al 2009; Milanovic and Squire 2005). This disparity in wages in congruence with increased trade liberalization are associated with patterns of exploitation and poor working conditions that push unskilled labor into informal labor (McNamara 2015). The literature also posits that this economic insecurity has gendered aspects and is primarily attributable to existing gender imbalances within various economic sectors (The United Nations Conference on Trade and Development 2021). Specifically, firms that are competing internationally typically seize on the existence of structural gender inequalities to bring down the cost of production through the exploitation of cheap female labor (The United Nations Conference on Trade and Development 2021). Women may, as a result, become a source of competitive advantage to where firms further perpetuate gender inequalities in wages and create greater instances of economic insecurity for women (The United Nations Conference on Trade and Development 2021). Women are also impacted by the changes in the structures of production brought on by trade liberalization as women are more rigidly bound to labor and household gender roles, thus becoming less likely to work in or receive training for export-oriented production – with the exception of traditionally female industries such as garment production (The United Nations Conference on Trade and Development 2021). Overall, the literature establishes wage inequality differentials, exploitation, job loss and insecurity due to fluctuating global demands, and gender inequality as the main pathways for SDOH.

The movement of workers between sectors also provides exceptional insight into economic insecurity's impacts on SDOH as the movement of workers can cause material and

psychosocial stress for workers (McNamara 2017; Blouin et. al 2009). Intersectoral movement complicates prospects for new, stable employment and can be a costly endeavor for displaced workers as movement into a different sector is usually accompanied by the need for changes in skill sets (Blouin et. al 2009; Torres 2001). This trend of “churning” can be mitigated with social safety nets that lessen the material and psychosocial stress imposed upon workers and their families, but “social protection is often inaccessible to the type of workers who may be the most vulnerable to processes of liberalization and that many workers are particularly vulnerable due to the structure of social protection policies” (McNamara 2015).

Regulation

Trade liberalization can also contribute to the erosion of domestic regulatory capacity through its significant changes in a country’s policy landscape. Most notably, the changes to the protection of physical environments and work places. The pathway of regulation can thereby be categorized into environmental health and occupational safety and health (OSH).

Environmental Health

The physical environment – both built and natural – has been classified as a prominent SDOH, as physical environments “can have an adverse impact on health and well-being at the population level” (Pan American Health Organization 2021). The literature frames environmental impacts from trade liberalization in terms of pollution and degradation wherein populations are exposed to higher levels of environmental contaminants such as dangerous chemicals (Pirkle et. al 2015). Regulation seems to play an important role in environmental degradation. For example, increased trade liberalization has led to an increase in carbon dioxide emissions within countries that have high levels of corruption, yet a decrease in emissions in

countries with low corruption (Chang 2015). The literature also purports mixed effects with regards to carbon dioxide emissions as the influence of trade and environmental health on population health can vary across regions and countries (Chuang 2015). Tariffs and pollution taxes (free-market environmentalism policies) were identified as primary mechanisms countries use to regulate pollution, hence the common convention may indicate that decreased tariffs increase output of pollution and the incentive to pollute. However, more nuanced assessments – especially with regard to multilateral FTAs – show the opposite due to underlying trade structures (Nkuiya 2013). In congruence with other types of emissions and pollution (i.e. water, soil degradation, etc.) some of the literature argues that these impacts from trade liberalization can be isolated to a limited number of polluters and industries such as energy sectors, petro-chemical, minerals and cement, and agriculture (Beghnin, Roland-Holst, and van der Mensbrugge 1995). The literature therefore presumes that the greater allocation of resources to polluting industries through open trade can potentially exacerbate water pollution, soil degradation, and the release of dangerous environmental contaminants that have considerable implications for public health (Beghnin, Roland-Holst, and van der Mensbrugge 1995). This increased activity can also make it more difficult for the domestic government to regulate this activity – depending on the provisions of the FTA – and thus corrections of this pollution may rely on the government’s existing regulatory capacity for enforcement.

Occupational Safety and Health

In the context of labor standards and markets, there is a connection between OSH and trade liberalization. Primarily, trade liberalization has been associated with greater instances of workers accepting insecure, lower paying jobs with poorer working conditions (Loewenson 2001; McNamara 2015). Such trends primarily arise from the shifts in the labor market and

deregulation. As a result, workers are subject to greater instances of injury, long term health problems such as respiratory ailments, digestive disorders, and pervasive psychological problems (Loewenson 2001). All of which have had considerable spillover effects for one's living conditions, social and family cohesion, lower life expectancies, and diminished quality of life from higher instances of morbidity (Loewenson 2001). The erosion of domestic policy space may also contribute to the state's inability to enforce stringent labor standards (Doumbia-Henry and Gravel 2006).

Agricultural Commerce: Food Insecurity and Sovereignty

The dominant neoliberal argument surrounding agricultural commerce liberalization purports that such liberalization has the potential to enhance a country's food security position and reduce the food gap by allowing countries to supplement domestic production with imports of agricultural products (Trueblood and Shapouri 2001). Although the logic seems sound, the critical literature has painted a different story, shifting the discussion from imports vs. exports and towards the concept of food sovereignty which purports a right to healthy and culturally appropriate foods and people defining their own agricultural system in accordance with health, culture, and domestic economics (Jones, Shapiro, and Wilson 2015).

In the underlying ideas of food sovereignty, human health is at the forefront and advocates for shifting away from industrial, globalized agriculture. The literature does not necessarily anchor food sovereignty as an SDOH, as there is conflicting information to support the notion that greater control over the food system directly translates to better health outcomes (Jones, Shapiro, and Wilson 2015). Primarily, the empirical evidence does not purport a strong relationship between increased food sovereignty and improved health (Jones, Shapiro, and Wilson 2015). But it is difficult to make definitive conclusions about the empirical evidence.

There are considerable gaps in the full understanding of the impact of food sovereignty on public health as food systems (mostly industrialized agriculture) are borne out of Eurocentric colonialism that largely disconnected Indigenous people from control over land and their food system (Welham 2018, 63). This has occurred over centuries and supplanted traditional, multicultural agricultural practices with monoculture designed for export. It has also been determined that a greater control over food production (i.e. local horticulture, urban horticulture, etc.) increases food security and helps maintain a more stable food supply while enriching the local community through other, less quantifiable aspects (McCauley 2021). The literature, therefore, cannot necessarily isolate food sovereignty in action in a global food system that continues to perpetuate the legacy of colonialism, nor can it institute reliable conclusions about its impact on public health *vis-a-vis* more recent trade liberalization. Moreover, such links to health may also be more distal as aspects of the food sovereignty theory incorporate other, more defined SDOH such as gender parity, preservation of nutrition, reduction of processed foods, and ecological health (Welham 2018, 63). The literature connects trade liberalization to the erosion of food sovereignty, but does not directly link it to population health.

There is a direct relationship between trade liberalization and food security, in terms of lower income countries being exposed to greater food insecurity due to the volatility of global food prices, systemic reductions in food subsidies, and abrupt switches to cash cropping schemes that shift primary agriculture (De Vogli and Birbeck 2005; Labonte et. al 2007; Labonte et. al 2011). As a result, the primary channel for food security analysis is the liberalization of agricultural policies, with greater liberalization being associated with increased food insecurity, malnutrition, and exposure to environmental contaminants (Pirkle et. al 2015). With a combination of a reduction of tariffs on domestic products and increased subsidies for imports

from the developed world, exploitative trade agreements contribute to a crowding out of local food sources and result in the loss of income and livelihoods for local farmers (Pirkle et. al 2015). The developed world has also begun shifting focus from importing cheap sources of food and opting to invest in land, even taking ownership to maintain food security or shift production to more profitable avenues such as the development of agro-fuels. As a result these trends dispossess small-scale farmers or shift their labor to the production of agrofuels and/or non-traditional agriculture exports for wealthier nations, with neither situation improving local food security population health (Pirkle et. al 2015). Given the instability that FTAs may provide for food security, the literature frames calls to action by advocating for the ideas for food sovereignty and the right to food (Pirkle et. al 2015).

Background

An Overview of Mexican Development and the Advent of NAFTA

Before assessing NAFTA's impact on SDOH pathways, it is important to establish the context of the signing of the agreement and the economic conditions in Mexico that led to its enactment, as Mexico had undergone a series of economic transformations that eventually led to its neoliberal orientation. Up until the 1980s, the Mexican economy largely developed from protectionist policy and domestic production. From the 1940s to 1970, the Mexican government implemented an import-substitution industrialization model of development that aimed to foster industrialization on the basis of highly regulated production within domestic markets (Moreno-Brid, Rivas Valdivia, and Santamaría 2005). This policy orientation heavily restricted the flow of consumer goods imports, heavily regulated foreign direct investment, and operated through sector specific programs that built up domestic manufacturing to produce capital goods

and intermediate outputs (Moreno-Brid, Rivas Valdivia, and Santamaría 2005). In addition, state owned enterprises intervened to carry out investment projects that the private sector could not or had no interest in partaking in (Moreno-Brid, Rivas Valdivia, and Santamaría 2005). As a result, state owned enterprises intervened in the majority of industrial activity in the Mexican market and retained significant market power (Moreno-Brid, Rivas Valdivia, and Santamaría 2005).

Mexico also incorporated the maquiladora program into its overarching development strategy, by simulating in-bond export processing through duty-free importing of machinery and exemption from VAT and income taxes (Moreno-Brid, Rivas Valdivia, and Santamaría 2005). Its establishment in 1965 sought to reskill former workers from the Bracero Program – a program for short term farm labor contracts in the United States – who were returning to Mexico after completing agricultural labor in the United States (Polaski 2003). Although run by local vendors, maquiladoras were owned by foreign entities and considered capital of foreign investors (Giles 2006). The maquiladora program allowed tariff and tax free imports of assembly materials to Mexico, that would then be assembled and re-exported to the United States and other countries (Polaski 2003). Given this export focus, the majority of Maquiladora production was concentrated within the production of automobile parts, electronics and components, and textiles and apparel (Polaski 2003). Maquiladoras were established as a free-trade zone and then became a clever way for the Mexican government to trade labor with corporations in exchange for foreign debt reductions and garnering public revenues, by considering maquilas as export activities conducted on the soil of the foreign investor's state (Giles 2006). At this point, however, maquilas were still largely kept within the control of the government and there were limited sales of their export products in the domestic market.

Import-substitution largely succeeded in Mexico's development and shifted the economy from agrarian to semi-industrial within that period. However, Mexico faced various challenges such as an uneven distribution of the benefits, a lack of fiscal policy that aimed to strengthen public revenues and lessen the dependence on external debt, and a lack of efficient export promotion programs that eventually would define Mexico's transition into neoliberalism and trade liberalization (Moreno-Brid, Rivas Valdivia, and Santamaría 2005). With these difficulties, Mexico struggled to substitute imports of high-technology capital goods, and thus government expenditure became the driving factor in economic growth (Moreno-Brid, Rivas Valdivia, and Santamaría 2005). It was then that the discovery of oil fields in Mexico in the 1970s shifted the government's focus to development financed by oil export inflows and financing through external debt (Moreno-Brid, Rivas Valdivia, and Santamaría 2005). In doing so, domestic and foreign exchange revenues became increasingly vulnerable to external shocks and conditions, causing a significant trade deficit through the inputs of intermediate and capital goods, and eventually came crashing down in 1981 when the international oil market collapsed (Moreno-Brid, Rivas Valdivia, and Santamaría 2005). Coupled with the rise in U.S. interest rates, Mexico endured a fiscal and foreign exchange crisis in 1982 and defaulted on its external debt service payments, ending Mexico's reign of economic expansion and ushering in a new era of neoliberal economic reforms focused on empowering the private sector and integrating Mexican exports into the global market (Moreno-Brid, Rivas Valdivia, and Santamaría 2005). The period of liberalization accelerated upon Mexico's membership in the General Agreements on Tariffs and Trade (GATT) in 1986.

In 1990, Mexico's President, Carlos Salinas de Gortari, requested a liberalized trade agreement between the U.S. and Mexico, subsequently opening up negotiations for an FTA

between the United States, Mexico, and Canada (Chatzky and Hanson 2020). In 1993, NAFTA was signed into law with additional amendments through labor and environmental side agreements and went into effect in 1994. The advent of NAFTA was a milestone for international trade negotiations due to its unprecedented integration of two developed countries and one developing country as well as its pioneering of trade disciplines such as rules of origin, dispute settlement mechanisms, protections for labor and environmental regulation, intellectual property, and cross border investments “based on negative lists” (De La Calle 2017). It is a significant multilateral agreement that paved the way for the World Trade Organization and led to more comprehensive attention being paid to some SDOH factors within new FTAs (Chatzky and Hanson 2020). NAFTA was also unique as a FTA in that it provided universal coverage and symmetry to where rights and obligations were equal for each signatory and applied to all investment sectors, goods, and services (De La Calle 2017). As outlined in Article 102 of NAFTA, the agreement had seven overarching goals: 1) to grant the signatories “most favored nation” status; 2) eliminate barriers of trade and facilitate the cross-border movement of goods and services; 3) promote conditions of fair opportunity; 4) increase investment opportunities for the signatories; 5) provide protection and enforcement of intellectual property rights; 6) create procedures for trade disputes; and 7) establish a framework for future trilateral, regional, and multilateral cooperation to further expand the benefits of the agreement (NAFTA 1994). NAFTA was eventually renegotiated as the U.S.-Mexico-Canada Agreement in 2018, but the original NAFTA will be examined for the purposes of this thesis.

NAFTA Employment Goals and Conditions of the Labor Market

Outlined in Article 102 of NAFTA, an increase in employment and improved living standards were core goals and tenets of the agreement. For the relationship between the U.S. and Mexico specifically, the hope was that NAFTA would curb migration by amplifying employment in low-skilled manufacturing work, create higher skilled work opportunities, reduce wage differentials between said workers and with workers in the U.S., increase export diversification, increase wages and productivity, and reduce poverty (Villarreal 2010). Even prior to NAFTA, Mexico's employment conditions were highly dependent on the conditions of the United States, as preceding liberalization policies opened up more formal and integrated economic channels between the two countries (Villarreal 2010). As previously mentioned, Mexico's economic troubles were also borne out of various events and shocks that led the economy and employment to falter, from the residual effects of the 1982 debt crisis, to the assassination of favorite presidential candidate Luis Donaldo Colosio in 1994, and then a liquidity and devaluation crisis from the Peso crisis in 1994-1995 (Villarreal 2010). Prior to NAFTA, poverty remained relatively high, with trends in decreasing wage inequality and overall inequality (Villarreal 2010). Further, the significant growth of the Mexican labor supply added more pressure for the creation of employment by NAFTA as such growth required an accumulation of approximately 1 million new jobs per year to absorb it and maintain favorable employment (Villarreal 2010). The confluence of these trends and factors created greater expectations for NAFTA to stimulate employment and in turn maintain and create adequate standards of living for large swaths of the population.

The NAFTA Side Agreements

In addition to the unprecedented regional integration and universal symmetry, part of what made NAFTA a unique FTA at the time was its additional, explicit protections of labor and environmental health. As an added condition of NAFTA, two side agreements were enacted: the North American Agreement on Labor Cooperation (NAALC) and North American Agreement on Environmental Cooperation (NAAEC). The first agreement, the NAALC – dubbed as the labor side agreement – was designed as a mechanism to promote and enforce better working conditions and living standards in the territories of each Party country (U.S. Bureau of International Labor Affairs 2005). In the case of OSH, the agreement explicitly outlines the prevention of occupational injuries and compensation in case of occupational illness or injury as covered provisions under the definition of labor law (U.S. Bureau of International Labor Affairs 2005). In accordance with overarching NAFTA's liberalization principles, each party is explicitly obliged to maintain and promote high standards of labor through laws and regulation; promote compliance and enforcement through appropriate government action; give way for equitable, transparent, fair, and appropriate access to tribunals for the enforcement of labor laws; and ensure public access to and awareness of labor law provisions and procedures (U.S. Bureau of International Labor Affairs 2005). In accordance with the NAALC's goal to provide cooperative consultations to resolve labor issues, the agreement creates a multilateral institution – the Commission for Labor Cooperation (CLC), consisting of a Council and supported by a Secretariat – and domestic institutions – and the National Administrative Offices (NAOs) located in each of the countries (U.S. Bureau of International Labor Affairs 2005). It is also important to note that the NAALC does not create new law or regulations and relies on a reputational model

of compliance – enforcement and compliance through reputational sanctions on a multilateral basis – that catalyzes direct sanctioning inside the state.

Under these institutions, individuals, non-governmental organizations, unions, or employers can submit complaints to an NAO when a government fails to uphold its own labor laws as well as the obligations set forth by the NAALC. Complaints can be resolved independently by NAOs or may be brought forth for additional ministerial consultations. Upon the failure of ministerial consultations, any party may request an Evaluation Committee of Experts (ECE) to independently review issues and address possible sanctions as a means of recourse. Finally, cases may also be brought before a dispute resolution panel as a final measure. Under the ECE, all three countries are subject to evaluation and not just the defendant country outlined in the complaint (Solomon 2001). Three tiers of violations are denoted, outlining which violations are eligible to go to the ECE stage as well as which violations are eligible for sanction action. The first tier of violations, the highest tier, is where sanctions may be enacted. Such violations include labor protections for children and young persons, minimum employment standards (including minimum wage), and prevention of occupational injuries and illness (NAALC 1993). The second tier – violations that are eligible for ECE review – include prohibition of forced labor, compensation in cases of occupational injuries and illnesses, protection of migrant labor, elimination of employment discrimination, and equal pay for men and women (NAALC 1993). The third tier is not eligible for independent review by the ECE with violations including freedom of association and the right to organize, the right to bargain collectively, and the right to strike (NAALC 1993).

The second agreement, the NAAEC – dubbed the environmental side agreement – played a similar role as the NAALC. The NAAEC, as a complement to NAFTA's environmental

provisions and trade liberalization policies, was designed to provide a mechanism for promoting and enforcing environmental regulations in accordance with the environmental goals of NAFTA and the environmental laws of each party country. The goal of the NAAEC is to oblige each country to “foster the protection and improvement of the environment in the territories of the Parties for the well-being of present and future generations; promote sustainable development based on cooperation and mutually supportive environmental and economic policies; increase cooperation between the Parties to better conserve, protect, and enhance the environment...; support the environmental goals and objectives of the NAFTA; avoid creating trade distortions or new trade barriers; strengthen cooperation on the development and improvement of environmental laws, regulations, procedures, policies and practices; enhance compliance with, and enforcement of, environmental laws and regulations; promote transparency and public participation in the development of environmental laws, regulations and policies; promote economically efficient and effective environmental measures; and promote pollution prevention policies and practices” (Secretariat of the Commission for Environmental Cooperation 1993). Much like the NAALC, the NAAEC also does not create new environmental laws or regulations and is also reliant on a reputational model of compliance and catalyzation of sanctioning by states.

The NAAEC establishes the Commission for Environmental Cooperation (CEC) which comprises the Council, the Secretariat, and the Joint Public Advisory Committee (JPAC). The NAAEC, similarly to the NAALC, establishes a mechanism whereby any NGO, individual, or employer can file a submission outlining a party’s failure to enforce environmental laws and uphold the provisions of the multilateral agreement. Based on procedural guidelines set forth in Articles 13, 14, and 15 of the NAAEC, the Secretariat – on the advice of the Council – can

develop and produce a factual report that is written and researched by independent experts.

Unlike the NAALC, the NAAEC does not put forth specific recommendations for resolution or draw any conclusions about any party country's liability. However, the factual reports denote a detailed account of interactions between the government and the petitioner and provide environmental reviews to promote a transparent understanding of the state of the environment within the region in question. Further, the NAAEC also denotes a more comprehensive dispute mechanism in Part 5, but there are no recorded instances of the NAFTA signatories utilizing it due to a difficulty in establishing a persistent pattern of enforcement failure (McFadyen 1998).

Conditions of the Regulatory Landscape of OSH and Environmental Health

State of OSH Policy Before and During NAFTA

Upon the enactment of NAFTA and the NAALC, the Mexican government had various laws in place to protect worker rights and safety. Most prominently, Article 123 of the Political Constitution of the United States of Mexico establishes worker rights and safety and separates workers into two groups, governed by different bodies of law. The first group, Group A, is for private sector employees and is governed by the Ley Federal del Trabajo (National Labor Law, LFT) (Sánchez-Román et al. 2006). Group B, composed of public sector workers, are governed by the Ley de los Trabajadores al Servicio del Estado (State Workers Law, FSS) (Sánchez-Román et al. 2006). The LFT establishes basic safety and hygiene standards in the workplace and includes definitions of 161 occupational diseases, guides for determining anatomic and functional losses, and identifies permanent disabilities arising from occupational illnesses and injuries (Sánchez-Román et al. 2006). In doing so, the law serves as a guideline for workers compensation cases for both public and private employees.

Moreover, the Mexican government had also appointed the Secretaría del Trabajo y Previsión Social (Mexican Work and Social Security Secretariat, STPS) to regulate and enforce occupational safety and health (OSH) norms and standards (Sánchez-Román et al. 2006). Although different Mexican workers receive different types of access to health insurance (i.e. reporting mechanisms for OSH related issues), 40% of Mexican workers receive coverage under the Instituto Mexicano del Seguro Social (Mexican Institute of Social Security, IMSS) and the most available data exists through the IMSS (Sánchez-Román et al. 2006). Furthermore, the Secretaría de Salud (Mexican Health Secretariat, SSA) – the head department that spearheads social health services – does not play a significant role in oversight of OSH-related matters, thus presenting a gap in surveillance and enforcement (Sánchez-Román et al. 2006). In congruence with various domestic policies and institutions, Mexico had also signed on to various OSH related agreements as a member of the International Labor Organization (ILO) (Sánchez-Román et al. 2006). As a result, on a policy basis, the Mexican government was bound by many domestic, trilateral, and international standards for enforcing OSH related issues.

The Mexican government had also enacted the Reglamento Federal de Seguridad, Higiene, y Medio Ambiente de Trabajo (National Safety, Hygiene, and Occupational Environment Law) in 1997, which became the leading OSH legislation in Mexico (International Labor Organization 2013). A year later, Mexico enacted the General Regulations on the Inspection and Application of Sanctions concerning Labor Legislation Violations of 1998 which also included OSH provisions (International Labor Organization 2013). Further, under its ratified obligations to the Hygiene (Commerce and Offices) Convention of 1964 as a member of the International Labor Organization, Mexico updated its technical standards of OSH provisions related to exposure to high or low temperatures, noise, or vibrations (International Labor

Organization 2013). During this period, a push for deregulation was also occurring with proposed reforms dubbed “Plan Abascal” that aimed to deregulate the LFT and give employers more control over unionization and workers in general (Compa and Brooks 2019). However, the reforms never passed, leaving the LFT intact as it was.

The State of Environmental Policy Before and During NAFTA

The foundation of Mexico’s environmental policy was implemented in 1988 with the passage of the General Law of Ecological Balance and Environmental Protection (*Ley General del Equilibrio Ecológico y la Protección al Ambiente*-LGEEPA). The LGEEPA is the most important piece of environmental legislation in Mexico and defines the framework for Mexican environmental law, especially in relation to the environmental impacts of manufacturing (North American Production Sharing 2019). As an amendment to the Mexican constitution, the law gives the congress the authority to create environmental law at the federal, state, and local level (North American Production Sharing 2019). Although such legislation also encompasses broader environmental regulation, one of its principal aims is to prevent and control pollution generated from exploitative activities (North American Production Sharing 2019). The law also set standards for manufacturing and expanded the environmental enforcement budget from \$5 billion USD to \$75 billion USD, increased the number of environmental inspectors at the border, increased environmental compliance inspections, and closed 2,000 facilities for non-compliance (North American Production Sharing 2019). In 1992, the LGEEPA was further amended to expand the power of local authorities to enforce environmental regulations. The amendment also markedly expanded regulations of air pollution, water pollution, and hazardous waste and implemented more stringent requirements for and sanctioning of manufacturers in the event of non-compliance (North American Production Sharing 2019). The Mexican government also

instituted supplemental statutes to LGEEPA, dubbed the Mexican Statutes and Official Norms (NOMS). The NOMS are comprehensive in nature and serve as technical standards and regulations “applicable to any products, process, facilities, systems, activities, services or methods of production” (North American Production Sharing 2019). NOMS also includes laws such as the National Waters Law (1992). Mexico also has bilateral provisions with the United States to curb pollution at the border with the La Paz Agreement of 1983, the Border Environment Cooperation Commission (BECC), the International Water Boundary Commission, and the North American Development Bank (NADBank). These agreements and programs both serve the purpose of creating a bilateral commitment to protecting the environment as well as the provision of investment into poorly resourced border communities (Harrington 1998).

In 1997, the Mexican government created the Secretariat of the Environment, Natural Resources, and Fisheries (SEMARNAP) as the main executive regulatory body that oversaw the enforcement of environmental regulations (North American Production Sharing 2019). Five decentralized bodies were created within the SEMARNAP: the National Water Commission (CAN), the National Institute of Ecology (INE), the Federal Agency for the Protection of the Environment (Profepa), the National Institute of the Fishery (INP), and the Mexican Institute of Water Technology (IMTA) (North American Production Sharing 2019). These organizations aimed to set standards, enforce environmental regulation, and grant licenses, permits, and authorizations (North American Production Sharing 2019). At this point, NOMS also received an update through the enactment of the General Law on the Prevention and Comprehensive Management of Waste (2004) (North American Production Sharing 2019). The NOMS has continued to evolve periodically over time, but such regulations are out of the scope of this thesis.

The Pre-NAFTA Agricultural Domestic Market and Government Intervention

Up until the 1982 debt crisis, Mexico heavily employed state intervention mechanisms in the regulation of agricultural commerce. Such provisions were primarily carried out by the major state enterprise the National Company of Popular Subsistence (CONASUPO) and included crop price support for producers of staples, subsidies, credit and insurance to producers, government participation in processing of grains, milk, and oils, retail shops for basic foods for the poor, involvement in the improvement of seeds and production of fertilizers, and consumption subsidies for the poor (Yunez-Naude and Paredes 2002). Another important factor in the historic state-based agriculture was the ejido system where the government established a system of communal land ownership to ensure a self-sufficient rural populace and prevent the over-concentration of land-ownership through the restriction of private sale (Hart 2018; White, Salas, and Gammage 2003).

At the onset of the 1982 debt crisis and the beginning of Mexico's fiscal liberalization, CONASUPO underwent significant administrative reorganization that resulted in the reduction and almost outright elimination of state-intervention in agricultural policy – ranging from the elimination of subsidies and changing of subsidy programs to privatization of agricultural State enterprises (Yunez-Naude and Paredes 2002). Mexico's accession into GATT did not bring on any structural changes for agricultural products, with CONASUPO covered products still subject to import licenses (Yunez-Naude and Paredes 2002). However, in the early 1990s – leading up to NAFTA – Mexico's domestic liberalization reforms abolished direct price support to 9 out of the 11 basic crops and subsidies were further drastically reduced (Yunez-Naude and Paredes 2002). In 1991, the anticipation of joining NAFTA also led the government to abolish the ejido system and move towards the privatization of land ownership, to where farmers could sell their land or

lose it to foreclosure (Schmidt and Gruben 1992; White, Salas, and Gammage 2003). Further, the creation of the Agricultural Marketing Board (ASERCA) substituted the traditional direct interventions of CONASUPO for sorghum and wheat, exercising an indifference pricing strategy where there is a concentrated price of the crop. The producers sell the crops to processors at the international market price and are then paid the difference between the international price and the concentrated price by the government (White, Salas, and Gammage 2003). CONASUPO essentially exercised the same price support system for maize and beans, but gradually decreased its involvement in the domestic markets as it was declared a last resort buyer and then eventually abolished in 1999 (White, Salas, and Gammage 2003).

In addition, prior to the enactment of NAFTA, Mexico's trade-weighted tariffs on U.S. agricultural products averaged about 11% with some products such as fruits and vegetables being subject to tariffs as high as 20% (Johnson 2017). With the anticipation of NAFTA and changes to these protectionist dynamics, the Mexican government created the Program for Direct Support to the Countryside (PROCAMPO) that aimed to support domestic producers of staples by replacing the guaranteed price system with a payment per hectare for the planting of any of the nine eligible crops within the three homologous agricultural cycles prior to August 1993 (Secretaría de Agricultura y Desarrollo Rural 2018). Most of the eligible crops are cultural staples and the categories are cotton, rice, safflower, barley, beans, corn, sorghum, soybeans and wheat (Secretaría de Agricultura y Desarrollo Rural 2018). The program was intended to last until 2008 (the point of full agricultural liberalization), but is still operating to this day (White, Salas, and Gammage 2003). With that, the Mexican government attempted to protect small, local producers from the competition brought by the heavily subsidized crops from the U.S. and Canada while

also incentivizing said producers to transition into more competitive crops (Yunez-Naude and Paredes 2002).

The Introduction and Goals of the NAFTA Agricultural Chapter

With the advent of NAFTA came the radical transformation of the domestic protection of Mexico's agricultural sector as well as the expansion of Mexico's access to the Canadian and American agricultural markets (Yunez-Naude and Paredes 2002). Under NAFTA, two agreements were negotiated with one between Mexico and the U.S. and another with Mexico and Canada (Yunez-Naude and Paredes 2002). Mexico granted market access to the U.S. and Canada by fully liberalizing its basic staple crops and allowing said crops to flow in as imports (Yunez-Naude and Paredes 2002). Starting in 1994, Mexico immediately removed tariffs on U.S. sorghum, fresh strawberries, oranges, other citrus, carrots, and most tree nuts (Johnson 2017). However, some imports underwent a transitory period where tariff rate quotas (TRQ) were used as a mechanism to help transition some basics into full liberalization; maize and dry beans were set to be fully liberalized by 2008, while grains and malt barley were to be fully liberalized by 2003 (Yunez-Naude and Paredes 2002). Such products were deemed sensitive in NAFTA negotiations and were thus granted these TRQ phase out protections, however additional tariffs were not imposed for under in-quota imports and tariffs were gradually reduced over time for above in-quota imports (Yunez-Naude and Paredes 2002). In 1998, Mexican tariffs were removed for some U.S. fruits and cotton; in 2003, Mexican tariffs were removed for U.S. wheat, barley, soybean meal and soy oil, rice, and some dairy, tobacco, fruits, and meat products; and finally in 2008, agricultural commodities were fully liberalized with the removal of tariffs on U.S. corn, sugar, dried beans, and milk powder (Johnson 2017). Although full liberalization was not achieved until 2008 – a year out of scope for this thesis – such products were still subject to

much more relaxed trade restrictions and thus can still be examined in the context of NAFTA's impact between 1995 and 2005. Furthermore, Mexico also negotiated a safeguard clause for some agricultural products, where it can be used as a countervailing mechanism when an increase in imports poses a serious threat to the agricultural sector (Yunez-Naude and Paredes 2002). Such mechanisms worked in tandem with programs such as PROCAMPO to help minimize the shock of NAFTA's agricultural liberalization policies.

In the agricultural chapter, specifically, NAFTA's goals included the elimination of tariffs and quotas, the enhancement of regulatory cooperation and reduction of barriers to trade from sanitary and phytosanitary (SPS) measures; the implementation of rules of origin where tariff reductions do not apply to products outside of NAFTA parties; the establishment of equal treatment of foreign investors; the creation of a dispute-settlement mechanism through Chapters 11, 14, 19, and 20; the prohibition of export subsidies (except between the U.S. and Mexico); the establishment of grade and quality standards; and the reduction of barriers to trade by encouraging the parties to implement domestic policy that avoids distortions in trade (NAFTA: Chapter Seven: Agriculture and Sanitary and Phytosanitary Measures 1994). With that, NAFTA's predicted impact was the implementation of a neoliberal regional, privatized agricultural market where product prices would fall, imports would increase, yields of importables would increase, agricultural productivity and efficiency would increase, investment would increase, and rural out-migration would increase to attract labor into urban markets and diversify overall economic activity and stability (Yunez-Naude and Paredes 2002). NAFTA does not necessarily incorporate goals related to human health, food sovereignty, or food security, with the overarching liberalized commodification of agricultural products serving as the underpinning for greater consumer access and indirectly improving welfare (i.e. trickle down benefits).

Methodology

With the context of Mexico's political economy established, this study aims to understand the impacts of trade liberalization on SDOH through a critical political economy lens. I will employ a qualitative case study methodology to examine multiple SDOH pathways in Mexico within a single FTA: NAFTA. Given Mexico's economic background and status as a semi-periphery, upper-middle income country, it serves as an interesting case country that can provide greater insight into the more direct impacts of FTAs on the SDOH of semi-periphery nations, especially when that country is regionally integrated with and juxtaposed to political economies with high income statuses – in this case: the U.S. and Canada (World Bank Development Report 1994). Further, this thesis will aim to deduce NAFTA's impact on Mexican SDOH pathways in the period between 1994 and 2005. This period is most optimal for assessment as it gives a substantial amount of time for NAFTA provisions to take effect with minimal interference from exogenous economic conditions such as the Global Financial Crisis (GFC). Any assessment of NAFTA after 2005 can have potentially clouded data as the GFC could have had considerably negative impacts on SDOH from the economic devastation that ensued.

This study will focus on three linkages to SDOH: employment (with respect to household income and economic insecurity), regulation (with respect to occupational safety and environmental health), and agricultural commerce (with respect to food insecurity and sovereignty). I will explore each pathway within the context of NAFTA's goals and intended outcomes as well as relevant policy, institutions, and economics in Mexico prior to the enactment of NAFTA. With that, I aim to deduce the actual outcomes post-enactment in accordance with these established contexts. Within my analysis, I primarily use the NAFTA agreement and two

side agreements – the North American Agreement on Labor Cooperation (NAALC) and North American Agreement on Environmental Cooperation (NAAEC) – to assess the intended goals and corrections for policy impact. To determine impacts, I use quantitative data sets from the World Bank, the Food and Agriculture Organization of the United Nations (FAO), and the International Labor Organization (ILO) and various qualitative data sources from U.S. and Mexican government agencies, the Inter-American Development Bank, Sierra Club Reports, Human Rights Watch reports, testimony to the U.S. Senate Subcommittee on International Trade of the Committee on Finance, reports from the Congressional Research Service, reports from the Women’s Edge Coalition and Public Citizen, and other scholarly resources from various authors and experts.

Employment Methods

To examine employment, I assess the aggregate and sectoral impacts of NAFTA on the income and economic insecurity of labor. To assess the aggregate, I look at broader measures of employment using quantitative data sets from the World Bank development indicators to examine aggregate income and economic insecurity impacts. With regard to the more nuanced sectoral impacts, I primarily examine manufacturing and agricultural employment as the two economic sectors are most sensitive to NAFTA provisions. I utilize reports from the Inter-American Development Bank, the Women’s Edge Coalition, Public Citizen, and other secondary scholarship to examine these impacts.

Since manufacturing has two facets – skilled and unskilled labor – I examine NAFTA’s impact on two of the primary hubs for Mexican manufacturing during the NAFTA period: maquiladoras (unskilled laborers) and disguised maquilas (skilled laborers). Maquiladoras primarily create export products that only require unskilled laborers, whereas disguised maquilas

specialize in the export of more complicated products such as machinery and electronics and thus require more skilled laborers for production. Because these two divisions of manufacturing were responsible for the vast majority of export production from Mexico in the NAFTA period, the examination of the outcomes on those laborers provides an insightful window into income and insecurity gaps and/or convergence between skilled and unskilled laborers as a result of free trade. To assess agricultural employment, I primarily assess it within the context of the informal economy as the majority of agricultural workers (especially subsistence farmers) lack the adequate skill sets to effectively transition into other forms of formal labor and are thus more likely to transition into informal labor markets for income. Examining the relationship between agricultural employment and the informal economy is important in the discussion of employment and its relationship to health as it helps yield a better understanding of the socio-economic fate and public health of rural subsistence communities post-FTA. With that, the question then becomes, to what extent do different employment outcomes affect the employment SDOH of various workers and their communities? By answering this question, we can deduce the broader impacts of trade liberalization on SDOH by taking into account how the intended goals and policies of FTAs present different outcomes for different types of workers and their communities.

Regulation Methods

As the first multilateral FTA to create institutions and agreements that explicitly outline commitments to protecting and promoting occupational and environmental health, it is necessary to examine the efficacy of their frameworks. As contextualized in the background section, two side agreements will be examined – the North American Agreement on Labor Cooperation (NAALC) and North American Agreement on Environmental Cooperation (NAAEC) in order to assess NAFTA's ability to aid or impede upon regulation. For environmental regulation, an

additional Chapter 11 case will also be examined as it provides valuable insight into the relationship between FTAs and the regulation SDOH. These agreements primarily employ a neoliberal reputational compliance model wherein they place a greater reliance on the use of reputational sanctions and dialogue as a method of compliance with the obligations rather than immediate direct sanctioning (Guzman 2001). Direct sanctions are seen as a last resort enforcement mechanism within the two side agreements, thus this creates conditions where the agreements primarily rely on reputational sanctions. A critical political economy framework can provide a more nuanced assessment of the true efficacy of the model as a means of promoting OSH and environmental health. Such analysis will be completed in the context of the aforementioned existing domestic occupational health and environmental regulations in the period between 1994 and 2005. With that, the question then becomes: do neoliberal reputational compliance agreements in FTAs enhance or impede upon the regulation SDOH pathway? By answering this question, we can then examine the totality of FTA policies and their impact on SDOH writ large.

For the assessment of the efficacy of the NAALC, the NAO submissions from 1994 to 2005 will be examined to assess NAFTA's impact on OSH regulation. In total, seven submissions regarding OSH issues were brought before the NAALC in the period between 1994 and 2005. Although there are many more NAO submissions that have occurred within this period, they were issues surrounding labor law violations outside of Mexico or were not directly related to OSH violations. For this analysis, only NAO submissions that referred to OSH issues within Mexico will be examined to account for changes in the Mexican regulatory landscape and the government's commitment to its OSH labor law obligations post-NAFTA.

I will examine each NAO submission from 1997 to 2005 that pertains to an OSH issue. The first OSH related NAO submission occurred in 1997, hence that year will be the starting point of analysis. Each NAO submission is extrapolated in a chart to include findings and outcomes, as found in secondary qualitative data and the NAO investigation reports themselves. The efficacy of the submissions and subsequent review are determined by the outcome's satisfaction of the following four goals of the NAALC: 1) improvement in working conditions; 2) transparency in labor law administration; 3) compliance with labor laws; and 4) enforcement of labor laws. For the purposes of OSH regulation, the four criteria above are most relevant as the other goals of the NAALC are primarily related to wage and organization rights. With this criteria as a framework, I will assess the extent to which the OSH issue was rectified. Remediation such as sanctions, multilateral cooperation, and compensation will indicate high levels of compliance, enforcement, and transparency to the extent that the satisfaction of those goals create conditions wherein the victims of OSH violations received proper remediation and better working conditions for their current and future health. This analysis will be valuable to the assessment of SDOH and public health writ large as it will provide insight into the efficacy of multilateral reputational compliance models within FTAs as strategies for remediation of OSH violations and protection of the current and future health of workers within workplaces directly affected by trade provisions.

For the assessment of the efficacy of the NAAEC, Article 14 and 15 submissions and factual reports will be examined to assess its impact and efficacy. Specifically, the CEC Submissions for Enforcement will be examined in the period between 1994 and 2005. Like the NAO submissions, I organize the cases in a chart with the date filed, description, and the outcomes. Over this time period, 26 CEC submissions have been filed against the state of

Mexico. Of those 26, only 9 submissions reached the final stages of review by the Secretariat to where a factual report was subsequently issued. The rest of the cases underwent a review and were closed once the Secretariat determined that a factual report need not be issued or the process was terminated by other measures. Beyond the review process, it is difficult to obtain additional information about any actions taken to rectify the issues as Mexico has repeatedly requested to keep files confidential in matters where factual reports were not issued. For the purposes of this analysis, CEC submissions that produced a factual report will be examined to determine the efficacy of the proceedings on an enforcement, compliance, and environmental protection basis. Its efficacy will be determined based on the Mexican government's action to enforce, comply with, and/or improve environmental conditions where human health and/or the public interest is directly impacted. In addition, NAFTA's Chapter 11 Provisions were also enacted in 1994 which created an investor-state dispute resolution system that aimed to protect cross-border investors from discrimination and expropriation. In doing so, Chapter 11 allowed investors to seek monetary damages in the event of said discrimination or expropriation (U.S. Department of State 2022). A particular case directly relates to environmental regulation and will thus be examined with the CEC Submissions.

Agricultural Commerce Methods

To assess agricultural commerce, I will explore the quantitative food balance data sets from the FAO and reports from Public Citizen, the Women's Edge Coalition, and journal articles from various authors that account for the food sovereignty and security impacts in Mexico – mostly in relation to rural, subsistent producers and communities. In doing so, this analysis will yield a more complete story of health within the context of security and sovereignty as I will look to aggregate measures of food supply and security along with local, community impacts.

The main question arising out of this SDOH pathway analysis is: does agricultural liberalization enhance or impede on food security and sovereignty? By answering this question, we can more definitively address to what extent trade liberalization affects the SDOH writ large by examining the circumstances surrounding inputs to health such as access to food.

Analysis

Employment

Prior to NAFTA the conditions of the labor market were on the upswing. The Mexican economy experienced a 3.6% growth leading up to the agreement (Martin 2000). Mexico also had a relatively low unemployment rate of 3.7% (Martin 2000). However, the definitions of unemployment in Mexico made that number misleading and there was no way to truly know the full extent of unemployment (Martin 2000). In addition, this number was skewed as the vast majority of Mexicans worked in the large informal sector and had very little opportunities for higher skilled, formal work opportunities. On an official basis, as estimated by the ILO, 25.2% of employment was in industry, 20.74% was in agriculture, and 54.06% was in services in 1993 (World Bank 1993). With the aforementioned goals in NAFTA, there was a hope that the formal sector would be stimulated with the introduction of NAFTA.

After the implementation of NAFTA, aggregate formal employment had a net 13.7% increase, totalling to about 870,000 jobs, with the largest gains in manufacturing production jobs (Trachtenberg 2019). Border states, as well as regions close to Mexico City, engaged in greater trading with increases between 124% and 331% (Trachtenberg 2019). As a result, employment increases followed suit, with areas around Mexico City seeing increases over 50% and other states seeing increases anywhere from 12% to 32% (Trachtenberg 2019). These differences are

highly regional with the most gains seen in border states and the center industrial hub of Mexico City. With that, manufacturing productivity – and even worker productivity in general – increased during this period, however real wages remained fairly stagnant and remained lower at the end of the decade than they were at the onset of NAFTA (Polaski 2003). The growth in production work is also corroborated by the increase in exports (insert figure 1) and the manufacturing sector accounted for 81.6% of total exports by 2005 (Delgado-Wise and Márquez Covarrubias 2007). Within this period, the five most highly exported products to the United States included: electrical machinery and equipment, vehicles and their parts, machinery and appliances, mineral products (oil), and clothing products (Observatory of Economic Complexity 2022).

Aggregate income seemed to improve in relation to poverty as poverty had overall reductions within this period, with a spike across all types of poverty in 1996 (insert figure 2). Yet, the majority of the population was still considered to be in poverty – making \$5.20 or less. In examining aggregate economic insecurity, the working poor metrics also reduced. Yet, over 15% of the total working population was considered working poor (insert figure 3). Unemployment also remained fairly low during this period, however it is unclear if this is attributable to shortcomings in measurement mechanisms as unemployment insurance does not exist in Mexico (O'Connor, Dillon, and Weintraub 1998). Additionally, the percentage of workers being wage and salaried workers steadily increased with an interesting convergence occurring for men and women (insert figure 4). In the same period, vulnerable employment – individuals engaging in own-account and contributing family work – also steadily decreased during this period, with divergence occurring between men and women with a larger percent of female labor engaging in vulnerable employment (insert figure 5). However, such gains in economic security

and income were also offset by profound net losses in the agricultural sector – approximately 1.3 million – that resulted in many rural farmers losing work and being forced into poverty and/or the informal economy (Public Citizen 2018). These trends of churning in the agricultural sector will be explored more in depth within the context of food security and sovereignty in the agricultural commerce section, but are also noted in this section to address disparities in wages and insecurity.

Looking at the aggregate impacts, we can see that there was a net gain for workers with regard to economic security and income. However, the impacts are incredibly nuanced as there are exogenous factors involved outside of NAFTA as well as some divisions occurring. In examining real wages, it is clear that real wages stagnated while worker productivity went up. However, it is unclear if NAFTA had any impact on this phenomenon as the Mexican Peso Crisis between 1994-1995, as well as previous macroeconomic shocks, contributed to the setbacks in wages (Polaski 2003). The assumption under NAFTA was that an increase in productivity in low-skilled work would contribute to an increase in wages, yet these low-skilled jobs did not retain those assumed benefits (Polaski 2003). However, those gains were not necessarily usurped by the demand for and productivity of skilled workers either as workers with technical and advanced degrees also saw lower real wages in 2000 than in 1993 (Polaski 2003). Again, it is unclear if NAFTA had any impact on this trend due to other macroeconomic setbacks that occurred at the same time. Some research suggests that NAFTA helped cushion wage devaluation, insecurity, and employment impacts as 40% of the FDI that occurred during this period would not have happened without NAFTA in place (Villarreal 2010).

Looking at income on the basis of poverty and working poor metrics, it is clear that NAFTA might not have generated expected reductions in poverty or effectively created more

economically secure, good quality employment. In examining the labor force participation rate, we can also see that NAFTA may have contributed to a difference in wages and salaried workers with vulnerable employment, as well as greater disparities in distribution and more disproportionate impacts on women (insert figure 6). There is a significant gap in labor participation amongst men and women, thus any losses or gains in employment incurred under NAFTA affected women differently and disproportionately – depending on the type of labor they were engaged in, as will be explored in the sectoral impacts.

Moreover, when observing the divisions in gains in manufacturing and losses in agriculture suggest that NAFTA exacerbated regional inequalities and reversed long term trends of convergence in wages due to disparities in the distribution of work highly favored by NAFTA provisions (Polaski 2003). Institutional mechanisms such as collective bargaining and minimum wage laws have also contributed to the disparity in distribution of productivity gains amongst employers and employees (Polaski 2003). With the influence of these institutional mechanisms, we can assume that NAFTA impacts were felt differently across sectors and genders. With these aggregate impacts in mind, the growth in manufacturing work and losses in agriculture deserve closer examination beyond the aggregate focused neoliberal eye. There are three dimensions worth examining, with regard to the work environments in which laborers are executing this production: maquiladoras (i.e. unskilled labor), disguised maquilas (i.e. skilled labor), and the informal economy. In examining the export data, the types of exports become relevant to understanding the labor impacts under NAFTA. Such will be explored further within the three case divisions. Both the growth in manufacturing and loss in agriculture produced similar results.

Sectoral Impacts on Income and Economic Insecurity

Maquiladoras - Unskilled Manufacturing

Through the introduction of NAFTA, greater control of maquilas was ceded to transnational corporations (TNCs). Under NAFTA, the maquiladora sector employed approximately 700,000 more people by 2005 than before NAFTA (Polaski 2003). During this period, the average maquila wage was \$8.50 a day, in comparison to the lowest minimum wage of \$1.50 a day (O'Connor, Dillon, and Weintraub 1998). After the enactment of NAFTA, real wages in the maquila sector grew approximately 3% or slightly less (Gutiérrez-Haces et al. 2012). Maquilas essentially provided a more viable employment alternative than work issuing the minimum wage. However, these gains were not necessarily distributed equitably and were increasingly characterized by a “race to the bottom” as investors sought to compete globally and retain higher profits by suppressing wages and decentralizing production (Arriola 2007).

Under NAFTA, employment in maquiladoras rapidly increased as the sector grew. Of the total 1.7 million maquila workers, the majority of them were women, with many of them residing within nearby shantytowns with poor housing conditions (Arriola 2007). Women make up this majority as they are perceived to be more productive due to a perception of docility and agility (Giles 2006). However, a different explanation as to why women were predominantly employed is due to the fact that women are more easily exploitable due to a lack of more secure, formal opportunities for employment (Giles 2006). The majority of the women employed were 16-25 years old, single, childless, had not finished primary school, or retained any additional work experience outside of manufacturing (Human Rights Watch 1996). Women also experienced greater instances of economic insecurity due to pervasive sex discrimination, with minimal presence of or access to remedies. Due to explicit maternity provisions in Mexican federal labor

law, the precarious preference for childless, single women created conditions wherein women were routinely subject to invasive screening for current and/or future pregnancy (Human Rights Watch 1996). In the event that a woman did become pregnant while employed, supervisors routinely attempted to garner forced resignations by deliberately tasking said women with more grueling duties, horrible working conditions, and the imposition of longer work hours – ultimately to avoid the mandated severance costs as well (Human Rights Watch 1996). For the women who did have children, the double burden of child care resulted in women working as much as 18 hours a day combined from their work in the maquilas and domestic household duties (White, Salas, and Gammage 2003). Additionally, women were also subject to sexual harassment and also became more vulnerable to femicide and gender-based violence (Stack 1998; Arriola 2007). Such is evidenced by the proliferation of murders within the border region, colloquially known as Maquila Murders wherein 100 maquila women were found dead between 1994 and 2000 (Arriola 2007).

Although these trends of gender-based violence and discrimination were present before NAFTA, the expanded activity of Maquiladoras under NAFTA made the expanded sex discrimination an indirect byproduct of NAFTA. Looking at income and economic insecurity within this case study of unskilled, female laborers, there were mixed impacts. The expansion of Maquiladoras under NAFTA created more formal work opportunities for women and may have increased their wages and labor participation, as evidenced by the aggregate gender convergence in wage and salaried employment. However, due to the structural discrimination issues in maquiladoras, NAFTA's acceleration of maquiladora production inadvertently created conditions where women became more vulnerable in these work spaces and only marginally gained employment stability and income.

Disguised Maquilas - Skilled Manufacturing

In addition to traditional maquilas, the manufacturing sector was significantly supported by temporary import incentive schemes that granted maquiladora-esque subsidies and duty exemptions to various firms that produced inputs for Pitex or Altex (the Mexican temporary import incentive schemes) (Gutiérrez-Haces et al. 2012, 150). Combined with traditional maquilas, these hubs for manufacturing accounted for over 80% of the manufacturing occurring in Mexico from 1994-2005 (Gutiérrez-Haces et al. 2012). Dubbed as ‘disguised maquilas,’ these hubs of manufacturing were largely controlled by U.S.-based TNCs and generated more sophisticated, high value added manufacturing products such as electronics, automobile parts, and other machinery (Gutiérrez-Haces et al. 2012). However, they are differentiated from maquilas in that the work is more specialized in nature. Due to this, there were less, but higher skilled workers (about 500,000) that retained better union representation and earned wages that were 50% higher than traditional maquilas (Gutiérrez-Haces et al. 2012). Yet, their wages still remained meager compared to that of their counterparts in the U.S., with a wage differential of 1:7 (Mexico-U.S.) (Gutiérrez-Haces et al. 2012). Under NAFTA, these hubs became a crucial component of the specialized manufacturing of exports and grew in demand as more machinery and automobile exports began to cross the border.

Despite the export boom of these products under NAFTA, the real wages of disguised maquila workers dropped 12%, while traditional maquilas saw an increase during the same period (Gutiérrez-Haces et al. 2012). This is also corroborated by a greater shift towards deindustrialization as TNCs began to prioritize subcontracting and turned to other TNCs for supply, due to a growing need for high quality, capital intensive production (Gutiérrez-Haces et al. 2012). Further, there is little data on the demographic demarcations within disguised

maquilas, especially with regard to gender. However, the industry's emphasis on more skilled labor purports a bias towards more skilled males as women were rarely afforded opportunities for more specialized employment.

Overall, it is unclear if the drop in wages is attributable to NAFTA as it could also be attributable to the peso crisis and/or the reconfiguration of the global supply chains that began to favor Southeast Asian export production. Yet, the race to the bottom phenomenon can be observed as the drops in real wages in disguised maquilas suggests a value shift to the greater exploitation of labor as a means of value added production under NAFTA – i.e. a greater emphasis on cheap labor. The trends of subcontracting and the growing need for high quality, capital intensive production resulted in the reduction of jobs for Mexican firms and made union represented workers more insecure within the TNC-controlled disguised maquila sector (Gutiérrez-Haces et al. 2012). It is unclear if this trend is directly attributable to trade innovations by NAFTA, or other FTA agreements that gave Southeast Asian countries greater comparative advantage in capital intensive, highly skilled manufacturing.

The Informal Economy and Migration - Agriculture

The Mexican informal economy is primarily characterized by low-skilled, low productivity service-sector work such as domestic work, street vending, and personal services/repairs (Polaski 2003). NAFTA's direct impact on the losses in agricultural work contributed to the expansion of the informal sector, as agricultural workers engaged in intersectoral movement (churning) post-displacement (Polaski 2003). During the period between 1994 and 2005, informal employment accounted for close to 50% of all employment in Mexico and most of this growth came from those agricultural losses (White, Salas, and Gammage 2003). Such work ultimately consisted of employment in micro-enterprises, self-employment, and other

work that lacked worker protections and benefits such as pensions and healthcare (Polaski 2003). This proliferation of informal employment also disproportionately impacted women, as women already lacked formal work opportunities. Women displaced from the agricultural sector, as a result, primarily engaged in the sale of food roadside and worked longer, more grueling hours to gain income in the informal sector (White, Salas, and Gammage 2003). The prevalence of these informal opportunities led to an influx of women seeking employment through those channels, resulting in the crowding out of profits and diminished income for all those involved (White, Salas, and Gammage 2003). Wages diminished as a result, and the undervaluing of female labor within the informal sector further contributed to the depression of female wages in other sectors as options for employment dwindled (White, Salas, and Gammage 2003).

In conjunction with the informal labor market, labor patterns also shifted under NAFTA through migration patterns, either into urban areas or into the United States. The migration patterns were characterized by both documented and undocumented channels of movement to the United States, with such patterns effecting men and women differently. Women were more likely to undertake the documented route, while men were more likely to immigrate on an undocumented basis (White, Salas, and Gammage 2003). In 1996, 18% of all legal immigration into the United States originated from Mexico (U.S. Department of Justice Immigration and Naturalization Service 1997). In 2005, Mexican workers accounted for the largest group on all immigration statistics, and were the largest group to enter based on temporary worker status (DHS Office of Immigration Statistics 2006). In addition to the undocumented immigration, this trend partially explains why female employment in non-agriculture in Mexico grew during this time (insert figure 7). Men who migrated into urban areas or into the United States increasingly left behind households with female heads – resulting in the increase in the percentage of

female-heads of household in rural areas (White, Salas, and Gammage 2003). However, this undocumented migration became an increased risk with the subsequent militarization of the U.S.-Mexico border (White, Salas, and Gammage 2003). For those who were able to bypass the risks of migration, the employment dynamics for these workers are characterized by employment in low skilled work or agricultural work as between 2.2 and 3.1 million of the 7.2 million undocumented immigrants worked three agri-food sectors: farming, fishing, and forestry; meat and fish processing; and food services (Olson 2008, 422). Ultimately, these trends are corroborated by the exponential increase in personal remittances received in Mexico (insert figure 8).

Under NAFTA, personal remittances became an incredibly important source of income for rural communities, accounting for 40% of total rural income (White, Salas, and Gammage 2003). Interestingly, these remittances became an important anti-poverty mechanism as the same female-led households were less likely to fall below the poverty line if they had access to remittances and opportunities in non-agricultural employment (White, Salas, and Gammage 2003). Remittances also served as great substitutes for the lackluster publicly financed social infrastructure and generated community income as every \$1 in remittances created an additional \$1.78 in community income (White, Salas, and Gammage 2003). These remittances were also channeled through remittance networks that were then reinvested into public works projects within rural communities (White, Salas, and Gammage 2003). Additionally, almost 20% of the capital invested in urban Mexico was attributed to these remittances (White, Salas, and Gammage 2003). In essence, the workers of the informal and migration economies experienced a reduction in wages and greater economic insecurity, but access to remittances improved the income and economic security SDOH factors of their communities.

Summary

In summary, there were mixed impacts on the employment SDOH on an aggregate and sectoral basis. Aggregately, there were net gains in employment across the board with the majority of the gains concentrated in production work. Worker productivity grew as a result, however wages and economic security did not necessarily keep up. It is unclear if these aggregate impacts can be directly attributable to NAFTA due to the Mexican Peso Crisis. On a sectoral basis, there were also mixed outcomes, but resemble each other across sectors. Within the manufacturing divisions – maquiladoras and disguised maquilas – there was an overall increase in productivity and employment. Within maquiladoras, wages went up slightly while disguised maquilas saw a wage reduction. As a result, it seems that NAFTA may have not significantly stimulated or converged wages and security for skilled and unskilled labor in the manufacturing sector. Due to NAFTA's expansion of the manufacturing sector and its two largest divisions, there was greater labor exploitation occurring within manufacturing and reductions in wages and economic security as a result. In the agricultural sector, there were profound losses in employment that pushed many rural subsistence farmers into the informal economy or industrial sectors in urban areas. In addition, this also led to a rapid influx in migration to the United States and domestic urban areas. Income impacts varied as migrations resulted in an exponential increase in personal remittances that positively impacted rural communities. Women were also predominantly engaged in the informal sector employment, however it also gave women greater agency in their households as their male family members migrated. Overall, NAFTA's impact on the employment SDOH is very nuanced and produces varying outcomes. At the foundation of the impact, however, is greater exploitation across all sectors and some form of income loss and instability.

Occupational Safety and Health Regulation

Reports of occupational accidents have been on a downward trend since the enactment of NAFTA, with the exception of occupational diseases which may have a lag effect due to the longer timelines for manifestations of illness (insert figure 9). Occupational injuries and illnesses as instances of reported occupational accidents have decreased by 48% between 1994 and 2004 (insert figure 9) (Sánchez-Román et al. 2006). The outcomes of the NAALC side agreement NAO submissions can provide some insight into why this trend occurred, if it truly occurred. As mentioned in the methods section, the NAO submissions outcomes will be assessed on the four criteria of improvement in working conditions, transparency, compliance, and enforcement of OSH labor law.

Table 1: NAO Submissions and Outcomes

Submission	Year	Description	Findings	Outcome
U.S. NAO Submission 9702	1997	Workers at the Han Young export processing plant alleged health and safety issues including malfunctioning overhead cranes, dangers of electrocution, no ventilation for welding byproducts, unsanitary lavatory conditions.	Determined that Mexico complied with the NAALC, but the efficacy of its enforcement was put in question.	Ministerial consultations (U.S. NAO 1997); U.S. and Mexican experts participated in a government-to-government meeting concerning the OSH issues; the factory was ultimately relocated, the insurgent workers were fired, and were not remedied fully (Williams 2003).
U.S. NAO Submission 9703	1997	Workers at the ITAPSA plant alleged exposure to asbestos and other toxic substances without being provided adequate personal protective equipment (PPE).	The NAO investigation found that inspections were up to legal standards, but raised questions about their efficacy; the NAO was also unable to ascertain if issued fines were collected.	Ministerial Consultations; U.S. and Mexican experts participated in a bilateral meeting concerning the OSH issues and developing a program to disseminate knowledge about procedures and general information on the internet (Solomon 2001). No record of the OSH issues compensated or rectified directly.

Canadian NAO Submission CAN-981	1998	Workers at the ITAPSA plant submitted another complaint alleging exposure to asbestos and other chemicals, little to no OSH training, a lack of proper medical examinations, inadequate Spanish signage of dangerous materials. Workers also expressed that the issue was not rectified by proper authorities.	The investigation suggested that Mexico failed to fulfill its obligations under Article 3(1)(b) of the NAALC.	Ministerial consultations between the Mexican and Canadian labor secretaries; Canada formally requested ministerial consultations on March 31, 1999; no record of ministerial consultations actually taking place. No record of remediation, compliance, or enforcement.
Mexican NAO Submission Number 9901	1999	Executive Air Transport (TAESA) flight attendants wanted to unionize in a craft union to represent them to address issues concerning safety and health hazards aboard TAESA.	The investigation found that TAESA aircraft may have had serious deficiencies that instituted possible hazards for the crew. But Mexican authorities took action in some instances, such as in a fatal crash incident.	Ministerial consultations and a public seminar on unionization rights and knowledge. Unclear if the OSH issues were addressed.
U.S. NAO Submission 2000-01	2000	Workers at Auto Trim and Custom Trim/Breed Mexicana approached management regarding OSH conditions and worker's compensation in 1992; suffered skin, respiratory, eye, central nervous system, carpal tunnel, back pain, and reproductive health problems due to exposure of chemicals and repetitive working conditions; in 1999 the workers also petitioned STPS, IMSS, and SSA to engage in inspections; plant managers failed to refer workers to IMSS (Compa and Brooks 2019)	Found that STPS and IMSS carried out periodic investigations, unclear if the SSA did anything; the findings raised questions about the efficacy of those investigations and reports. Ultimately, found that the Mexican government's failures to keep records and address the issues are inconsistent with their obligations under the NAALC	Ministerial consultations; no record of compensation or other sanctions. However, it was the first case that came very close to an ECE and sanctions against Mexico (Compa and Brooks 2019). The public communication is regarded as "a test case for the effectiveness and transparency of the NAALC." (Compa and Brooks 2019). It mobilized experts to visit the site and was one of the first NAO submissions with a comprehensive investigative procedure. The Maquiladora Health and Safety Support Network (MHSSN) pushed the U.S. Department of Labor to move forward to initiate an ECE and put forth practical solutions to the issue at hand, but were ultimately unsuccessful (Compa and Brooks 2019). It also indirectly mobilized the workers at the Kukdong factory to strike, seize the factory, and protest poor OSH treatment and conditions, a product of the sunshine effect (Caulfield 2010).

U.S. NAO Submission 2003-01/Canadian NAO Submission	2003	OSH issues in two garment factories in Puebla, Mexico, operated by Matamoros Garment and Tarrant Ajalpan (Maquila Solidarity Network 2003). Workers were given poor PPE and inadequate face masks and were exposed to dangerous solvents. Also poor ventilation, inadequate and dirty lavatories and poor ergonomic support for the workers, leading to back pain.	Submitters failed to provide evidence of formal complaints, yet there is credible evidence to suggest that workers made authorities aware through other means. Periodic inspections may have also pointed to issues that Mexican authorities were aware of. The NAO could not make a definitive conclusion about the Mexican government's violation of OSH standards.	Ministerial consultations; no record of any other remedy beyond that.
U.S. NAO Submission No. 2005-03	2005	Workers at a textile plant operated by Rubie's de Mexico alleged that the Mexican government failed to prevent occupational injuries and illnesses as well as issue compensation for OSH violations. Submitters reported dirty bathrooms, cockroach infestations, poor quality food that made workers sick, requirements to buy water, PPE and toilet paper from the company, with many foregoing the protection as it was too expensive (Compa and Brooks 2019). The factory also engaged in illegal child labor and subjected children to OSH safety issues (Compa and Brooks 2019).	The Mexican government failed to conduct periodic inspections, letting labor law violations go unchecked for years.	Ministerial Consultations; no record of remedy and unclear if Mexico accepted the consultations.

Table 1: NAO Submissions Under the NAALC. Source: Bureau of International Labor Affairs. 2015. "Submissions under the North American Agreement on Labor Cooperation (NAALC)." US Department of Labor. <https://www.dol.gov/agencies/ilab/submissions-under-north-american-agreement-labor-cooperation-naalc>; Caulfield, Norman. 2010. *NAFTA and Labor in North America*. N.p.: University of Illinois Press; Compa, Lance, and Tequila Brooks. 2019. *NAFTA and NAALC: Twenty-Five Years of North American Trade - Labour Linkage*. N.p.: Wolters Kluwer; Solomon, Joel. 2001. "Mexico: Trading Away Rights - The Unfulfilled Promise of NAFTA's Labor Side Agreement." Human Rights Watch. https://www.justice.gov/sites/default/files/eoir/legacy/2013/06/14/mexico_0401.pdf; Williams, Heather L. 2003. "Of Labor Tragedy and Legal Farce: The Han Young Factory Struggle in Tijuana, Mexico." *Social Science History* 27 (4): 525-50. <https://www.jstor.org/stable/40267825>.

Based on the findings in the chart, all seven of the NAO submissions had at least one criteria area in which there was a positive outcome. For six of those submissions, the transparency criteria was the singular positive outcome. Only one submission, U.S. NAO Submission 2000-01 (Auto Trim), produced considerably positive outcomes across all criteria.

All of the NAO submissions were resolved in accordance with the NAALC's goal to promote cooperative consultations as well as promote transparency of labor law administration and enforcement. For the most part, the recommended ministerial consultations resulted in bilateral or trilateral discussions between domestic labor institution leaders, with a few discussions culminating into public forums that aimed to educate workers on existing OSH regulations, thus improving the transparency criteria. In two of seven submissions, ministerial consultations were not recorded to ever take place despite the recommendation to do so. However, because those two reports were made public and directly cited that the Mexican government either failed to enforce its laws or fulfill its obligations, the transparency criteria is still considered fulfilled. However, beyond the transparency factor, six of the seven submissions show no evidence of remedy and have not seemed to produce any other positive outcomes in other criteria besides transparency.

Neither of the described submissions, or any submission for that matter, have resulted in direct fines, sanctions, or been brought before an ECE or a dispute resolution panel for additional remedy (Brower 2008). The only instance in which the ECE was seriously considered was in the U.S. NAO Submission 2000-01 (Auto Trim), where the independent investigations found egregious violations of worker health and safety laws that could not be fully ignored by any party involved. The egregious nature of the OSH violations led to the mobilization of experts and detailed investigative work surrounding the OSH issue at hand. Each party, specifically the United States Department of Labor, was faced with growing pressure by the MHSSN to initiate an ECE and to directly sanction the owners of Auto Trim. But even so, the submission never went before an ECE due to various political barriers in the U.S and Mexico's ministerial consultation process (Compa and Brooks 2019). Additionally, there are no recorded instances of

the NAALC or the Mexican government ordering compensation or any remediation for the OSH violations brought before the NAALC.

With these findings in mind, it seems that the publicity surrounding the NAALC proceedings have, to some extent, seemed to legitimize workers' claims of OSH violations by providing a tri-national platform to address grievances on a more visible, formalized basis (Brower 2008). In doing so, the NAALC may have achieved, to some extent, its goal of creating greater transparency of labor law administrations and positive outcomes in workplace safety. NAO proceedings have ultimately contributed to greater awareness surrounding OSH issues and broader government government regulations, as well as contributed to "cross-border solidarity and joint activities between workers, unions, women's groups, environmentalists and occupational health professionals" (Brower 2008). In one case in particular, U.S. NAO Submission 2000-01 (Auto Trim), its improvements across all criteria can be attributed to the "sunshine effect" – the increased awareness surrounding OSH violations after exposure by a perceived legitimate investigative body. The "sunshine effect" contributed to a cascade of mobilization that have led workers to organize and protest egregious violations of OSH regulation, specifically the workers at the Kukdong Factory. However, this mobilization was not limited to the Kukdong workers. The aforementioned conditions of the NAALC as a framework relying on a reputational model of compliance seems to directly produce such outcomes. The reputational sanctions to the Mexican government and the involved employers created conditions wherein workers were empowered to rectify OSH regulation issues on a local, community basis – even without bringing forth their grievances to the NAALC or federal body for direct sanctioning. In other words, the transparency of these proceedings could have catalyzed stronger

labor organization that then inadvertently improved working conditions across all of Mexico – as evidenced by the rapid decline in occupational illness and injuries within the same time period.

However, these correlations are not entirely clear and could be spurious in nature.

Mexico also reported an increase in the underreporting of occupational injuries from 26.3% to 77.9% in the same period – creating greater discrepancies as to the true impact of regulation and the NAALC’s proceedings (Moreno-Torres and Ventura-Alfaro 2018). Further, given that the Mexican government expanded OSH regulation within the same period, it is also unclear where the reduction impact originates. As mentioned previously, the most reliable reporting mechanism for OSH incidences remains to be the IMSS which covers only 40% of the working population and leaves many workers unrepresented in the final data, resulting in a fragmented representation of aggregate OSH incidences (Sánchez-Román et al. 2006). Given the publicity factor, it can also be reasonable to assume that it could have had unintended consequences wherein employees could have been discouraged to report accidents or illnesses in fear of intimidation or harassment. Therefore, it is unclear if the publicity surrounding NAALC disputes produced a significant impact on the regulation of the OSH SDOH.

Based on the data of the NAO submissions, it is reasonable to conclude that the NAALC did not fulfill its goals of improving working conditions or promoting compliance and enforcement of OSH labor law. It is clear that the NAALC did not fulfill these goals neither on a reputational compliance basis or the catalyzation of direct sanctioning. It is unclear as to why an ECE or sanctions have never been utilized in instances where compliance and enforcement were clearly disregarded. The reputational compliance model, however, can perhaps indicate that the ECE’s nature of independent review of *every* NAFTA party disincentives parties to engage, as the parties may be forced to reckon with their own culpability and failures on a tri-national and

international stage (Brower 2008). Further, the lack of direct enforcement and/or creation of regulation under this multilateral framework seems to not provide enough of an incentive to expand enforcement of labor law on a reputational basis alone.

More importantly, as accounted for in the goals of any NAFTA side agreement, the NAALC is deliberate in its design to where it is a designated agreement to reduce or eliminate trade sanctions on the basis of violations of worker's rights. Despite a built in review and direct sanction system in place, the party countries seem to have no incentive to pursue an ECE or arbitration panel as direct sanctions will inevitably distort free trade and create barriers. It is almost impossible that none of the parties have been culpable in labor law violations and/or a lack of enforcement, hence regular direct sanctioning – even in egregious instances – could consistently harm the overarching trade relationship. Therefore, it is reasonable to suggest that the economic interconnectedness brought forth by NAFTA creates conditions wherein the remediation of OSH violations – and labor law violations writ large – do not constitute enough of an incentive to damage the trade relationship, even with independent side agreements that are designed to do so. Hence, it can be argued that such provisions erode the regulatory capacity of trading partners and inhibit the regulation of the OSH SDOH on a reputational compliance basis.

In conclusion, the reputational compliance model of the NAALC's NAO Submission system was effective in the creation of transparency and cooperation between states. This transparency and cooperation indirectly contributed to the improvement of working conditions, compliance, and enforcement of OSH labor law through the sunshine effect. This effect led to workers mobilizing, demanding, and advocating for better treatment, compliance, and enforcement. Such trends could be evidenced by the decline of overall occupational illnesses and injuries, however the underreporting prevalence puts that evidence into question and leads one to

believe that the transparency arising out of the NAALC proceedings may have inadvertently incentivized underreporting. Beyond the improvements in transparency, the reputational compliance model of this submission system was virtually ineffective on all accounts. Neither of the submissions, no matter how egregious, resulted in direct sanctions or remediation and/or compensation for the affected workers. Although the reputational sanctions made some strides in current and future working conditions, they have done close to nothing in remediating victims or improving working conditions for workers involved in the submissions. In one case, U.S. NAO Submission 9702 (Han Young), workers were outright fired after the proceedings. Overall, it seems that this neoliberal reputational compliance model of the NAALC did not provide enough incentives to protect the health of workers. Hence, the side agreement may have eroded the regulatory capacity of trading partners and inhibited the regulation of the OSH SDOH.

Environmental Health Regulation

During this ten year time period of NAFTA, the state of the environment in Mexico was abysmal. The impacts of NAFTA's provisions spread across Mexico, but were highly concentrated in the border regions and industrial centers. Water pollution was among the most serious pollution problems as only 10% of the municipal waste-water was treated (Harrington 1998). The amount of Total Suspended Solids (TSS) in water – a measure of industrial water pollution – increased by 138 million pounds (Sierra Club 2014). Within the border regions, the explosion of Maquiladoras exacerbated existing issues with waste disposal and sewage, resulting in a Hepatitis A infection rate double that of the national average (Sierra Club n.d.). This growth in Maquiladoras also exacerbated water shortages in the region (Sierra Club 2014). Additionally, Mexico's air pollution was a significant problem and was especially problematic within Mexico City and border cities with high traffic and vehicle activity (Harrington 1998). Cross-border

truck activity expanded during this period and contributed to the increase in air pollution in the border region (Sierra Club 2014). Industrial air pollutants such as Sulfur Dioxide and Carbon Monoxide emissions also substantially increased by 66 and 39 million pounds, respectively (Sierra Club 2014). Overall, Mexican greenhouse gas emissions increased by 37% by 2005 (Sierra Club 2014). In border cities such as Ciudad Juarez, 36,000 children were hospitalized due to air pollution related breathing problems between 1997 and 2001 (Sierra Club n.d.). Air pollution was also cited as one of the largest contributors to the death of children under the age of 5 (Sierra Club n.d.). On an economic basis, annual pollution damages amounted to \$36 billion in costs annually (Sierra Club n.d.).

Additionally, only 70% of municipal waste was collected during this period, with a small fraction of it being properly transported, disposed of in sanitary landfills, or recycled (Harrington 1998). Toxic waste pollution also more than doubled during this period (Sierra Club 2014). Of the 8 million metric tonnes of hazardous waste produced in Mexico annually, the majority of the waste was not properly disposed of and ended up being illegally dumped in bodies of water and municipal sewer systems (Harrington 1998). The maquiladora industry (specifically chemical, metal, and machinery) was the largest producer of hazardous waste, but became more monitored by the U.S.-Mexico Hazardous Waste Tracking System (Haztracks) upon the enactment of NAFTA (Harrington 1998). However, even with Haztracks, only 12% of this waste received adequate treatment and only 30% was returned to the country of origin (Sierra Club n.d.). Environmental impact assessments (EIAs) also decreased by 45% after 1993 and maquila inspections also saw a decrease of 37% (Sierra Club n.d.). Overall, NAFTA related environmental damages accounted for \$47 billion in costs in the year 1999 alone, while environmental protection spending fell by half between 1994 and 1999 (Sierra Club n.d.).

With these damages in mind, the outcomes of the CEC submissions and the Chapter 11 case will provide insight into the regulation of these pollution and environmental degradation outcomes during the period of NAFTA. As mentioned in methods, these cases will be assessed on the basis of enforcement, compliance, and environmental protection where human health and/or the public interest is directly impacted.

Table 2: CEC Submissions on Enforcement Matters and Outcomes

Submission	Date	Description	Outcome
Cozumel SEM-96-001	1996	The submitters alleged that the Mexican authorities failed to enforce environmental laws and assess environmental impacts in the evaluation of the project for the Construction and Operation of a Public Harbor Terminal for Tourist Cruises on the Island of Cozumel, State of Quintana Roo. The Mexican government alleged that the submitters failed to provide enough evidence and did not exhaust other available channels.	A final factual report was issued in 1997; the factual report denoted that the firm inadequately responded to scaling back environmental impacts and communication between the company and authorities were inadequate. In response, the Mexican government required the firm to scale back and subsequently expanded protection of the ecological zone (Aspinwall 2013).
Rio Magdalena SEM-97-002	1997	Municipal authorities were allowing wastewater to flow into untreated water supplies used for drinking and irrigation. The Mexican government alleged that the parties failed to exhaust all legal remedies and that the issue was not ignored by the government.	A factual report was issued in 2003; the Mexican government was mobilized to take action on water pollution and irrigation issues and produced a swift response (Aspinwall 2013).
Metalclad Case – Chapter 11	1997	A U.S. waste management corporation, challenged the decision of Guadalcazar, a Mexican municipality, not to grant a construction permit for a toxic waste facility unless the firm cleaned up existing toxic waste problems. The permit had been denied and conditions set for the Mexican firm from which Metalclad acquired the facility (Harbine 2002).	The NAFTA tribunal awarded Metalclad \$16.2 million in compensation, stating that the Mexican government engaged in indirect expropriation and thus violated Mexico’s obligations to NAFTA’s Chapter 11 provisions. The compensation was challenged in the Mexican court system and was ultimately never paid out as the Mexican Supreme Court found it unconstitutional to do so (Harbine 2002).

Metales y Derivados SEM-98-007	1998	Metales y Derivados was shut down in 1994 due to its failure to comply with toxic waste disposal of refined lead and phosphorized copper granules; the submitters claimed that the Mexican government failed to enforce environmental laws by not initiating the clean up left behind by Metales y Derivados.	A factual report was produced in 2002; the report revealed soil contamination that posed long term health risks and implied that the Mexican government poorly enforced this issue and did not restore the site. The Mexican government did not issue a cleanup effort and most of the clean up was initiated by the local community (Environmental Health Coalition 2011).
Aquanova SEM-98-006	1998	Environmental damage was caused by a shrimp farm in Nayarit; Profepa did 13 site inspections of the area. The submitters claimed that the government did not do enough to enforce environmental law. The company was fined twice for failing to meet the environmental impact assessment, changing land use without permission, and destroying flora, fauna, and important ecological systems in the area (Aspinwall 2013).	A factual report was issued in 2003; the Mexican government acknowledged the environmental issues and issues with the company's compliance, and Profepa's enforcement actions (Aspinwall 2013). The Mexican government ultimately stated that nothing could be done since the company's permits were approved before the 1996 reform to LGEEPA (Aspinwall 2013).
Molymex II SEM-00-005	2000	The submitters filed a complaint against Molymex for contaminating the local area and emitting harmful sulfur dioxide emissions that pose risk to human health and cause acid rain. The submitters alleged that the Mexican government failed to conduct an environmental impact assessment, with the government alleging that it was not required as operations of the firm began before EIAs were required.	A factual report was issued in 2004; the report outlined that the law was ambiguous in its interpretation for retroactive application of EIAs and requires the government to do so in the matter of public interest. The report also questioned the granting of the land use permit and was unable to ascertain information about the emissions, but reported that the emissions may have exceeded safety laws even if it did not exceed limits set by SEMARNAT. No evidence of the Mexican government rectifying the situation.
Tarahumara SEM-00-006	2000	The submitters alleged that the Mexican government failed to enforce environmental laws by denying environmental justice to indigenous groups in Chihuahua with respect to logging activities in forests in Sierra Tarahumara. The government alleged that Profepa	A final factual report was issued in 2006; the report mentioned there are gaps in enforcement due to a lack of resources for Profepa, a language barrier between the indigenous communities and enforcement agencies, and geographical barriers. The report

		conducted enforcement activities, issued fines, reported crimes to prosecutors, and conducted meetings with indigenous groups in the area to address the status of their complaints.	also found that Profepa attempted to enforce the situation and address complaints. In response to the factual report, the Mexican government raised the salaries of Profepa inspectors (Aspinwall 2013).
Alca-iztapalapa II SEM-03-004	2003	The submitters alleged a failure of enforcement of Mexican environmental law with respect to a citizen complaint to Profepa that alleged the harm of solvent emissions from a manufacturing plant producing footwear materials. The Mexican government alleged that the original citizen submission was lost in a flood and that subsequent complaints were addressed and the company was fined.	A final factual report was issued in 2008; the report denoted enforcement actions by Profepa and corresponding authorities within criminal proceedings, but suggested that there was lax enforcement (Aspinwall 2013).
Lake Chapala II SEM-03-003	2003	The submitters alleged that the Mexican government failed to uphold environmental laws; with regard to the Lerma-Chapala-Santiago-Pacifico Basin, arguing that such has resulted in environmental deterioration and uneven distribution of water. The submitters also alleged that Mexico inadequately allowed civic participation in environmental policy. Mexico alleged that the submission should be disregarded due to the confidential nature of the projects in question and Mexico's actions constituted sufficient compliance and allowed for civic participation through multiple forums.	A final factual report was issued in 2013; the report summarizes the dispute and does not establish conclusions about the causes of Lake Chapala's condition and suggests natural deterioration as an alternative cause as opposed to impacts from waste water effluents.
Environmental Pollution in Hermosillo II SEM-05-003	2005	The submitters allege that Mexico failed to enforce environmental laws by failing to prevent air pollution, establish and keep up to date a national air quality information system, and devise plans for siting polluting industrial sites. Mexico, in response, alleged that the case should be dismissed as it does not meet the requirements for submission, that adequate pollution monitoring systems do exist and are adequate, that air pollution is	A final factual report was issued in 2014; the report outlined the conditions of the air pollution and unpaved road conditions. The report did cite local programs in place to mitigate pollution from unpaved roads. No evidence that anything was done beyond that.

		primarily caused by unpaved roads in the area, and that the municipality of Hermosillo has relevant mechanisms for complaints and enforcement.	
--	--	--	--

Table 2: CEC Submissions on Enforcement Matters. Source: Commission for Environmental Cooperation. 2021. “Submissions on Enforcement Matters (SEM)- CEC.” Commission for Environmental Cooperation. <http://www.cec.org/submissions-on-enforcement/>; Aspinwall, Mark. 2013. *Side Effects: Mexican Governance Under NAFTA’s Labor and Environmental Agreements*. N.p.: Stanford University Press; Environmental Health Coalition. 2011. “Metales y Derivados Toxic Site.” Environmental Health Coalition. <https://www.environmentalhealth.org/index.php/en/what-we-do/border-environmental-justice/metales-y-derivados-toxic-site>; Harbine, Jenny. 2002. “NAFTA Chapter 11 Arbitration: Deciding the Price of Free Trade.” Berkeley Law. <https://lawcat.berkeley.edu/record/1118269/files/fulltext.pdf>.

As evidenced by the submissions in the chart, the CEC submissions outcomes produced varying results. Seven of the ten cases did not initiate any action of enforcement or compliance beyond the presentation of a factual report or evidence of environmental deterioration. Four of those reports either provided greater transparency through the presentation of evidence or created awareness of existing efforts of enforcement and/or compliance. One of those six, Molymex II, had no solid outcome and maintained the discretion of the Mexican government’s enforcement of EIAs. Two of those six submissions only produced negative outcomes. The first one, the Metalclad Chapter 11 case, did not rectify the toxic waste disposal issue, but also went as far as rewarding compensation to the perpetrators. The second case, Lake Chapala II, took ten years of investigation for the CEC not to establish any conclusions about the causes of the lake’s deteriorating condition. On the other hand, three of the ten cases resulted in a positive outcome for the environment and public health. In each of those cases, the Mexican government took direct action in remedying the situation, sometimes initiating the reversal of their position and acting accordingly – as they did in Cozumel and Rio Magdalena. In the other positive outcome case, Tarahumara, the Mexican government responded to Profepa’s gaps in enforcement and lack of resources by directly raising investment in their salaries and acknowledged connection gaps between Profepa and indigenous communities. Another interesting finding is that earlier submissions had much smaller gaps in time between the submission and issuance of a factual

report, with some of the later submissions – such as Lake Chapala and Hermosillo – taking close to or over a decade for a factual report to be issued.

Overall, the findings suggest that there are many consistency issues with regard to the efficacy of the NAAEC's reputational compliance model. The majority of the submissions did not bring forth effective enforcement or compliance, despite clear evidence of non-enforcement and environmental deterioration. In conjunction with the abysmal environmental impacts of NAFTA, it stands to reason that the side agreement did not produce any meaningful enforcement of environmental law nor did it help effectively mitigate the environmental harms brought on by NAFTA. Given that the NAAEC does not create regulation or precedent, the efficacy of the CEC submissions are ultimately bound to the confines of existing provisions of and enforcement clauses of environmental law. Such is evidenced by the reports that found evidence of some enforcement or recognized technicalities that precluded the government from acting (i.e. Aquanova, Molymex II, Metales y Derivados, and Alca-iztapalapa). As a result, reputational sanctions did not constitute enough of a driver for the government to make corrections in the better enforcement of environmental law. Notably, even with serious reputational sanctions, as evidenced by Metales y Derivados, no meaningful action was undertaken until local community and government actors mobilized efforts and initiated the clean up efforts on their own merits. Even with the positive outcomes in mind, it is ultimately unclear why different outcomes ensued and why the Mexican government chose its courses of action.

Further, the increasing time gaps in the issuance of factual reports also indicates the possibility of the dilution of efficacy and compliance. While these lengthy investigations occur, more devastating environmental health impacts could have occurred in the meantime. However, these gaps could also suggest that more time is being devoted to better evidence gathering. It is

ultimately unclear as to why some reports took less time to be issued than others and what the reason for timing is. It is also difficult to ascertain the motivations and the accuracy of these reports as the proceedings implement a great deal of confidentiality with the public only having access to the final factual report. Such submissions also involve significant involvement from the NAFTA signatories with the Secretariat taking party comments into consideration in the reports, especially in the later submissions. Such also puts into question the merits of the factual reports and the function of the NAAEC as an independent investigative body.

In congruence with the CEC submissions, the Metalclad Chapter 11 ISDS case demonstrated an instance wherein the provisions of NAFTA can directly impede on environmental regulations. The outcomes of the Metalclad case suggest that mechanisms with clear protections for foreign investor interests in particular regulation issues can have negative impacts on an FTA signatory's ability to uphold environmental regulation. However, given that this was the only Chapter 11 dispute that pertained to an environmental regulation and where a domestic institution was able to supersede the obligations of the FTA, there is not enough evidence to fully establish Chapter 11 as an impediment to effective environmental regulation.

In summary, although the NAAEC produced some positive outcomes in the enforcement and compliance with environmental law where human health and/or the public interest is concerned, it was ineffective due to its consistency issues. There are also concerns about the lack of transparency surrounding the proceedings as well as the heavy involvement of NAFTA signatories in the drafting of the reports. The majority of the factual reports amounted to very little action besides the clear presentation of evidence, with some such as the Metalclad case causing more harm than good. These patterns suggest an enforcement and compliance consistency issue, especially as the length of time for report issuance lengthened. It is ultimately

unclear as to why there are consistency issues. However, in cases where there was a favorable outcome, the response was incredibly effective and produced meaningful, swift action from the Mexican government. Perpetrators were reasonably sanctioned and Mexico took greater initiative in upholding its regulations and initiating environmental protection actions. Outside of the Mexican government's actions, the Metales y Derivados case also helped legitimize the concerns of the community and mobilized a cleanup effort within a local setting.

But, the greatest takeaway is that the NAAEC is ultimately ineffective because the environmental laws themselves are virtually ineffective and widely unenforced, especially within border regions. The outcomes of NAFTA's environmental impacts cannot be fully attributed to the inefficacy of the NAAEC and is more indicative of a broader systemic issue in environmental regulation. However, the reputational compliance model of the CEC Submissions process ultimately creates conditions wherein reputational sanctions do not provide adequate incentive for the consistent enforcement of and compliance with environmental law. Yet, it's also important to acknowledge the agreement's potential. The positive outcomes arising from the NAAEC suggest that there is potential for the reputational compliance model to enhance the regulation of the environmental regulation SDOH, but it is mostly ineffective without strong sanctioning mechanisms and norms for effective enforcement.

Agricultural Commerce

The Impact of NAFTA's Agricultural Chapter: Food Security

Most of the aggregate food supply gradually increased or remained fairly stable under NAFTA, with the exception of cereals. The largest growth in the food supply is attributed to animal products. In 1992, the supply stood at 486 kCal/per capita/per day and grew to 605

kCal/per capita/per day by 2005 (insert figure 10). In contrast, the supply of cereals decreased from 1398 kCal/per capita/per day in 1992 to 1335 kCal/per capita/per day in 2005 (insert figure 10). Such changes are indicative of changing consumption habits with greater emphasis on meat consumption and lower reliance on cereals. Cereals, animal products, and sugars and sweeteners make up the larger portions of the food supply (insert figure 10). However, cereals remain the most abundant agricultural products within the food supply (insert figure 10). An abundance of cereals gives way for a stable supply of food that is less likely to experience shocks and last much longer in storage (Food and Agriculture Organization of the United Nations 2021).

While the aggregate level of food appears high, it is important to examine aspects of access and distribution to fully capture the impacts of NAFTA on food security in Mexico. Coupled with domestic deregulation and NAFTA's elimination of barriers for trade, the Mexican cultural staple trade balance became incredibly import heavy (insert figure 11). From the period between 1994 and 2005, Mexico experienced a rapid influx of imported maize, sorghum, wheat, and soybeans, yet exported far less of the same products. The exports of such products did not match the influx of that of the imports, indicating that much of the staples produced domestically were produced for domestic consumption. This also indicates that Mexican staples may not have been generating profits for export producers or shifting production incentives in a manner that was beneficial to the producers. It was believed that Mexico would retain a comparative advantage – especially with maize – as 60% of its cultivated land was dedicated to corn production (Ogle 2009). This comparative advantage was also assumed due to Mexico's larger agricultural market, better climate and lower production costs (Ogle 2009). Products such as maize were originally scheduled to undergo a 15-year liberalization transition period to account for the changes in the market, yet the Mexican government's false assumptions of comparative

advantage led them to disregard import quotas and prematurely push maize into the open regional market within a 30 month period (Ogle 2009). With a lack of domestic subsidy programs, guaranteed ownership of communal land through ejido, and other price support mechanisms, local producers – especially of maize and beans – had to compete with the heavily subsidized economies of scale of U.S. and Canadian imports and eventually succumbed to the comparative advantage of those imports (White, Salas, and Gammage 2003).

These trends are further corroborated by the data in figure 12 where there is a general trend of falling domestic producer prices, with gradual reductions from 1992 to 2005. In relation to the prices before NAFTA, there was a substantial drop in price post its enactment. Most notably, the price of beans significantly dropped from \$732 per tonne in 1992 to as low as \$341 per tonne in 1995 (insert figure 12). Producer prices for beans never fully recovered and stood at \$633 per tonne (insert figure 12). The prices for other staples remained fairly stable post-NAFTA, but exhibited an overall decrease from 1992 (insert figure 12). The stability of prices may be attributable to the TRQ transitory period, given that some of these products were not fully liberalized until 2008. It is also unclear to what extent the 1995 peso devaluation crisis contributed to the reduction of these producer prices. However, given that the U.S. was exporting such staples below cost, it is a safe assumption that these reductions in prices are more attributable to the influx of heavily subsidized imports.

Either way, such price reductions had a considerable impact as small-scale and subsistence farmers suffered immense wage losses and displacement from agricultural production all together. At the onset of the negotiation of NAFTA, 40% of all Mexican agricultural workers – 3 million producers – were cultivating maize (White, Salas, and Gammage 2003). After NAFTA, the same workers experienced a significant depression in wages and made

only 33% of their original earnings before NAFTA, resulting in the Mexican production of maize and grains falling by half between 1991 and 2003 (White, Salas, and Gammage 2003). As discussed in the employment section, such substantial reductions in wages crowded out subsistence and small scale producers, forcing 1.7 million people to abandon farming and engage in informal sector work (Public Citizen 2018). These agricultural job losses also prompted migration out of rural areas and many relocated to urban areas of Mexico or migrated North to the United States (Olson 2008). In contrast, producers of non-traditional exports such as fruits and vegetables engaged in greater export production and resulted in an increase of more than 300,000 jobs and gave Mexico comparative advantage in fresh produce production (insert figure 5) (White, Salas, and Gammage 2003). In summary, at the macro level, domestic production of staple crops fell as did producer prices due to the influx of cheap imports. Agricultural wages decreased and forced a reallocation of workers to informal and industrialized sectors, with mixed impacts on income.

As discussed in the employment section, the proliferation of informal employment disproportionately affected women, but provided outlets to supplement income to rural producers. Yet, even with the extra income, many households faced insecurity with expenditure on food decreasing to cover the increasing costs of housing, utilities, education, and transportation (White, Salas, and Gammage 2003). Household budget expenditure percentages on food overall decreased, which indicates a switch to cheaper, less nutritionally sound food and/or producing for subsistence consumption (White, Salas, and Gammage 2003) as well as broader issues with food security. With those that continued to farm – primarily that of subsistence producers – surplus corn products had to be sold, resulting in many households experiencing malnutrition and food insecurity on a consistent basis (White, Salas, and Gammage

2003). Such trends of food insecurity also spread to urban markets as the elimination of corn tortilla subsidies resulted in a 279% increase in the price of corn tortillas during the 1994-2005 period, with even more substantial increases in rural markets (Public Citizen 2018). Between 1994 and 2000 alone, the increase in price was as much as 571% (Olson 2008). As a staple food product, such price increases severely diminished the access to the most basic foods and the benefits of reduced corn prices were ultimately not passed on to the consumer.

The Impact of NAFTA's Agricultural Chapter: Food Sovereignty

The impacts of NAFTA on the production and consumption of corn and its derivatives such as tortillas provide considerable insight into food sovereignty as well as security due to corn's cultural significance. Corn was never culturally viewed as a commodity, but rather as a basic staple that is used as food, art, and ceremonial decor in religious ceremonies (White, Salas, and Gammage 2003). In many indigenous and rural peasant communities, maize was seen as the source of humankind and has been cultivated for 4,000 years prior to its commodification (White, Salas, and Gammage 2003). Its importance extends into a unified recognition of corn as a moniker of stability in the food supply and community income (Santini 2006). Prior to NAFTA, indigenous and rural communities retained a great degree of food sovereignty as the production and distribution of maize was highly localized. More than a third of the corn produced by said communities was reserved for self consumption, with the rest sold in local markets (Santini 2006). The cultivation of thousands of varieties as well as 40 distinct racial complexes of corn (White, Salas, and Gammage 2003) have provided a greater deal of security and sovereignty over the supply as such cultivations were less vulnerable to exogenous shocks compared to imported monocultures (Rosenzweig 2021). Beyond the local food sovereignty, broader sovereignty over corn production and consumption was also retained in corn derivatives

such as corn tortillas due to CONASUPO's heavy subsidization of their production and consumption. In combination with the privatization of maize, removal of subsidies, changes in the trade balance and change in producer prices, the NAFTA agricultural chapter seemed to have had considerable implications for the control of the production and distribution of maize and staple products writ large.

Through the privatization of CONASUPO and greater incentivization of neoliberal market reforms brought on by NAFTA, production and distribution of corn and tortillas largely shifted from centuries-old, local production into a large, highly monopolized endeavor wherein three major companies: Cargill, Maiz Industrializado S.A., and Grupo Maseca S.A. retained 49% of the market share of corn tortilla production (Ogle 2009). Such market dynamics contributed to the aforementioned increase in price of corn tortillas as these companies retained the benefits of cheaper corn imports, but had the ability to control prices due to a lack of competition and adequate regulation (Olson 2008). Even with rising prices in the domestic market, monopolies such as Cargill were able to capitalize on the influx of cheap corn imports from the U.S. and stop purchasing domestic crops altogether, while undermining producer prices (Olson 2008). Such price manipulation further perpetuated the aforementioned trends of crowding out of small, domestic producers and shifted the greater control of the production and distribution of corn from local sources to highly monopolized transnational corporations (TNCs). This trend can also be corroborated by instances of investor protection suits in ISDS Chapter 11 cases. For example, in 2003, over a dispute over Mexico's 20% high fructose corn syrup tax, Cargill was able to utilize the ISDS Chapter 11 system to sue the Mexican government and garner an award of \$77.3 million from the Chapter 11 tribunal (Public Citizen 2021). In doing so, Cargill was able to

exercise greater control over price, production, and distribution of corn products from multiple levels.

On a broader basis, Mexico experienced a greater dependency on imports of cereal grains for domestic consumption (White, Salas, and Gammage 2003). Mexico saw an increase in the value of imports as a percentage of national production, beginning with single digit values in the early 1990s and shooting to double digit values post-NAFTA (White, Salas, and Gammage 2003). By 2000, the total figure was over 45.3% (Food and Agriculture Organization of the United Nations 2021). Unfortunately, data beyond the year 2000 for that specific figure was unable to be found. The overall cereal import dependency (on a 3 year average scale) hovered around 35% between 2000 and 2005 (Food and Agriculture Organization of the United Nations 2021). Unfortunately, data prior to 1999 was not able to be found, but given the import values data, it is safe to assume the cereal import dependency was considerably lower prior to NAFTA. With these rises in corn tortilla prices and greater dependence on imports of cereal grains, consumption of staple goods largely shifted to less nutritionally sound substitution goods such as white bread, high-fructose corn syrup products, and other products that began to undermine the health of the population (White, Salas, and Gammage 2003). Overall, the compounding effects of increased poverty produced a cyclical relationship wherein greater instances of poverty resulted in an increasing dependence on food imports (Puyana 2012). Yet, these trends are mostly attributable to lower-income and rural populations that were vulnerable to begin with and who ended up losing 25-30% of their income (Puyana 2012).

Discussion

So, to what extent did NAFTA harm or improve SDOH in Mexico? My original hypothesis posited that NAFTA would have mostly negative implications on SDOH pathways. Under each SDOH linkage I had a few sub-research questions. When assessing employment, I asked: to what extent do different employment outcomes affect the employment SDOH of various workers and their communities? For regulation, I asked: do neoliberal reputational compliance agreements in FTAs enhance or impede upon the regulation SDOH pathway? For agricultural commerce, I asked: does agricultural liberalization enhance or impede the food security and sovereignty SDOH? Based on my research, the overwhelming answer for each of those is: it depends. There were mixed outcomes across the board, with some positive and some negative. However, the negative impacts were highly concentrated within specific communities and groups of people. As for positive outcomes, there were not as many discernible patterns.

Findings from the employment pathway suggest that NAFTA had a mixed impact on income and economic insecurity, depending on the employment sector in question. On aggregate, NAFTA produced some positive impacts with net gains in job creations that could have reduced poverty, inequality, instances of the working poor, and vulnerable employment. Yet, it also did not do enough to improve real wages as they remained stagnant or declined during this period. NAFTA also did not appear to improve poverty, gender parity, inequality, or insecurity in the extensive way it intended. Upon deeper examination, the outcomes were incredibly nuanced in their distribution. NAFTA's impacts on employment SDOH can be primarily isolated into those gains in manufacturing and losses in agriculture. Interestingly enough, the gains and the losses produced very similar results. Despite gains in maquila and disguised maquila employment (i.e. unskilled and skilled work), workers were worse off in 2005 than they were prior to NAFTA.

Wages were reduced, while productivity increased. Women, in particular, saw mixed impacts on income and economic insecurity. For women, the expansion of maquiladoras ushered in new opportunities for formal employment and supplemental opportunities through the informal economy and remittances from migration. However, there were some downsides. Women disproportionately worked longer hours from the double burden in child care and household domestic duties, suffered pregnancy and sex discrimination, a reduction in wages, gender based violence, and overall greater economic insecurity and exploitation because of the aforementioned downsides. Men were also subject to exploitation, but slightly fared better due to their structural power and greater labor force participation; men had greater economic opportunities in the first place and had more flexibility in pursuing different types of employment than women, making them better off aggregately speaking. Nevertheless, they also experienced increased insecurity and exploitation, especially if they were employees in disguised maquilas or in the agricultural sector. The losses in agriculture contributed to the expansion of the informal economy as well as migration trends that both amounted to disproportionate impacts on women and rural communities. Both outlets provided sources for supplemental income to the workers and their communities, but were ultimately still characterized by meager wages and significant economic insecurity. Personal remittances seemed to be one of the only positive impacts from trends in migration as they generated wealth for the communities through increased expenditure and social infrastructure investment. Overall, the increase in manufacturing and losses in agriculture, interestingly produced the same outcomes of income suppression and economic insecurity.

In the findings surrounding the regulation pathway, the reputational compliance models of the NAO submissions and subsequent NAALC proceedings have not seemed to have improved working conditions, the enforcement of, or compliance with OSH regulation from

1994 to 2005. However, they have increased transparency in the administration of labor law. Yet, for the most part, the NAALC left OSH enforcement and compliance unchanged, but did not appear to make the situation worse. Even with the perception of robust regulations in place, it does not seem that NAFTA and its labor side agreement have improved the state of OSH regulation or OSH in Mexico. In some cases, it has marginally improved transparency and from said transparency created indirect effects wherein local actors were empowered to mobilize and bargain for better working conditions (i.e the sunshine effect). However, those same workers that put forth complaints were left with life altering, possibly disabling occupational illnesses and injuries that harmed their well-being, their earning potential, and the well-being of their families and communities. Similarly, the proceedings of the NAAEC produced mixed outcomes, but also did not appear to make a considerable impact on the enforcement of environmental regulation. Any improvements in enforcement or compliance were ultimately offset by the abysmal environmental conditions created by NAFTA – which amounted to billions in environmental damages, the spread of disease through water, inadequate waste disposal, and worse air pollution. Unlike the NAALC, however, such proceedings have ultimately demonstrated that some of the reputational compliance mechanisms can be helpful in initiating effective response. However, it is not entirely clear why there are discrepancies in response between OSH and environmental regulation.

Finally, when looking at the agricultural commerce pathway, the information from the FAO data and the close assessment of qualitative impacts on rural food producers suggests that the NAFTA agricultural chapter had considerably negative implications for the maintenance of food security and sovereignty, but was highly concentrated in communities that lacked and/or lost adequate support from the government prior to NAFTA. These lacks and losses include the

diminishment of price supports, shifts in land ownership, and shift in power in the food system from local producers to TNCs. These effects also spilled over in other SDOH such as employment and regulation, suggesting that pre-existing economic and social factors produce compounding effects in food security when a system goes under radical shifts (i.e. from import substitution and state-based involvement to liberalization). The impact of NAFTA on food security is also incredibly nuanced in that it increased the overall food supply, but did not enhance access or the distribution of food products in a way that is productive to the effective maintenance of adequate access and security. Such factors are also replicated in the assessment of food sovereignty as the findings suggest that the loss of control over the production and distribution of domestic cultural staples may have contributed to a greater erosion of food sovereignty and subsequently a diminishment of health and food security outcomes. Food security and sovereignty also appear to be intrinsically linked within certain communities given that the consequences concentrated around rural, small-scale, subsistent producers.

With such findings in mind, this case study yields supporting information that SDOH impacts cannot be examined in isolation, as they are all interrelated in some capacity and retain both direct and indirect effects on each other. If employment was affected in one aspect, then it inevitably spilled over into regulation and agricultural commerce and vice-versa. The literature, as well as the neoliberal convention, tends to categorize aspects of the SDOH as independent factors that can be isolated and further categorized within direct commercial impacts from trade. Such assumptions also purport that liberalization is the most effective form of development for a struggling semi-periphery nation. Yet, the findings indicate the opposite.

By assessing these principles within a critical political economy framework, the findings reveal that trade liberalization – on its own – was an insufficient tool for the facilitation of

development and improvement of public health and well being of Mexicans. This is evidenced by the fact that the policies of Mexico's liberalized domestic political economy laid the foundations for the perceived disparities, to which NAFTA accelerated the process through its protections of the financial interests of foreign investors and imposition of mostly non-applicable economic principles of the two fully developed signatories on the developing one. NAFTA's perceived symmetry of obligations unintentionally exacerbated existing inequities as it failed to take into account the political and economic power dynamics within the region – particularly with regard to the economic and exporting power of the United States. Not to mention, Mexico implemented protections in place to avoid these problems, but they became moot in what seems to be the service of other interests and/or premature accelerations of liberalization on faulty assumptions of growth as the best improvement of SDOH. Additionally, the findings suggest that certain economic, social, and political path dependencies are highly relevant to SDOH, as groups that were previously marginalized and unsupported by system dynamics suffered the greatest SDOH consequences at the hands of NAFTA. Effectively, the SDOH of low-income earners, women, peasants, indigenous groups, and rural populations were the most negatively impacted by NAFTA, and were further set back in their health and well being. These findings also suggest that the integration of TNCs within local social and economic spaces contributed to the erosion of these SDOH pathways. Due to the explicit prioritization of foreign investors within the FTA, as well as the perceived development imbalance amongst the three signatories, Mexico became incredibly vulnerable to corporate capture that facilitated the proverbial economic race to the bottom, at the expense of the health and well being of the most vulnerable, local population.

Even with the consistency of the findings, the research does have some limitations. For one, there may be some spurious impacts due to economic events outside of liberalization. As

mentioned previously in the employment section, the impacts of trade liberalization may be harder to parse out as the 1994-95 Peso Crisis occurred simultaneously, hence we cannot know for sure to what extent trade liberalization harmed or helped SDOH. Additionally, dynamics outside of liberalization in Mexico, such as liberalization in Southeast Asian countries, shifted manufacturing competitive advantage that could have had indirect effects on SDOH. Another limitation is the absence of data. Some data could not be fully accounted for or parsed out due to either a lack of measurement, prevalent underreporting, or varying definitions that distorted the final data. Ultimately, those factors can account for errors in the research.

Despite the study's limitations, these findings and their integration within a critical political economy perspective can have important applications in reforming international and domestic socio-economic policy. The findings provide a perspective that takes into account different, unconventional strategies of development, such as the prioritization of SDOH. Furthermore, the findings also suggest a cautionary tale about the reliance on free trade and economic liberalization as primary instruments for development, especially within a semi-periphery context. These findings also have implications for further research in identifying SDOH as variables of concern within theories of political economy – beyond the traditional, more proximal factors of development and well being. But more importantly, this thesis aims to contribute to a scholarly understanding that the true impact of trade liberalization on SDOH cannot fully be examined in isolation, for each SDOH factor is inextricably linked with the other and is broadly interrelated with the domestic and global political economies.

With that, I propose additional recommendations for further research. This thesis primarily examined the economic side of the global political economy framework, hence a future study could attempt to further question the power dynamics at and post-signing of an agreement

to further account for the political aspects of SDOH. Finally, I recommend a more in-depth exploration of non-Eurocentric modes of health such as community empowerment and food sovereignty so that they are given greater recognition as SDOH pathways within future scholarly discourse.

In conclusion, NAFTA's trade liberalization provisions impacted SDOH to the extent that the domestic and regional political economies allowed. The FTA did not sufficiently improve Mexico's development, but was merely an extension of the liberalized, unequal domestic political economy and an acceleration of the inequality perpetuated by developmental imbalances between the three signatories. Such dynamics ultimately produced mixed outcomes on an aggregate basis, but poor outcomes for specific groups of people. By analyzing these outcomes within the critical political economy framework, we can begin to recognize the symbiotic relationship between various SDOH pathways and the political economy, to where we can formulate a holistic understanding of the world and public policy that improves the overall health and well-being of the world population. From this thesis, we can deduce that historical, social, institutional, political, and economic context matters and that SDOH should be an important variable of concern when evaluating policy strategies for international development.

Appendix

Figure 1: Mexican Exports to the U.S. from 1995-2005

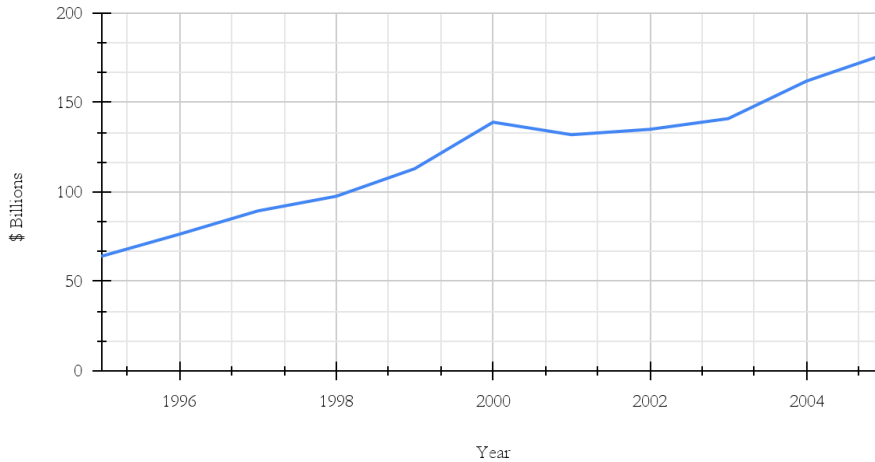


Figure 1: Mexican Exports to the U.S. from 1995-2005. Note: data from 1994 and earlier is missing. Source: Observatory of Economic Complexity. 2022. "Bilateral Trade by Products – Mexico and the United States." OEC. <https://oec.world/en/profile/bilateral-country/mex/partner/usa?depthSelector=HS2Depth&dynamicBilateralTradeSelector=year1997>.

Figure 2: Poverty Rates at 2011 PPP \$

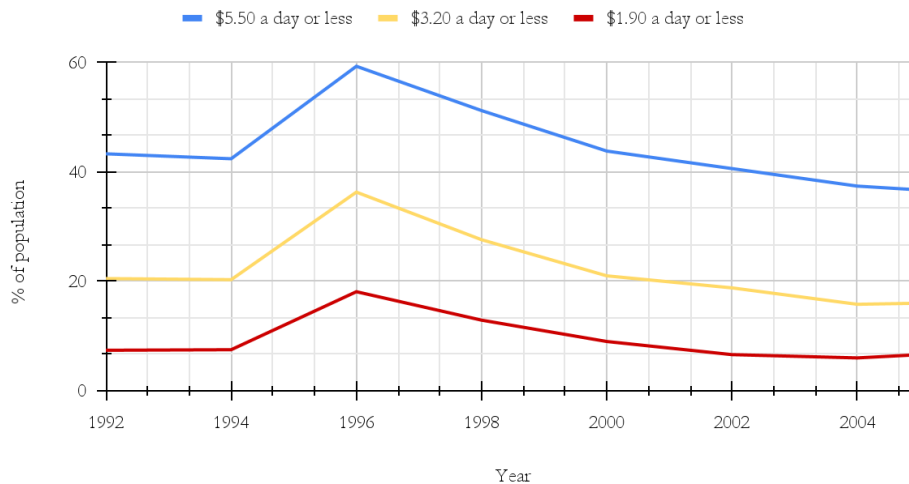


Figure 2: Mexican Poverty Rates at 2011 Purchasing Power Parity (PPP) \$ from 1992-2005. Source: World Bank, and World Bank Group. 1978. World development indicators. Washington, D.C.: World Bank.

Figure 3: Working Poor at PPP \$3.20 a day

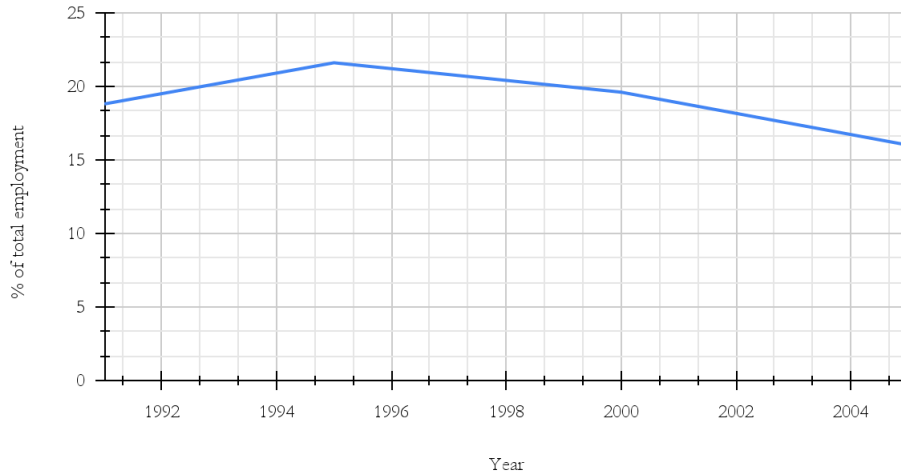


Figure 3: Mexican Working Poor at Purchasing Power Parity (PPP) \$3.20 a day from 1992-2005. Source: World Bank, and World Bank Group. 1978. World development indicators. Washington, D.C.: World Bank.

Figure 4: Wage and Salaried Workers

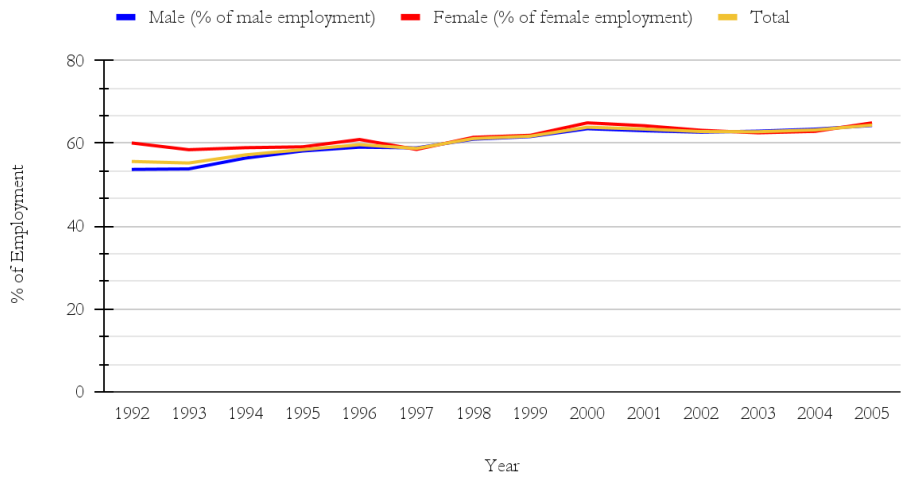


Figure 4: Wage and Salaried Workers as % of Employment from 1992-2005. Source: World Bank, and World Bank Group. 1978. World development indicators. Washington, D.C.: World Bank.

Figure 5: Vulnerable Employment

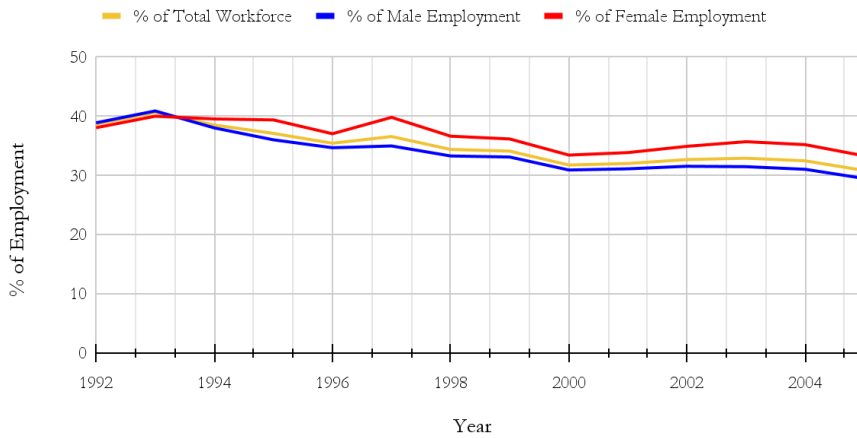


Figure 5: Vulnerable Employment as % of Employment from 1992-2005. Source: World Bank, and World Bank Group. 1978. World development indicators. Washington, D.C.: World Bank.

Figure 6: Labor Force Participation Rate for Men and Women

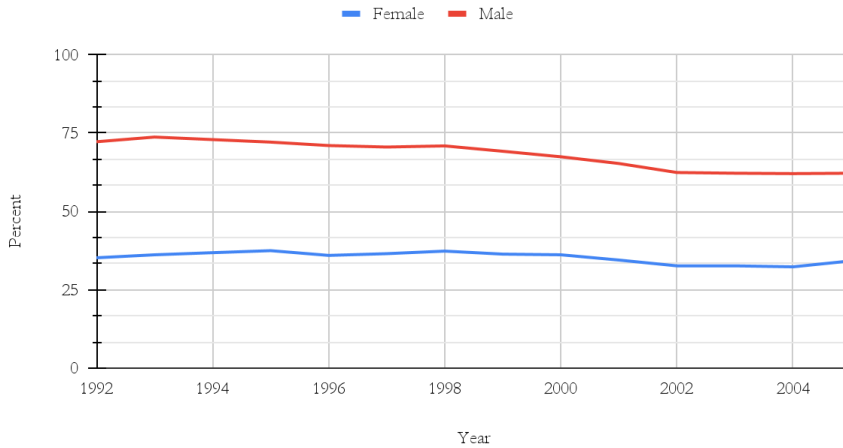


Figure 6: Labor Force Participation Rate for Men and Women from 1992-2005. Source: World Bank, and World Bank Group. 1978. World development indicators. Washington, D.C.: World Bank.

Figure 7: Share of Female Employment in Non-Agriculture

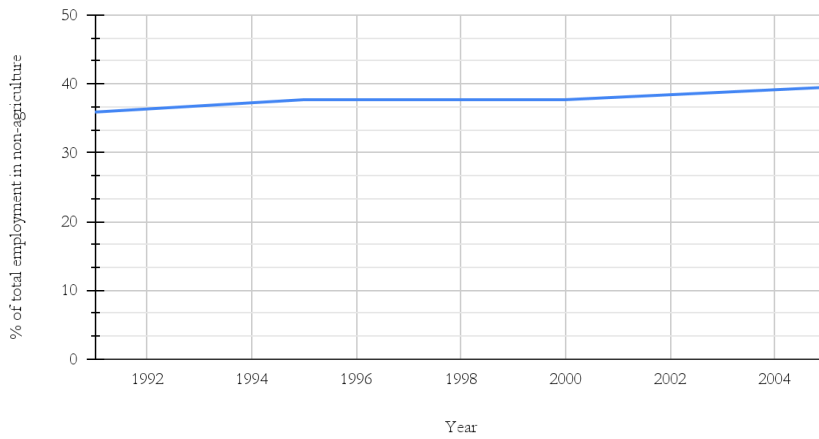


Figure 7: Share of Female Employment in Non-Agriculture as % of Total Employment in Non-Agriculture from 1992-2005. Source: World Bank, and World Bank Group. 1978. World development indicators. Washington, D.C.: World Bank

Figure 8: Personal Remittances Received

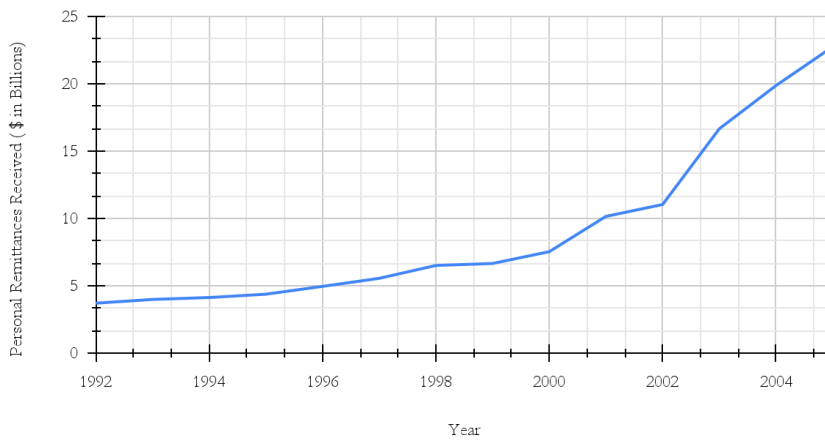


Figure 8: Personal Remittances Received in \$Billions from 1992-2005. Source: World Bank, and World Bank Group. 1978. World development indicators. Washington, D.C.: World Bank.

Figure 9: Reported Occupational Accidents and Diseases from 1994-2004

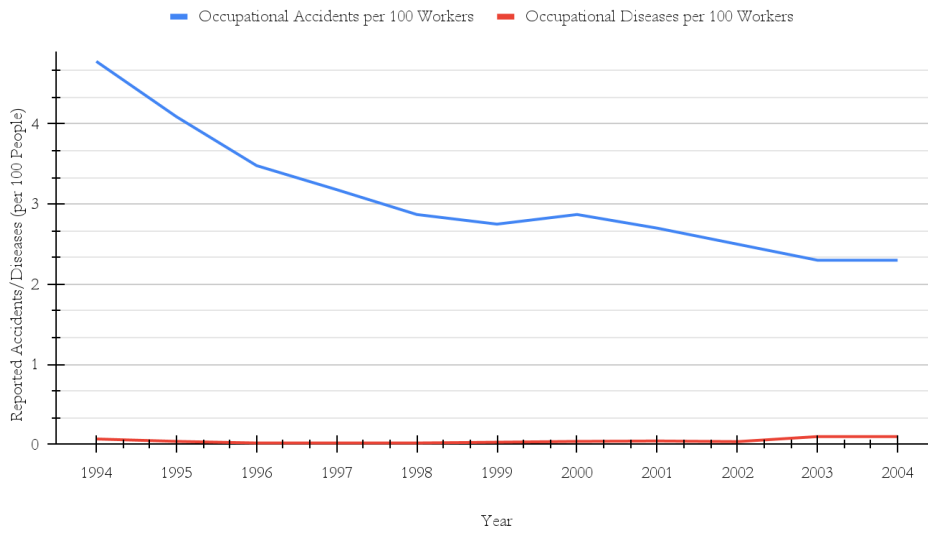


Figure 9: Reported Occupational Accidents and Diseases from 1994-2005. Source: Sánchez-Román, Francisco R., Cuauhtémoc A. Juárez-Pérez, Guadalupe A. Madrid, Luis Haro-García, Víctor H. Borja-Aburto, and Luz Claudio. 2006. "Occupational health in Mexico." *Int J Occup Environ Health* 12 (4): 346-54. 10.1179/oeht.2006.12.4.346.

Figure 10: Mexico's Food Supply

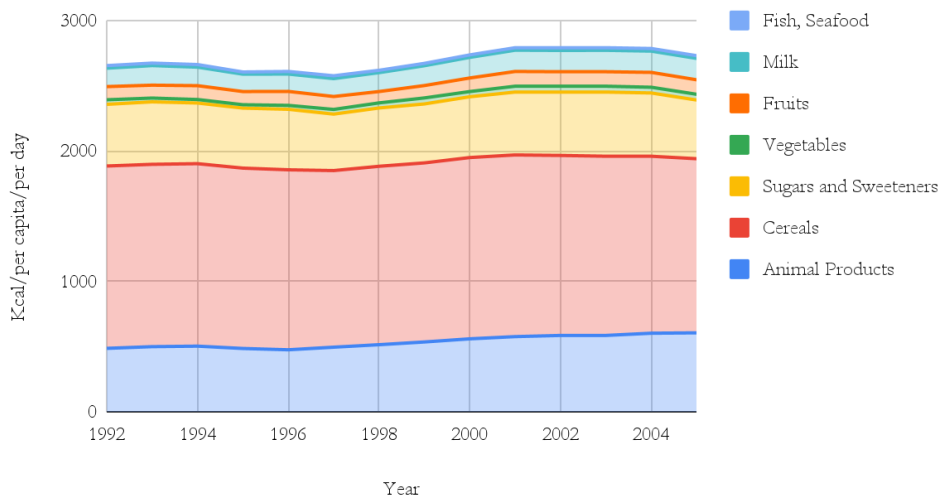


Figure 10: Mexico's Food Supply Measures from 1992-2005. Source: Food and Agriculture Organization of the United Nations. 2021. "FAOSTAT Statistical Database. [Mexico]." FAOSTAT. <https://www.fao.org/faostat/en/#data/FBSH>.

Figure 11: Mexican Cultural Staples Trade Balance

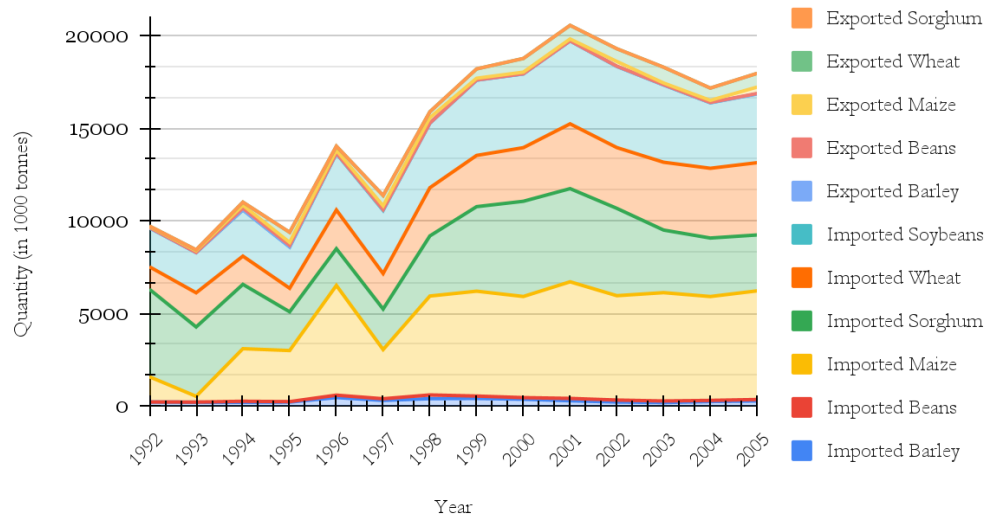


Figure 11: Mexican Cultural Staples Trade Balance from 1992-2005. Source: Food and Agriculture Organization of the United Nations. 2021. “FAOSTAT Statistical Database. [Mexico].” FAOSTAT. <https://www.fao.org/faostat/en/#data/FBSH>.

Figure 12: Producer Prices for Mexican Staples (USD/tonne)

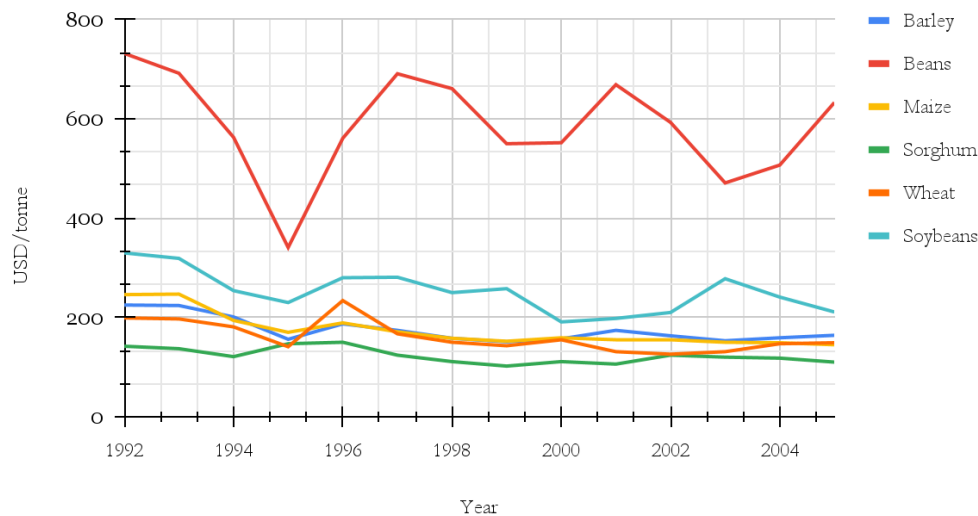


Figure 12: Producer Prices for Mexican Staples (USD/tonne) from 1992-2005. Source: Food and Agriculture Organization of the United Nations. 2021. “FAOSTAT Statistical Database. [Mexico].” FAOSTAT. <https://www.fao.org/faostat/en/#data/FBSH>.

Figure 13: Aggregate Mexican Food Balances: Exports

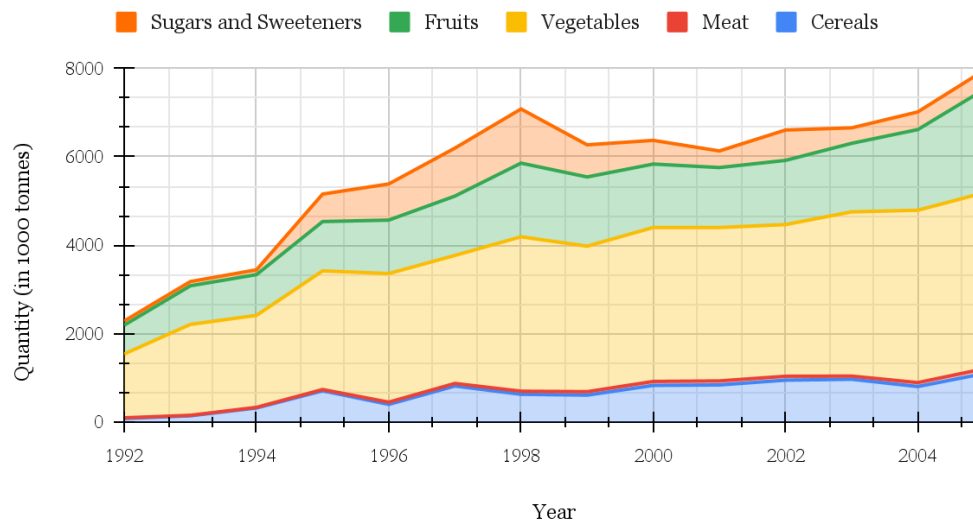


Figure 13: Aggregate Mexican Food Balances: Exports from 1994-2005. Source: Food and Agriculture Organization of the United Nations. 2021. "FAOSTAT Statistical Database. [Mexico]." FAOSTAT. <https://www.fao.org/faostat/en/#data/FBSH>.

Bibliography

- Arriola, Elvia R. 2007. "Accountability for Murder in the Mquiladoras: Linking Corporate Indifference to Gender Violence at the U.S. Mexico Border." *Seattle Journal for Social Justice* 5 (2): 603-28.
- Aspinwall, Mark. 2013. *Side Effects: Mexican Governance Under NAFTA's Labor and Environmental Agreements*. N.p.: Stanford University Press.
- Beghin, John, David Roland-Holst, and Dominique van der Mensbrugge. 1995. "Trade Liberalization and the Environment in the Pacific Basin: Coordinated Approaches to Mexican Trade and Environment Policy." *American Journal of Agricultural Economics* 77, no. 3: 778–85. <https://doi.org/10.2307/1243251>.
- Bloom, David E, and Canning, David. 2007. "Commentary: The Preston Curve 30 Years On: Still Sparking Fires." *International Journal of Epidemiology* 36, no. 3: 498-99.
- Blouin, Chantal, Dr, Chopra, Mickey, PhD, and Van Der Hoeven, Rolph, Prof. 2009. "Trade and Social Determinants of Health." *The Lancet (British Edition)* 373, no. 9662: 502-07.
- Brower, Adam. 2008. "Rethinking NAFTA's NAALC Provision: The Effectiveness of its Dispute Resolution System on the Protection of Mexican Migrant Workers in the United States." *Indiana International & Comparative Law Review* 18 (1): 153-88. <https://journals.iupui.edu/index.php/iiclr/article/view/17568>.
- Bureau of International Labor Affairs. 2015. "Submissions under the North American Agreement on Labor Cooperation (NAALC)." US Department of Labor. <https://www.dol.gov/agencies/ilab/submissions-under-north-american-agreement-labor-cooperation-naalc>.
- Caulfield, Norman. 2010. *NAFTA and Labor in North America*. N.p.: University of Illinois Press.

- Chatzky, Andrew, and Gordon Hanson. 2020. "NAFTA and the USMCA: Weighing the Impact of North American Trade." Council on Foreign Relations.
<https://www.cfr.org/backgrounder/naftas-economic-impact>.
- Chang, Shu-Chen. 2015. "The Effects of Trade Liberalization on Environmental Degradation." *Quality & Quantity* 49, no. 1: 235-53.
- Chuang, Ying-Chih. 2015. "Trade, Environmental Degradation, and Population Health in Low-income Countries." *European Journal of Public Health* 25, no. Suppl_3: European Journal of Public Health, 2015-10, Vol.25 (suppl_3).
- Commission for Environmental Cooperation. 2021. "Submissions on Enforcement Matters (SEM)- CEC." Commission for Environmental Cooperation.
<http://www.cec.org/submissions-on-enforcement/>.
- Compa, Lance, and Tequila Brooks. 2019. *NAFTA and NAALC: Twenty-Five Years of North American Trade - Labour Linkage*. N.p.: Wolters Kluwer.
- Cornia, Giovanni Andrea, Rosignoli, Stefano and Tiberti, Luca. 2007. "WHO Commission on Social Determinants of Health Globalisation and Health: Pathways of Transmission and Evidence of Impact." *Globalization and Health Knowledge Network: Research Papers*.
- De La Calle, Luis. 2017. "The True Relevance of NAFTA." *Americas Quarterly*.
<https://www.americasquarterly.org/fulltextarticle/the-true-relevance-of-nafta/>.
- De Vogli, Roberto, and Birbeck, Gretchen L. 2005. "Potential Impact of Adjustment Policies on Vulnerability of Women and Children to HIV/AIDS in Sub-Saharan Africa." *Journal of Health, Population and Nutrition* 23, no. 2: 105-20.
- Delgado-Wise, Raúl, and Humberto Márquez Covarrubias. 2007. "The Reshaping of Mexican Labor Exports under NAFTA: Paradoxes and Challenges." *International Migration*

Review 41, no. 3 (September): 656–79.

<https://doi.org/10.1111/j.1747-7379.2007.00089.x>.

DHS Office of Immigration Statistics. 2006. “2005 Yearbook of Immigration Statistics.”

Department of Homeland Security.

https://www.dhs.gov/sites/default/files/publications/OIS_2005_Yearbook.pdf.

Doumbia-Henry, Cleopatra and Eric Gravel. 2006. "Free trade agreements and labour rights:

Recent developments." *International Labour Review* 145, no. 3: 185-0_4,

<https://du.idm.oclc.org/login?url=https://www-proquest-com.du.idm.oclc.org/scholarly-journals/free-trade-agreements-labour-rights-recent/docview/223997820/se-2?accountid=14608>.

Environmental Health Coalition. 2011. “Metales y Derivados Toxic Site.” Environmental Health Coalition.

<https://www.environmentalhealth.org/index.php/en/what-we-do/border-environmental-justice/metales-y-derivados-toxic-site>.

Feachem, Richard G A. 2001. "Globalisation Is Good for Your Health, Mostly." *BMJ* 323, no. 7311: 504-8.

Flores, Esteban. 2017. "MISERY IN THE MAQUILADORAS." *Harvard International Review* 38: 10-12,

<https://du.idm.oclc.org/login?url=https://www-proquest-com.du.idm.oclc.org/scholarly-journals/misery-maquiladoras/docview/1906058176/se-2?accountid=14608>.

Food and Agriculture Organization of the United Nations. 2021. “FAOSTAT Statistical Database.

[Mexico].” FAOSTAT. <https://www.fao.org/faostat/en/#data/FBSH>.

- Giles, Mara D. 2006. "An Understanding of the Relationship between Maquiladoras and Women's Rights in Central America." DigitalCommons@University of Nebraska - Lincoln.
<https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1017&context=nebanthro>.
- Grown, Caren. 2005. "Trade Liberalization and Reproductive Health: A Framework for Understanding the Linkages." *Development (Society for International Development)* 48, no. 4: 28-42.
- Gutiérrez-Haces, Teresa, Ray Broomhill, Paul Bowles, and Stephen McBride, eds. 2012. *International Trade and Neoliberal Globalism: Towards Re-peripheralisation in Australia, Canada and Mexico?* N.p.: Taylor & Francis.
- Guzman, Andrew T. 2002. "A Compliance-Based Theory of International Law." *California Law Review* 90, no. 6: 1823–87. <https://doi.org/10.2307/3481436>.
- Harbine, Jenny. 2002. "NAFTA Chapter 11 Arbitration: Deciding the Price of Free Trade." Berkeley Law. <https://lawcat.berkeley.edu/record/1118269/files/fulltext.pdf>.
- Hart, Paul. 2018. "Emiliano Zapata and Revolutionary Mexico, 1910–1919." Latin American History - Oxford University Press.
<https://doi.org/10.1093/acrefore/9780199366439.013.450>.
- Harrington, John. 1998. "Environmental Issues in Mexico Under NAFTA." Institute for Agriculture and Trade Policy.
https://www.iatp.org/sites/default/files/Environmental_Issues_in_Mexico_Under_NAFTA_4.htm.
- Hawkes, Corinna. 2006. "Uneven Dietary Development: Linking the Policies and Processes of

- Globalization with the Nutrition Transition, Obesity and Diet-related Chronic Diseases." *Globalization and Health* 2, no. 1: 4.
- Human Rights Watch. 1996. "No Guarantees: Sex Discrimination in Mexico's Maquiladora Sector." Human Rights Watch. <https://www.hrw.org/legacy/summaries/s.mexico968.html>.
- Huynen, Maud M T E, Martens, Pim, and Hilderink, Henk B M. 2005. "The Health Impacts of Globalization: A Conceptual Framework." *Globalization and Health* 1, no. 1: 14.
- International Labor Organization. 2013. "Global Database on Occupational Safety and Health Legislation: Mexico." ILO.org. https://www.ilo.org/dyn/legosh/en/f?p=14100:1100:0::NO::P1100_ISO_CODE3,P1100_SUBCODE_CODE,P1100_YEAR:MEX,,2013.
- Johnson, Renée. 2017. "The North American Free Trade Agreement (NAFTA) and US Agriculture." Congressional Research Service. <https://sgp.fas.org/crs/row/R44875.pdf>.
- Jones, Andrew D., Lilly F. Shapiro, and Mark L. Wilson. 2015. "Assessing the Potential and Limitations of Leveraging Food Sovereignty to Improve Human Health." *Frontiers in Public Health* 3 (263). <https://doi.org/10.3389/fpubh.2015.00263>.
- Labonté, Ronald, Blouin, Chantal, Chopra, Mickey, Lee, Kelley, Packer, Corinne, Rowson, Mike Schrecker, Ted, and Woodward, David. 2007. "Towards Health-Equitable Globalisation: Rights, Regulation and Redistribution: Final Report to the Commission on Social Determinants of Health." *Institute of Population Health, University of Ottawa*.
- Labonté, Ronald, Mohindra, K. S, and Lencucha, Raphael. 2011. "Framing International Trade and Chronic Disease." In *Global Handbook on Noncommunicable Diseases and Health Promotion*, 367-86. New York, NY: Springer New York.
- Lee, Hailey. 2011. "Critical Political Economy Now." MIT Center for Civic Media.

- <https://civic.mit.edu/index.html%3Fp=1207.html>.
- Loewenson, Rene. 2001. "Globalization and Occupational Health: A Perspective from Southern Africa." *Bulletin of the World Health Organization* 79, no. 9: 863-68.
- Maquila Solidarity Network. 2003. "NAO Puebla: Will the NAFTA labour side agreement hold the Mexican government accountable?" THE ARCHIVE (1994-2014) OF THE MAQUILA SOLIDARITY NETWORK.
<https://en.archive.maquilasolidarity.org/issues/trade/nafta/naopuebla>.
- Martin, Gary. 2000. "Employment and unemployment in Mexico in the 1990's." Bureau of Labor Statistics. <https://stats.bls.gov/opub/mlr/2000/11/art1full.pdf>.
- McCauley, DJ. 2021. "Urban Agriculture Combats Food Insecurity, Builds Community." Eos.org.
<https://eos.org/articles/urban-agriculture-combats-food-insecurity-builds-community>.
- McFadyen, Jacqueline. 1998. "Working Paper: NAFTA Supplemental Agreements: Four Year Review." Peterson Institute for International Economics.
<https://www.piie.com/publications/working-papers/nafta-supplemental-agreements-four-year-review>.
- McNamara, Courtney. 2017. "Trade Liberalization and Social Determinants of Health: A State of the Literature Review." *Social Science & Medicine* (2017) 176: 1-13.
- McNamara, Courtney. 2015. "Trade Liberalization, Social Policies and Health: An Empirical Case Study." *Globalization and Health* 11, no. 1: 42.
- Monbiot, George. "Neoliberalism – the Ideology at the Root of All Our Problems," April 15,

2016.

<https://www.theguardian.com/books/2016/apr/15/neoliberalism-ideology-problem-george-monbiot>.

Moreno-Brid, Juan C., Juan C. Rivas Valdivia, and Jesús Santamaría. 2005. "Mexico: Economic growth exports and industrial performance after NAFTA." CEPAL: SEDE SUBREGIONAL DE LA CEPAL EN MÉXICO.

https://www.cepal.org/sites/default/files/publication/files/4963/S0600023_en.pdf.

Moreno-Torres, Luis A., and Carmelita E. Ventura-Alfaro. 2018. "Underreporting trends of occupational illnesses in Mexico." *Journal of Occupational Health* 60:85-88.

https://www.jstage.jst.go.jp/article/joh/60/1/60_17-0168-BR/_pdf.

NAALC, North American Agreement on Labor Cooperation. 1993. "North American Agreement on Labor Cooperation." US Department of Labor.

<https://www.dol.gov/agencies/ilab/naalc>.

NAFTA, the North American Free Trade Agreement. 1994. H.R.3450 - North American Free Trade Agreement Implementation Act.

<https://www.congress.gov/bill/103rd-congress/house-bill/3450/text>

Naik, Yannish, Baker, Peter, Walker, Ian, Tillmann, Taavi, Bash, Kristin, Quantz, Darryl,

Hillier-Brown, Frances, and Bamba, Clare. 2017. "The Macro-economic Determinants of Health and Health Inequalities-umbrella Review Protocol." *Systematic Reviews* 6, no. 1: 222.

Nkuiya, Bruno. 2013. "Trade Structure, Transboundary Pollution and Multilateral Trade Liberalization: The Effects on Environmental Taxes and Welfare." *Environmental & Resource Economics* 55, no. 3: 337-55.

- North American Free Trade Agreement. 1994. "Chapter Seven: Agriculture and Sanitary and Phytosanitary Measures." NAFTA. <http://www.sice.oas.org/trade/nafta/chap-071.asp>.
- North American Production Sharing. 2019. "Mexico Environmental Regulations." NAPS. <https://napsintl.com/mexico-manufacturing-news/mexico-environmental-regulations/>.
- Observatory of Economic Complexity. 2022. "Bilateral Trade by Products – Mexico and the United States." OEC. <https://oec.world/en/profile/bilateral-country/mex/partner/usa?depthSelector=HS2Depth&dynamicBilateralTradeSelector=year1997>.
- O'Connor, Anne-Marie, Sam Dillon, and Sidney Weintraub. 1998. "Mexico: Wages, Maquiladoras, NAFTA - Migration News." The Regents of the University of California, Davis campus. https://migration.ucdavis.edu/mn/more.php?id=1451_0_2_0.
- Ogle, Jazmine. 2009. "Corn, F Corn, Free Trade and the Mexican Quest for F ade and the Mexican Quest for Food Security." *PSU McNair Scholars Online Journal* 3 (1): Article 19. . <https://doi.org/10.15760/mcnair.2009.154>.
- Olson, Dennis R. 2008. "NAFTA's Food and Agriculture Lessons." *Peace Review* 20 (4): 418-425. 10.1080/10402650802494976.
- Pan American Health Organization. 2021. "Environmental Determinants of Health." PAHO/WHO | Pan American Health Organization. Accessed May 13, 2021. <https://www.paho.org/en/topics/environmental-determinants-health>.
- Pirkle, Catherine M., et al. 2015. "Re-envisioning global agricultural trade: time for a paradigm shift to ensure food security and population health in low-income countries." *Global Health Promotion* 22, no. 1: 60-63,92,112, <https://du.idm.oclc.org/login?url=https://www-proquest-com.du.idm.oclc.org/scholarly-jo>

[urnals/re-envisioning-global-agricultural-trade-time/docview/1664760415/se-2?accountid=14608](https://www.finance.senate.gov/imo/media/doc/091106spstest.pdf).

Polaski, Sandra. 2003. "TESTIMONY SUBMITTED TO THE SENATE SUBCOMMITTEE ON INTERNATIONAL TRADE OF THE COMMITTEE ON FINANCE THE EMPLOYMENT CONSEQUENCES OF NAFTA." Carnegie Endowment for International Peace. <https://www.finance.senate.gov/imo/media/doc/091106spstest.pdf>.

Public Citizen. 2018. "NAFTA's Legacy for Mexico: Economic Displacement, Lower Wages for Most, Increased Migration." Public Citizen. https://www.citizen.org/wp-content/uploads/migration/nafta_factsheet_mexico_legacy_march_2018_final.pdf.

Public Citizen. 2021. "TABLE OF FOREIGN INVESTOR-STATE CASES AND CLAIMS UNDER NAFTA AND OTHER U.S. "TRADE" DEALS." Public Citizen. <https://www.citizen.org/wp-content/uploads/2021.01.08-Investor-State-Chart-Jan-2021.pdf>.

Puyana, Alicia. 2012. "Mexican Agriculture and NAFTA: A 20-Year Balance Sheet." *Review of Agrarian Studies* 2 (1). http://ras.org.in/mexican_agriculture_and_nafta.

Rosenzweig, Paul. 2021. "The Cyber Monoculture Risk - Lawfare." Lawfare Blog. <https://www.lawfareblog.com/cyber-monoculture-risk>.

Sánchez-Román, Francisco R., Cuauhtémoc A. Juárez-Pérez, Guadalupe A. Madrid, Luis Haro-García, Víctor H. Borja-Aburto, and Luz Claudio. 2006. "Occupational health in Mexico." *Int J Occup Environ Health* 12 (4): 346-54. 10.1179/oeh.2006.12.4.346.

Santini, Christina. 2006. "The People of the Corn." Cultural Survival. <https://www.culturalsurvival.org/publications/cultural-survival-quarterly/people-corn>.

Schmidt, Ronald H., and William C. Gruben. 1992. "Ejido Reform and the NAFTA." FRASER - St. Louis Fed.

https://fraser.stlouisfed.org/files/docs/historical/frbsf/frbsf_let/frbsf_let_19921002.pdf.

Schwarzenberg, B, A. 2019. "U.S. Trade Debates: The Case For and Against Trade Restrictions." Congressional Research Service. <https://fas.org/sgp/crs/row/IF11110.pdf>

Secretaría de Agricultura y Desarrollo Rural. 2018. "Background Direct Support Program to the field." Secretaría de Agricultura y Desarrollo Rural | Gobierno | gob.mx.

<http://www.agricultura.gob.mx/proagro/antecedentes>.

Secretariat of the Commission for Environmental Cooperation. 1993. "North American Agreement on Environmental Cooperation." United States Trade Representative.

<https://ustr.gov/sites/default/files/naaec.pdf>.

Sierra Club. n.d. "NAFTA's Impact on Mexico." Sierra Club.

<https://vault.sierraclub.org/trade/downloads/nafta-and-mexico.pdf>.

Sierra Club. 2014. "20 Years of Costs to Communities and the Environment." Sierra Club.

https://content.sierraclub.org/creative-archive/sites/content.sierraclub.org/creative-archive/files/pdfs/0642-NAFTA%20Report_05_low.pdf.

Solomon, Joel. 2001. "Mexico: Trading Away Rights - The Unfulfilled Promise of NAFTA's Labor Side Agreement." Human Rights Watch.

https://www.justice.gov/sites/default/files/eoir/legacy/2013/06/14/mexico_0401.pdf.

Stack, Stacey. 1998. "Chapter 15: Women and NAFTA: Challenging Socioeconomic Instability." University of Washington NAFTA Task Force Report 1998.

<http://depts.washington.edu/canada/nafta/98chapters/15stacknafta98.htm>.

Subramanian, S V, Belli, Paolo, and Kawachi, Ichiro. 2002. "The Macroeconomic Determinants

- of Health." *Annual Review of Public Health* 23, no. 1: 287-302.
- Thow, Anne Marie. 2009. "Trade Liberalisation and the Nutrition Transition: Mapping the Pathways for Public Health Nutritionists." *Public Health Nutrition* 12, no. 11: 2150-158.
- Torres, Raymond., and International Labour Office. 2001. *Towards a Socially Sustainable World Economy an Analysis of the Social Pillars of Globalization / Raymond Torres*. Studies on the Social Dimensions of Globalization. Geneva: International Labour Office.
- Trachtenberg, Danielle. 2019. "Local Labor-Market Effects of NAFTA in Mexico: Evidence from Mexican Commuting Zones." Inter-American Development Bank.
https://publications.iadb.org/publications/english/document/Local_Labor-Market_Effects_of_NAFTA_in_Mexico_Evidence_from_Mexican_Commuting_Zones_en.pdf.
- Trueblood, Michael, and Shahla Shapouri. 2001. "Issues in Food Security: Implications of Trade Liberalization on Food Security of Low-Income Countries." USDA ERS.
https://www.ers.usda.gov/webdocs/publications/42365/31932_aib765-5_002.pdf?v=0.
- The United Nations Conference on Trade and Development. 2021. "Module 2 The effects of trade on women's well-being and economic empowerment: Evidence and research methodologies." UNCTAD Virtual Institute.
<https://vi.unctad.org/tag/docs/vol1/vol1m2.pdf>.
- U.S. Bureau of International Labor Affairs. 2005. "North American Agreement on Labor Cooperation: A Guide." US Department of Labor.
<https://www.dol.gov/agencies/ilab/trade/agreements/naalcgd>.
- U.S. Department of Justice Immigration and Naturalization Service. 1997. "1996 Statistical Yearbook of the Immigration and Naturalization Service." Department of Homeland Security.

- https://www.dhs.gov/sites/default/files/publications/immigration-statistics/yearbook/1996/ins_yearbook_immigration_statistics_1996.pdf.
- U.S. Department of State. 2022. "NAFTA Investor-State Arbitrations - United States Department of State." State Department. <https://www.state.gov/nafta-investor-state-arbitrations/>.
- U.S. NAO. 1997. "US NAO Submission 9702 (Han Young)." US Department of Labor. <https://www.dol.gov/agencies/ilab/us-nao-submission-9702-han-young>.
- Villarreal, M. A. 2010. "NAFTA and the Mexican Economy." Congressional Research Service. <https://sgp.fas.org/crs/row/RL34733.pdf>.
- Walls, Helen L., Deborah Johnston, Jacob Mazalale, and Ephraim W. Chirwa. 2018. "Why we are Still Failing to Measure the Nutrition Transition." *BMJ Global Health* 3 (1) (02). doi:<http://dx.doi.org/10.1136/bmjgh-2017-000657>. <https://du.idm.oclc.org/login?url=https://www.proquest.com/scholarly-journals/why-we-are-still-failing-measure-nutrition/docview/2551748819/se-2>.
- Welham, Carly. 2018. *Chapter 7: Looking Back and Living Forward: Indigenous Research Rising Up*. Edited by Jennifer Markides and Laura Forsythe. N.p.: Brill.
- White, Marceline, Carlos Salas, and Sarah Gammage. 2003. "Trade Impact Review: Mexico Case Study NAFTA and the FTAA: A Gender Analysis of Employment and Poverty Impacts in Agriculture." Women's Edge Coalition. https://www.iatp.org/sites/default/files/NAFTA_and_the_FTAA_A_Gender_Analysis_of_Employ.pdf.
- Williams, Heather L. 2003. "Of Labor Tragedy and Legal Farce: The Han Young Factory Struggle in Tijuana, Mexico." *Social Science History* 27 (4): 525-50. <https://www.jstor.org/stable/40267825>.

Wise, Raúl Delgado, and James M. Cypher. "The Strategic Role of Mexican Labor under NAFTA: Critical Perspectives on Current Economic Integration." *The Annals of the American Academy of Political and Social Science* 610 (2007): 120–42.

<http://www.jstor.org/stable/25097892>.

WOODWARD, David, DRAGER, Nick, BEAGLEHOLE, Robert, and LIPSON, Debra. 2001.

"Globalization and Health: A Framework for Analysis and Action." *Bulletin of the World Health Organization* 79, no. 9: 875-81.

World Bank, and World Bank Group. 1978. World development indicators. Washington, D.C.: World Bank.

World Bank Group. 1994. "World Development Report 1994." World Bank.

<https://openknowledge.worldbank.org/bitstream/handle/10986/5977/WDR%201994%20-%20English.pdf>.

Yunez-Naude, Antonio, and Fernando B. Paredes. 2002. "Lessons from NAFTA: The Case of Mexico's Agricultural Sector." Caribbean Trade Reference Center.

<http://ctrc.sice.oas.org/geograph/north/yunez.pdf>.