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Finance for Agriculture or Agriculture for Finance?

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Abstract:

Food studies scholars have paid increasing attention to ‘financialisation’ within the food system as private financial actors have played a growing role in various facets of the sector in recent years. While there has been much attention paid to the implications of the greater role for financial actors in the food system, there has been relatively less attention paid to the ways in which these actors have historically interacted with it, in particular in relation to the role of the state in mediating agricultural finance. This article examines the long association between agriculture, finance, and the state. Historically, private capital has been reluctant to invest in agriculture without assurances and support from the state, and states have practiced varying degrees of regulation on private financiers in the sector. These trends have shaped the practices of contemporary financialisation. Although we recognize the systematic political project to reduce the role of the state in agriculture since the 1970s, these patterns persist and we ultimately argue that to understand the financialisation of agriculture, it is important to understand how the state has been a longstanding coupler between finance and agriculture.

Key Words: Financialisation, Agricultural Finance, States, Financial Regulation, Commodity Markets

The food and financial crises of 2007-08 spurred a renewed focus on the role of financial actors in the food system and in particular what is widely seen to be a ‘financialisation’ of food and agriculture (Fuchs, Meyer-Eppler and Hamenstädt 2013; Clapp 2012a). In particular, the growing role of private financial actors in supermarkets, land investment, commodity and value chains and the food system more generally have received increased attention (Burch and Lawrence 2009; Isakson 2014; Fairbairn 2014). The financialisation of food and agriculture is expanding into areas beyond the dominant agricultural export states such as Canada, the US, and the EU. International organisations are increasingly promoting ‘financial inclusion’ in many developing countries as a tool to support agricultural development and improvement (Global Partnership for Financial Inclusion and International Financial Corporation 2011; Taylor 2012). As a result, financialisation is being extended, albeit unevenly, to new global sites. Agrifood scholars often place this expansion within the realm of capitalist relations, and as an expression

of the contemporary food regime, which highlights the contradictions and logic of capital (e.g. Burch and Lawrence 2009; McMichael 2013).

The attention to the greater role of private financial actors in the food system has brought forward important insights on the emergence of financialisation in relation to the dynamics of capitalist development. At the same time, however, there has been relatively less attention paid to the ways in which these actors have historically played a role in the food system and their relationship with the state (Clapp and Helleiner 2012). A longer view highlights the critical role of the state in mediating the relationship between agriculture and finance. Helleiner has used this longer view to show how states are critical to the globalisation of finance (Helleiner 1994). In the realm of food and agriculture, private capital has historically been reluctant to invest without assurances and support from the state, and states have practiced varying degrees of regulation on private financiers in the sector at different times.

Over the course of the past century, states in both rich and poor countries have at times taken a proactive role in supporting farmers, a critical political force who were not always well served by private finance. In the first part of the 20th century, today's advanced industrialised states established institutions to provide farm credit, offered financial support and enacted regulations designed to limit the influence of private financial actors specifically over agricultural commodity markets. Many of these types of measures were replicated in developing countries in the 1960s and 70s. In recent decades, with the rise of the neoliberal economic model that both states and private financial actors supported, many states have scaled back the protections and institutions that supported farmers and relaxed regulations that once reined in private financial actors in the sector. A number of states have also begun to invest in agriculture via private financial markets and new financial tools.

This article outlines the contours of these historical trends and discusses their implications for present-day financialisation in the food sector. In the first section, we examine the role of the state as provider of agricultural credit for production and stable institutions for agricultural marketing. In section two, we highlight the role of the state in regulating private financial actors in agricultural commodity exchange markets. The third section looks at the ways in which these state-backed institutions and regulations have been re-shaped by states in recent decades, giving the upper hand to private financial actors in the agricultural sector. It is important to recognise the state's role as a regulator and in shaping institutions for finance, even

if that role has been heavily influenced by private financial actors themselves (Barth, Caprio and Levine 2012). We argue that the state's role in these different trends over time has important implications for the practices of contemporary financialisation. Whereas the state has taken explicit measures to ensure that agriculture was supported by finance at various times, more recently states have instead ensured that financial markets were supported by agriculture. The state, through its various interventions at the intersection of agriculture and finance, has shaped the conditions that today make agriculture an attractive site for investment by private financial actors. This shift has had important consequences for farmer livelihoods and agricultural sustainability. It remains to be seen whether agriculture will remain attractive to private financial investors as the state institutional legacy weakens and market turmoil continues apace.

Early Approaches to Agricultural Credit and Marketing

Historically, the modern state in rich countries has played an important role in creating institutions to support industrialised models of agriculture¹ (Chang 2009; Friedmann 1982; Finegold 1982; Gilbert and Howe 1991). At the same time, agrarian movements have pushed the state to develop unique forms of financial regulation and legislation in the US and Canada (Carney 2011; Prasad 2012; Sanders 1999; Winson 1992). Since the early 1900s, agricultural economists have consistently highlighted the unique requirements of capitalizing agriculture. Farms are risky financial investments in comparison to other economic sectors such as manufacturing or services. Consequently, private capital has been reluctant to invest without assurances from the state such as contract enforcement, bankruptcy laws and state-backed collateral. Governments in Europe, for example, stepped in to provide financial support for farmers in the form of credit institutions starting in the 19th century, which spread to the US and Canada in the early 20th century (Prasad 2012). In addition, states provided a constellation of price and income supports, export trade financing and other subsidies to agriculture. In this way, the state mediated the development of financial services for agriculture through state-influenced financial markets to keep commodity markets stable; to provide credit and cooperatives for farmers; and to operate marketing boards that stabilised farmers' incomes and in turn credit-worthiness.

¹ See Gilbert and Howe (1991) for an explanation of how state institutions such as the US Department of Agriculture contributed to reinforcing and privileging class relations. The result is support for agriculture was varied and structured along class, race and gender.

States implemented formalised policies for agricultural credit to encourage commercial agriculture. For example, the US state supported industrial agriculture which was premised on farm mortgages aimed to provide capital for the purchase of inputs and equipment (Fitzgerald 2003). While not unheard of, private banks typically had little interest in agricultural finance in the early 1900s (Wolff 1910), and states became in effect a lender of last resort and set up agricultural finance institutions such as the Canadian Farm Loan Board in 1927. The US government established the Federal Farm Loan Act of 1916 and created Federal Land Banks, which turned farm ownership into collateral for mortgages. The state thus played a key role in providing agricultural credit and capital to farmers, and importantly, the state also protected banks and finance by preventing foreclosures and other losses on loans (Coleman and Grant 1998; Winson 1992).

Other forms of agricultural credit provision also relied on state involvement. While the state limited banks' operations with anti-trust acts and placed restrictions on their involvement in commodity markets, credit unions and other cooperative endeavours did not face the same restrictions. In Europe, cooperatives and credit unions were established by agrarian interests to finance and support farmers (Chang 2009; Booth, 1928). In the US and Canada, cooperative marketing organisations and credit unions were actively supported by farmer groups who pressured politicians to enact state regulations and provide credit (Booth 1928; Winson 1992).

Agricultural commodity trade expanded as exporting countries marketed grain surpluses around the globe through export financing and subsidies. Canada and Australia established marketing boards to manage commodity trade of grains, in part to restrict the manipulation of grain markets and to provide stable prices and orderly marketing for exports, while also offering credit to importing countries (Turner 1949; Grogan 1948). Farmers and commodity trading interests of exporting countries benefitted from these supports, but farmers in importing countries had to compete with 'dumped' commodities, which were sometimes given in the form of food aid (Clapp 2012b).

A number of events occurred during the 1980s-1990s that brought an end to the relatively stable post WWII commodity markets. The International Commodity Agreements began to unravel along with many state marketing boards and trading enterprises. The commodity agreements were established to secure stability in commodity markets after World War II (Corea 1991), and marketing boards helped to provide orderly and stable marketing of agricultural

commodities. In addition, the end of the Soviet Union opened up space for new market arrangements. At that time and the World Bank and the International Monetary Fund pressured countries to adopt structural adjustment policies which ended or curtailed state support of agriculture such as the subsidisation of inputs and credit and the disbandment of state marketing boards (Clapp 1997). Critics claimed that the subsidy programmes were inefficient, and ultimately harmed small farmers (Bates 2005).

Regulating Finance and Commodity Exchanges

The link between financial investors and trade in agricultural commodities has a long history. In the eighteenth and nineteenth centuries commodity exchanges created fungible agricultural commodities through a combination of technological innovation and state and market regulation (Cronon 1992). Futures exchanges for agricultural commodities were established in London in the eighteenth century and in the US in the nineteenth century in part as an outcome of globalised trade. These markets provided a means by which buyers and sellers of contracts could purchase and sell agricultural commodities for delivery at a date in the future, and could hedge their risks against the uncertainty of agricultural production and long-distance trade. Over the course of the mid to late nineteenth century, the practice of agricultural futures trading for grains became widespread in the US and later in Canada.

Private speculative capital has long been active in agricultural commodity marketing and trade, even prior to formalised commodity exchanges, and in turn it has been a contested site. Speculation is a trade based on the prediction of price movements with the uncertain possibility of a reward. As a result, ‘futures’ trading has been likened to gambling. However, proponents state that commodity exchanges centralise and organise markets, commercialise agriculture and provide services such as price information, and risk protection (Hieronymus 1977; Irwin and Sanders 2012).

Farmers and farmer organisations have historically been distrustful and highly critical of commodity exchanges because non-agricultural interests have used futures to manipulate prices and markets. Taking these concerns into consideration, several US states had banned futures trading outright in the late 19th century. But despite some curbs on financial speculation in commodity markets, futures trade grew and eclipsed the physical trade of commodities in centers free of restrictions such as Chicago (Cowing 1957). Financial speculators could trade a contract

many times over without taking delivery of the underlying commodity, for a small portion of its value. This practice continues today. Futures contracts, for example, can be secured with bonds which represent a fraction of the value, as low as 3-12 percent, and as such a large amount of commodities can be controlled with very little capital (CME Group n.d.). Consequently, futures markets are highly leveraged.

Commodity exchanges have been highly contested sites that have drawn the interest of agrarian political forces and the state. The US government regulated commodity exchanges in the early twentieth century in order to reduce the chances for market manipulation by private actors. The US Grain Futures Act of 1922 and the 1936 Commodity Exchange Act were key pieces of legislation that sought to rein in financial speculators in agricultural markets. The Grain Futures Act required all futures transactions to take place on approved exchanges, and outlawed manipulation of the market. Large market traders were required by law to report daily on their market positions, which helped to curtail manipulation and increase transparency on futures markets. The Commodity Exchange Act limited the number of futures contracts that speculators were legally allowed to own at any one time. The 1933 Glass-Steagall Act regulated banking and bank speculation, including their involvement in commodity markets. The aim of these various regulations was not to outlaw financial speculation on these markets, and indeed agricultural ‘end users’ that traded on these markets for hedging purposes – primarily grain traders, farmers’ co-operatives, food processors and large ranchers – were exempted from these regulations. Rather, the regulations sought to prevent ‘excessive’ speculation that might result in market manipulation and sudden sharp price shifts (Clapp and Helleiner 2012).

Commodity exchanges drew little interest from critical food studies scholars after World War II because they were highly regulated by the state and agricultural exporting states were providing marketing support through various state marketing institutions and programmes. Proponents claim that during this time commodity exchanges faced ‘near extinction’ (Irwin 2012: np) as a result of this regulation. However, a number of regulatory changes, starting in the 1970s marked the revival of commodity exchanges and the start of a ‘golden age’ for futures markets (Irwin 2012: np).

States and the Reformation of the Agriculture-Finance Sphere

Although the intention of the above state interventions was to support agricultural

development broadly, these measures in practice often favoured large-scale farmers and agricultural trading interests, the latter of which have played a complex role as both farm interests and financial players. More recently, there has been a systematic reduction in the role of the state in the agricultural finance sphere that has benefited private financial actors and larger farming interests at the expense of small-scale farmers (Fairbairn 2014, Isakson 2014). The most visible of these changes was the reform of government-run marketing boards which have been effectively privatised, including in Canada and Australia as well as in many developing countries. Most experts expected that with the state marketing boards out of the way, the private sector would step in to set up new marketing arrangements such as country specific agricultural commodity exchanges. Thus far, there has been little uptake. Banks and financiers were reluctant to fund the export of commodities without the state-backed institutions securing the loans in developing countries that lost their marketing boards (Varangis and Larson 1996). In addition, the privatization of the Australian Wheat Board, and more recently the Canadian Wheat Board, has meant that farmers who previously counted on the marketing board to help market grain are now expected to turn to commodity exchanges and large grain traders for marketing assistance and risk management (Cryderman, 2013). In turn, there are indications that small and mid-size producers will lose with these new marketing arrangements (Magnan 2011)

State-backed credit provision has also undergone change in recent decades. Rich countries have continued to support agriculture through a variety of programmes including providing credit when private capital avoided the risk of agricultural investment. However, there are shifts such as Farm Credit Canada aligning credit provisions with private lenders in the 1980s and borrowing from financial markets rather than relying on the Federal government (FCC 2010). In the US, private financial institutions and actors are taking a greater role in the provision of farm credit (Briggeman 2011). In developing countries, private financial actors are still reluctant to provide credit to farmers, although there is encouragement from states for them to do so (Sachs et al. 2004; Dercon 2005; Barnett, Barrett and Skees 2008). International development agencies and lending institutions have developed programmes to encourage private finance to support agriculture and boost 'financial inclusion'. These projects include structured trade and value chain financing (Miller 2011; McMichael 2013), programmes to encourage the reform of collateral laws and land titling (World Bank 2012) and microfinance (Aitken 2013). While not as visible as state marketing institutions, these programmes rely on the state to provide regulations

that support credit and debt such as providing legal frameworks to secure private property for collateral.

Before structural adjustment programmes were widely adopted in the 1980s-90s, state-marketing boards in developing countries would often provide credit to manage commodity trade risk. Financing commodity trade and commodity-related projects exposes the lender to price risks, since the borrower's ability to repay the loan largely depends on future commodity prices. It is risky because volatile commodity prices can mean that the value of a shipment can change dramatically between when the commodities are sold and when they are received. As the state's role in commodity trade shifted with structural adjustment, the risks remained and private capital was unwilling to step in. Commodity exchanges, in theory provided derivative instruments such as futures contracts, which could be used to manage these risks. The World Bank encouraged governments to access to derivative markets and risk management tools in order to 'solve public sector problems,' explaining how a handful of developing states used commodity derivatives. Mexico, for example, set up a state agency to hedge commodity prices on the New York Cotton Exchange (Larson, Varangis and Yabuki 1998: 2). The offering of such advice by multilateral aid agencies shows how states began to look to new kinds of financial instruments to manage and facilitate commodity marketing problems. However, commodity exchanges have high transaction costs (IFC 2011), which means only organizations and groups with large amounts of capital can benefit from participating in these marketing arrangements.

The shifting regulatory context for finance in recent decades also had implications for agricultural commodity trading, bringing lighter regulations and more harmonisation between the US and the EU. Although tight regulations on the agricultural commodity futures trade had been in place in the US for over 50 years, those rules were relaxed in the 1980s and 1990s, enabling banks to increasingly sell new financial products linked to agricultural commodities (Ghosh 2010; Clapp and Helleiner 2012). Banks requested and were granted 'no action letters' that enabled them to exceed previously set position limits, which enabled them to sell new financial derivative products 'over the counter' (OTC) (Clapp and Helleiner 2012). The Commodity Futures Modernization Act of 2000 explicitly prohibited the Commodity Futures Trading Commission, the US regulatory body that oversees commodity exchange markets, to regulate OTC derivatives (Tett 2009). This change brought the US regulatory approach more into line

with the European regulation of commodity markets, which only had light regulations that also did not oversee the OTC markets (Tilburg and Vander Stichele 2011).

With the implementation of the Commodity Futures Modernization Act of 2000, commodity exchanges have grown into global corporations with a significant reach into emerging economies' markets. Commodity exchanges were initially member-led discrete associations. Now they are publically traded, consolidated corporations. For example, the CME Group now includes the Chicago Board of Trade, the Chicago Mercantile Exchange, the New York Mercantile Exchange and the Kansas Board of Trade, which it acquired since 2007. The consolidation shows how anti-trust laws that once restricted this kind of market dominance have been set aside by the state.

The combination of relaxed position limits and exemption of OTC derivatives from reporting fuelled the creation of new financial products after 2000 that burst onto the scene without regulators being aware of its size and scope. Indeed, there has been massive growth of agriculture-based derivatives compared to the previous 70 years of regulation. The total assets of financial speculators in agricultural commodity markets increased from US\$65 billion in 2006 to some US\$126 billion by early 2011 (Worthy 2011: 13). Similar to the late nineteenth century, fictitious or paper trade of futures contracts have exceeded the physical trade of commodities by many times. In the US wheat futures market, for example, financial speculators' share of the trade increased from 12 percent in the mid-1990s to 61 percent in 2011 (Worthy 2011: 13). In the coffee market it is estimated that 1kg coffee is traded 8000 times over in speculative trade (Breger Bush 2012: 40). Investors also bought into new financial investment products linked to farmland acquisition (See Fairbairn, this issue).

Heightened and excessive speculation in the sector can result in increased volatility in agricultural and land prices, which results in hardships both for consumers and for farmers, the latter of which do not necessarily benefit when prices rise, because volatility introduces greater uncertainties and complicates planning (FAO 2011). Investments linked to farmland acquisition in developing countries have been associated in many cases with loss of land rights for small scale producers and ecological impacts of the introduction of large-scale industrial agricultural production, as we have seen in the case of land acquisitions for biofuel operations (Vermeulen and Cotula 2010; McMichael 2010). Large agricultural trading interests, however, have benefited

from these changes, as they increasingly joined financial institutions in offering agricultural commodity derivative products to investors (Murphy et al. 2012).

The main investors in these new agricultural commodity derivatives products are large-scale institutional investment funds that are seeking to gain exposure to commodity markets. Governments have taken a role in such investments via pension funds and sovereign wealth funds, alongside private investors such as insurance companies, mutual funds and foundation endowments. Large-scale investors such as these tend to make long-term passive investment decisions that do not require active management. Changes in investment by pension funds are a prime example of the ways in which these financial investment shifts have affected agriculture, and highlight the complex role of government involvement. According to some estimates, the agricultural investments of pension funds are around US\$320 billion, up markedly from the US\$6 billion these investors held in agriculture in 2002 (Buxton, Campanale and Cotula 2012: 2). The Canada Pension Plan, for example, began an agricultural investment programme that targeted farmland in Canada, the US, Australia, New Zealand and Brazil (CBC 2013). This programme was part of a larger effort to move the fund away from ‘safe’ government and treasury investments into riskier private investments that included agriculture. As other countries started to shift their public pension funds away from state-secured investments toward private investments (Anon 2014), a new kind of ‘state’ investment is capitalizing on agriculture (Buxton, Campanale and Cotula 2012).

The flurry of private financial investments in the sector in recent decades as a result of the changes will likely have long lasting consequences for agricultural and food system sustainability. The state’s earlier policies underpinned and secured credit provision for agriculture as a long-term investment, recognising the important role agriculture played in state development. But contemporary states are now underpinning and securing credit for financial actors operating in the agricultural sector, themselves seeking benefits alongside financial interests. This shift only reinforces the short-term incentives that typically drive decisions in the financial sector and which often run counter to long-term sustainability goals (Helleiner 2011). More strictly regulated financial markets on their own are not necessarily sufficient for sustainability in the agricultural sector, as the ecological effects of agricultural industrialisation in the 20th century have shown (Weis 2010). But weak financial regulations that encourage private speculative investments in the sector have spurred appropriation of new landscapes into

industrial production and the externalisation of ecological and social costs that are associated with it, which only exacerbate efforts to promote sustainability in the sector (see Clapp, forthcoming). Greater oversight of financial market activity in the sector is an important component of building more sustainable agrarian livelihoods and food systems, alongside stronger policies for environmental protection.

Conclusion

In this current period of heightened financialisation, much of the attention has focused on the role of private financial actors and their rationale for engaging more actively in the agricultural sector. Financialisation is seen as part of the logic of capitalism as it seeks to reap profits on a range of economic activities, including agriculture. As we have shown in this article, putting this current period into a longer historical context reveals that the state has played an important role in shaping the contours of contemporary financialisation of food. The modern state in rich countries was instrumental in creating institutions to support agriculture, including the provision of credit and other supports to farmers who otherwise would not have received it, albeit unevenly. States also actively regulated the actions of private financial actors in commodity markets as a means to protect farmers and stabilise incomes. Recent decades have seen the earlier institutions reshaped, alongside the deregulation of finance in ways that have important implications for food and agriculture. Although it appears that finance is operating on its own capitalist logic, it is important to recognise that its context for doing so has been strongly shaped by the state.

The mediating role of states between finance and agriculture over the course of the past century has in many ways laid the groundwork that made the sector particularly attractive to private financial actors in recent decades. The state, in other words, was crucial in creating the conditions not only for stable markets, but also for the industrialisation of agriculture and the development of global agricultural value chains by securing commodity trade. Once these trends were firmly established, private capital became more interested in investing in all stages of the agricultural sector, rather than simply capitalizing on commodity market price shifts at the very end of the production process.

States may have been influenced by private financial actors in recent decades, but they also played a key role in encouraging those actors to take a lead and this shift has resulted in a

number of consequences. The stability that states brought to the sector via credit provision and regulations has been removed just as states handed private finance the freedom to play a bigger role in the sector. The recent volatility on agricultural markets can be seen in this context, and it is unclear whether private financial actors will remain interested in the sector given the high degree of risk and uncertainty that encouraged states to become more involved a century ago. It is entirely possible that the current market volatility and degraded ecological base will lead private financial actors to ultimately withdraw from the sector, and the state may be called upon to step back in to stabilise it. The longer, historical view provided here gives some perspective, and enables us to see that it is not necessarily inevitable that private sector actors will voluntarily seek to dominate this sector if the state does not create the conditions that make it profitable, not just in the short term, but also in the long term. States may have shaped the interests of private finance in the sector, but with the withdrawal of the state, that interest may fade in the context of market turmoil and ecological degradation.

REFERENCES

- Aitken, R. 2013 'The Financialization of Micro-Credit', *Development and Change* 44(3): p.473–499.
- Anon 2014 'Japan Readies to Unshackle Huge Pension Fund', *Channel NewsAsia*. Available at: <http://www.channelnewsasia.com/news/business/international/japan-readies-to/1161688.html> [Accessed June 18, 2014].
- Barnett, B.J., Barrett, C.B. and Skees, J.R. 2008 'Poverty Traps and Index-Based Risk Transfer Products', *World Development* 36(10): p.1766–1785.
- Barth, J.R., Caprio, G. and Levine, R. 2012 *Guardians of Finance: Making Regulators Work for Us*, Cambridge, Mass.: MIT Press.
- Bates, R.H. 2005 *Markets and States in Tropical Africa: The Political Basis of Agricultural Policies*, Berkeley: University of California Press.
- Booth, J.F. 1928 'Cooperative Marketing of Grain in the United States and Canada', *Journal of Farm Economics* 10(3): p.331–356.
- Breger Bush, S. 2012 *Derivatives and Development a Political Economy of Global Finance, Farming, and Poverty*, New York: Palgrave Macmillan.
- Briggeman, B.C. 2011 'The Role of Debt in Farmland Ownership', *Choices*. Available at: <http://www.choicesmagazine.org/choices-magazine/theme-articles/farmland-values/the-role-of-debt-in-farmland-ownership> [Accessed September 12, 2013].
- Burch, D. and Lawrence, G. 2009 'Towards a Third Food Regime: Behind the Transformation', *Agriculture and Human Values* 26(4): p.267–279.

- Buxton, A., Campanale, M. and Cotula, L. 2012 *Farms and Funds: Investment Funds in the Global Land Rush*, London: International Institute for Environment and Development. Available at: <http://pubs.iied.org/pdfs/17121IIED.pdf> [Accessed September 11, 2013].
- Carney, R. 2011 'The Domestic Political Origins of Global Financial Standards: The Agrarian Roots of American Securities Regulations', *Business and Politics* 13(3): p.1–39.
- CBC 2013 'CPP Buys Saskatchewan's Assiniboia Farmland for \$128M', Available at: <http://www.cbc.ca/1.2461131> [Accessed June 18, 2014].
- Chang, H.-J. 2009 'Rethinking Public Policy in Agriculture: Lessons from History, Distant and Recent', *Journal of Peasant Studies* 36(3): p.477–515.
- Clapp, J. 1997 *Adjustment and agriculture in Africa: Farmers, the State, and the World Bank in Guinea*, New York: St. Martin's Press.
- Clapp, J. 2012a *Food*, Malden, Mass.: Polity Press.
- Clapp, J. 2012b *Hunger in the Balance: The New Politics of International Food Aid*, Ithaca: Cornell University Press.
- Clapp, J. and Helleiner, E. 2012 'Troubled Futures? The Global Food Crisis and the Politics of Agricultural Derivatives Regulation', *Review of International Political Economy*. 19(2): p. 181-207.
- Clapp, J. forthcoming. 'Distant Agricultural Landscapes', *Sustainability Science*, 2015, DOI 10.1007/s11625-014-0278-0
- CME Group 'A Trader's Guide to Futures: Thought Leadership with a Global Perspective', Available at: http://www.cmegroup.com/education/files/ED-004_IntroToFuturesBrochure.pdf [Accessed June 27, 2012].
- Coleman, W.D. and Grant, W.P. 1998 'Policy Convergence and Policy Feedback: Agricultural Finance Policies in a Globalizing Era', *European Journal of Political Research* 34(2): p.225–247.
- Corea, G. 1991 *Taming Commodity Markets: The Integrated Programme and the Common Fund in UNCTAD*, Manchester: Manchester University Press.
- Cowing, C.B. 1957 'Market Speculation in the Muckraker Era: The Popular Reaction', *The Business History Review* 31(4): p.403–413.
- Cronon, W. 1992 *Nature's Metropolis: Chicago and the Great West*, New York: W.W. Norton.
- Dercon, S. 2005 *Insurance Against Poverty*, Oxford University Press.
- Fairbairn, M. 2014 'Like Gold with Yield': Evolving Intersections between Farmland and Finance', *Journal of Peasant Studies* 42(5): p.1–19.
- FCC 2010 'Farm Credit Canada - Our History', *Our History: Agriculture. It's All We've Ever Done: Serving Canadian Agriculture Since 1959*. Available at: http://www.fcc-fac.ca/en/aboutus/profile/history_e.asp [Accessed July 13, 2010].
- Finegold, K. 1982 'From Agrarianism to Adjustment: The Political Origins of New Deal Agricultural Policy', *Politics & Society* 11(1): p.1–27.
- Fitzgerald, D.K. 2003 *Every Farm a Factory: The Industrial Ideal in American Agriculture*, New Haven: Yale University Press.
- Friedmann, H. 1982 'The Political Economy of Food: The Rise and Fall of the Postwar International Food Order', *The American Journal of Sociology* 88: p.S248–S286.
- Fuchs, D., Meyer-Eppler, R. and Hamenstädt, U. 2013 'Food for Thought: The Politics of Financialization in the Agrifood System', *Competition & Change* 17(3): p.219–233.
- FAO. 2011 *The State of Food Insecurity in the World 2011*, Rome: FAO.

- Ghosh, J. 2010 'The Unnatural Coupling: Food and Global Finance', *Journal of Agrarian Change* 10(1): p.72–86.
- Cryderman, K. 2013 'Buy, Grow, Sell High: Canada's Wheat Farmers Turn Into Commodity Traders', *The Globe and Mail*. Available at: <http://www.theglobeandmail.com/news/national/buy-grow-sell-high-canadas-farmers-turn-into-commodity-traders/article14365325/> [Accessed March 17, 2014].
- Gilbert, J. and Howe, C. 1991 'Beyond 'State vs. Society': Theories of the State and New Deal Agricultural Policies', *American Sociological Review* 56(2): p.204–220.
- Global Partnership for Financial Inclusion and International Financial Corporation 2011 'Scaling Up Access to Finance for Agricultural SMEs Policy Review and Recommendations', Available at: http://www.gpfi.org/sites/default/files/documents/G20_Agrifinance_Report%20%28FINA L%20ONLINE%29.pdf.
- Grogan, F.O. 1948 'Price Stabilisation in the Australian Wheat Industry', *The Australian Quarterly* 20(4): p.25–38.
- Helleiner, E. 1994 *States and the Reemergence of Global Finance*, Ithaca, NY: Cornell University Press.
- Helleiner, E. 2011. 'The Greening of Global Financial Markets?', *Global Environmental Politics* 11(2): p.51–53.
- Hieronymus, T.A. 1977 *Economics of Futures Trading, for Commercial and Personal Profit*, Chicago : Commodity Research Bureau.
- International Finance Corporation. 2011 *Scaling Up Access to Finance for Agricultural SMEs Policy Review and Recommendations*, Washington, D.C.: International Finance Corporation.
- Irwin, S.H. 2012 'What We've Learned About Speculation', OpenMarkets, Available at: <http://openmarkets.cmegroup.com/4520/what-weve-learned-about-speculation> [Accessed November 5, 2012].
- Irwin, S.H. and Sanders, D.R. 2012 'Financialization and Structural Change in Commodity Futures Markets', *Journal of Agricultural and Applied Economics* 44(3): p.371-396.
- Isakson, S.R. 2014 'Food and Finance: The Financial Transformation of Agro-food Supply Chains', *Journal of Peasant Studies*: 41(5): p.749-775.
- Larson, D.F., Varangis, P.N. and Yabuki, N. 1998 *Commodity Risk Management and Development*, Washington, DC: World Bank, Development Research Group, Rural Development.
- Magnan, A. 2011 'The Limits of Farmer Control: Food Sovereignty and Conflicts over the Canadian Wheat Board' in A. A. Desmarais, N. Wiebe, and H. Wittman (eds) *Food Sovereignty in Canada: Creating Just and Sustainable Food Systems*, Black Point, NS: Fernwood Publishing.
- McMichael, P. 2010. 'Agrofuels in the Food Regime', *The Journal of Peasant Studies*, 37 (4), p. 609-629.
- McMichael, P. 2013 'Value-chain Agriculture and Debt Relations: Contradictory Outcomes', *Third World Quarterly* 34(4): p.671–690.
- Miller, C. 2011 *Agricultural Value Chain*, Rome: Food and Agriculture Organization. Available at: http://www.ruralfinance.org/fileadmin/templates/rflc/documents/AgVCF_Tech_Note_pdf.pdf [Accessed February 22, 2012].

- Murphy, S., D. Burch and J. Clapp. 2012. *Cereal Secrets: The World's Largest Grain Traders and Global Agriculture*, Oxford: Oxfam International.
- Prasad, M. 2012 *The Land of Too Much: American Abundance and the Paradox of Poverty*, Cambridge, MA: Harvard University Press.
- Sachs, J., McArthur, J.W., Schmidt-Traub, G., Kruk, M., Bahadur, C., Faye, M. and McCord, G. 2004 'Ending Africa's Poverty Trap', *Brookings Papers on Economic Activity* 2004(1): p.117–240.
- Sanders, E. 1999 *Roots of Reform: Farmers, Workers, and the American State, 1877-1917*, Chicago: University of Chicago Press.
- Taylor, M. 2012 'The Antinomies of 'Financial Inclusion': Debt, Distress and the Workings of Indian Microfinance', *Journal of Agrarian Change* 12(4): p.601–610.
- Tett, G. 2009 *Fool's Gold: How the Bold Dream of a Small Tribe at J.P. Morgan Was Corrupted by Wall Street Greed and Unleashed a Catastrophe*, New York: Free Press.
- Tilburg, R. van and Vander Stichele, M. 2011 *Feeding the Financial Hype: How Excessive Financial Investments Impact Agricultural Derivatives Markets*, Amsterdam: SOMO.
- Turner, A.H. 1949 'Federal Marketing and Price Support Legislation in Canada', *Journal of Farm Economics* 31(4): p.594–609.
- Varangis, P. and Larson, D. 1996 'Dealing with Commodity Price Uncertainty', *World Bank Policy Research Working Paper* (1667). Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=620615 [Accessed February 6, 2013].
- Vermeulen, S., and Cotula, L. 2010. 'Over the Heads of Local People: Consultation, Consent, and Recompense in Large-scale Land Deals for Biofuels Projects in Africa', *The Journal of Peasant Studies*, 37(4) p.899-916.
- Weis, T. 2010. 'The Accelerating Biophysical Contradictions of Industrial Capitalist Agriculture', *Journal of Agrarian Change* 10(3): p.315–41.
- Winson, A. 1992 *The Intimate Commodity: Food and the Development of the Agro-Industrial Complex in Canada*, Toronto: Garamond Press.
- Wolff, H.W. 1910 *People's Banks: A Record of Social and Economic Success* 3d ed., London: P. S. King & son.
- World Bank 2012 'Africa Can Help Feed Africa Removing Barriers to Regional Trade in Food Staples', Available at: <http://siteresources.worldbank.org/INTAFRICA/Resources/Africa-Can-Food-Africa-Report.pdf> [Accessed November 24, 2012].
- Worthy, M. 2011 *Broken Markets: How Financial Market Regulation Can Help Prevent Another Global Food Crisis*, London, UK: World Development Movement. Available at: <http://www.wdm.org.uk/Broken-markets.pdf>.