

The US financial crisis: lessons for theories of institutional complementarity

John L. Campbell*

Department of Sociology, Dartmouth College, Hanover, NH, USA and International Center for Business and Politics, Copenhagen Business School, Copenhagen, Denmark

*Correspondence: john.l.campbell@dartmouth.edu

Many comparative political economists hold that market performance depends on the presence of institutional complementarities. Some argue that when institutions reinforce similar incentives markets work best. Others disagree and argue that for markets to function well institutions must compensate for each other's shortcomings rather than reinforce each other's incentives. This paper uses evidence from the US financial crisis of 2008 to adjudicate this debate. It argues that different types of institutional complementarities are necessary in combination to ensure market stability and successful economic performance. Without such balance, complementarities that are beneficial for a while may go wrong later. In this regard, the paper also draws attention to the dynamic and historically specific nature of institutional complementarities.

Keywords: economic sociology, political economy, financial crisis, USA

JEL classification: G01 financial crises, P10 capitalist systems

1. Introduction

Many people have offered explanations for the catastrophic US financial crisis of 2008. Most now agree that one of the principal causes was a series of institutional failures in how the financial services industry was governed (Krugman, 2009; Tett, 2009; Stiglitz, 2010). As a result, the Obama administration proposed and Congress passed a number of institutional reforms to guard against similar crises in the future. Indeed, comparative political economists and others have long recognized that the institutional configuration of financial markets bears directly on their performance (e.g. Zysman, 1983; Cox, 1986; Davis, 2009).

This paper argues that there are several lessons in the financial crisis for institutional analysis. In particular, the financial crisis provides an opportunity to adjudicate an important debate in comparative political economy about institutional complementarity. Institutional complementarity is a concept that has

received much attention from scholars trying to explain variation in national economic performance. Institutions are formal and informal rules and their enforcement mechanisms that are found in the public and private sectors (Campbell, 2004). Generally speaking, institutional complementarity refers to the interdependence of institutional influences on people's behaviour. Many political economists argue that market performance depends on the presence of institutional complementarities. The idea is that the more complementary a set of institutions is the better will be a country's economic performance (e.g. Hall and Soskice, 2001; Amable, 2003; Crouch, 2010). However, there are two particularly important and competing explanations about why this is so.

One theory is that complementarity arises when two or more institutions align and reinforce firms' incentives thereby producing economic gains that would not otherwise occur (e.g. Amable, 2003, p. 60). This view is most closely associated with the so-called varieties of capitalism school of comparative political economy (Hall and Soskice, 2001; Molina and Rhodes, 2007). For instance, so-called liberal market economies like the USA tend to have institutions that sharpen market competition, such as limited financial regulation, strong anti-trust law and decentralized labour markets, which create incentives for radical product innovations that enhance economic competitiveness. Notably, incentives for marketing corporate securities may be enhanced by regulations mandating a fuller exchange of information about companies (Hall and Soskice, 2001, pp. 17–18). Coordinated market economies like Germany tend to have institutions that encourage cooperation, such as industry-based wage determination, codetermination law and looser anti-trust laws, that encourage workers and employers to join forces in ways that enhance competitiveness through diversified quality production (Soskice, 1999). Complementarity here is based on *reinforcement*—when institutions reinforce similar incentives markets work best. Conversely, it is argued that if institutions create contradictory incentives about how firms should behave then economic competitiveness suffers.

Another theory of institutional complementarity is based on the notion of *compensation*. This is perhaps the most common usage among institutionalists (Crouch, 2005b, p. 360). Polanyi (1944) argued famously that market institutions create incentives for firms to pursue their self-interest but that doing so in unbridled fashion will destroy the economy. Hence, political institutions, such as environmental and labour law, must create compensatory incentives that lessen extreme self-interested behaviour. In Germany laws protecting worker rights, for instance, create incentives that militate against incentives for the excessive exploitation of workers, which might jeopardize beneficial labour-management relations (Streeck, 1997). But compensation is not just about incentives. It also refers more generally to situations where one institution simply makes up for the deficiencies of another. For instance, Denmark's famous

flexicurity institutions enable private employers to easily fire workers but also provide workers with welfare, training and job relocation programmes that help them at such times in ways that improve national economic performance (Campbell and Pedersen, 2007). The point is that for markets to function well institutions must compensate for each other's shortcomings rather than reinforce each other's incentives (Crouch, 2005a, ch. 3, 2010).¹

The evidence about this debate points in both directions. Some research finds that national political economies perform better if their institutions consistently reinforce actors' incentives, whereas institutional arrangements that send conflicting signals undermine performance (Hall and Gingerich, 2004). Other research disputes this claim and shows that political economies with more mixed institutions perform just as well as purer cases (Kenworthy, 2006) and that institutional compensation may be an important key to successful political-economic performance (Campbell and Pedersen, 2007).

This paper argues that this debate can be reconciled if we remember that history and context matter.² It does so by examining the US financial crisis, which provides evidence to support both positions in the debate. Institutional complementarities reinforced product innovation and risk taking in the financial services industry in ways that helped spur booming markets for mortgage-backed securities, credit default swaps and other investment products, which contributed to the industry's impressive economic performance during the 1990s and early 2000s. At the same time, however, compensatory institutions that might have counterbalanced these behaviours were scaled back. As a result, opportunistic risk-taking escalated to a point where it became excessive and contributed to the industry's failure in 2008 after the national housing market collapsed. Efforts are now underway to prevent more crises in the future by rebalancing these two types of institutional complementarity.

As we shall see, several lessons follow from this episode. First, different types of institutional complementarity can coexist together and are necessary in order to ensure market stability over time. Second, institutional complementarities do not stem from functional imperatives but from trial and error experimentation, learning and political struggle. Third, institutional complementarities are

¹Some have suggested other types of institutional complementarities, which are often simply variations on the two basic types presented here (e.g. Boyer, 2005a; Crouch, 2005a, ch. 3, 2010). But the core debate in the literature about the effects of institutional complementarity on economic performance remains that between reinforcement and compensation. Thus, Crouch (2005a, p. 55) boils the debate down as follows: 'The logic of strict complementarity is that certain efficiencies are achieved when balancing or contrasting characteristics are found alongside each other: the advantages of the mongrel over the pedigree animal.'

²Another possibility, not discussed here, for adjudicating the debate is that methodological problems may undermine one side or the other (e.g. Crouch, 2005b, p. 363; Kenworthy, 2006).

sometimes developed intentionally but they can also occur serendipitously. Fourth, the positive effects of institutional complementarity are not guaranteed. Complementarities can go wrong because they are historically and contextually contingent. Positive effects can deteriorate into crisis—sometimes rapidly—as a result of poorly balanced complementarities and the discovery and opportunistic exploitation of complementarities. Finally, economic crises may arise organically from the nature of institutional complementarities themselves.

The paper proceeds as follows. I begin with a brief overview of the events of 2008 that constituted the financial crisis. This story is well known. But it just scratches the surface because it is only a story of proximate causes that neglects the deeper institutional roots of the crisis. Second, I expose these roots and show that they reach deep into the mortgage markets and the broader financial services industry. This is largely an account of institutional reforms that developed slowly over several decades. It is also a tale about the development of a set of institutional incentives that consistently encouraged and reinforced excessive risk taking with little regard for the potentially calamitous downsides. Finally, I elaborate the lessons of the story for theories of institutional complementarity.

Several clarifications are important. First, the crisis was not entirely due to institutional factors. Among other things, intellectual hubris among those who invented new investment products (Patterson, 2010), shifts in economic theory favouring a *laissez-faire* approach to regulating capital markets (Skidelsky, 2009), an unrealistically optimistic Wall Street culture (Tett, 2009), the availability of foreign investment capital (Münchau, 2010) and egotistical beliefs among Wall Street insiders (Sorkin, 2009) all played roles. But because most observers agree now that institutions were among the most important causal factors they are the focus of this paper (Krugman, 2009; Skidelsky, 2009; Stiglitz, 2010). Second, there is an international side to this story—Britain and Ireland, for example, witnessed some of the same developments and problems as the USA. But an analysis of that is well beyond the scope of this paper. Third, my purpose is not to explain the political and economic origins of all the institutions involved in the financial crisis but to identify their effects. Fourth, I am not arguing for institutional determinism. Many of the institutions discussed here created and reinforced incentives such that the probability of a financial crisis occurring was significant. But it was not inevitable. People may choose to do things other than what institutional incentives suggest. In the end, however, these incentives were strong enough to contribute in important ways to the crisis. Finally, part of this story is about regulatory reform. But it is important to remember that it is not a story about deregulation—that is, the complete removal of regulations from the financial markets. Instead, it is largely a story about reregulation where reforms were instigated but a regulatory structure remained very much in place.

2. Overview of the crisis

As is well known, the catalyst for financial crisis was the collapse of a bubble in the US housing market and a rapid decline of housing prices beginning in late 2006. The growth of this bubble was driven in part by the increased availability of risky *subprime mortgages*.³ When the housing bubble burst, people began to default on their loans in record numbers, especially those with subprime mortgages. This reverberated rapidly through the financial services industry. To begin with, many large mortgage companies failed including the Federal National Mortgage Association (Fannie Mae) and the Federal Home Mortgage Corporation (Freddie Mac), two giants that were taken over by the government, and Countrywide, which was bought by the Bank of America in a deal orchestrated by the government.⁴

Because many risky subprime mortgages were bundled with other loans as *mortgage-backed securities* and sometimes as more general *asset-backed securities* (also known as derivatives) and sold to banks and other investors, the collateral damage was unprecedented.⁵ Banks holding these securities began to fail. In March 2008, Bear Stearns was taken over by the Federal Deposit Insurance Corporation and sold to J. P. Morgan Chase. Washington Mutual succumbed to a similar fate a few months later. Other large banks also failed and were bought up. Finally, Lehman Brothers went bankrupt after the government decided not to bail it out due to concerns of creating a moral hazard. As a result, the markets for mortgages and mortgage-backed securities began to seize up as concerns about the risky nature of these financial products started coming to light. In turn, mortgage firms and banks began to tighten their lending practices. Credit markets began to freeze up.

Next, the American International Group (AIG) nearly collapsed. Just prior to the crisis it was the world's largest insurer. Many banks had purchased *credit default swaps* from AIG in case the mortgage-backed securities they held

³Subprime mortgages are those made to borrowers with poor credit histories and financial profiles.

⁴Fannie Mae and Freddie Mac are stockholder-owned corporations chartered by Congress as government-sponsored enterprises whose purpose is to purchase and securitize mortgages in order to ensure that funds are available to the home mortgage markets.

⁵A mortgage-backed security is a type of asset-backed security. An asset-backed security is a financial product that is tradable like a stock or bond and whose value and income payments are derived from and backed by a bundle of underlying assets, such as a group of mortgages. Bundling allows the risk of investing in the underlying assets to be diversified because each asset-backed security sold represents a fraction of the total value of the bundle of underlying assets. Asset-backed securities are typically underwritten by an investment bank, which selects the assets that constitute the security, sizes the pieces (or tranches), and hires a credit rating agency to rate each tranche.

turned sour as a result of mortgage defaults.⁶ So when mortgage defaults mounted, AIG was faced with the threat of an unprecedented number of claims being filed simultaneously against the swaps it had sold. Hence, AIG's credit rating was downgraded and it found itself unable to raise enough new capital to cover its potential losses. Its stock value plunged. Concerned that AIG's failure would bring down other banks and investment firms the government provided an \$85 billion loan in exchange for a 79.9% equity stake in the company—a bailout that eventually totalled \$182 billion by March 2009. But the crisis continued to escalate. Because many subprime mortgages had been bundled with other forms of debt and sold to investors many times over, nobody knew where they all were, who owned them, or how many of them were in danger of default. And now nobody could be sure that the swaps they had purchased would cover the losses they might incur. As a result, banks and other lenders further tightened their lending in order to keep as much capital on hand as possible. Credit markets continued to freeze up.

Lehman Brothers' bankruptcy amplified all of this by destroying confidence in money market funds and, in turn, the commercial paper market. Money market funds invest mainly in commercial paper, which are very short-term loans that businesses frequently take out to finance things like inventories and payrolls while waiting for payment from customers. The commercial paper market greases the day-to-day operation of the economy. One of the biggest funds, the Reserve Primary Fund, had invested heavily in Lehman Brothers debt. So after Lehman collapsed money market deposits at Reserve Primary rapidly began to lose value—something that almost never happens. Investors began pulling their money out of Reserve Primary and then similar mutual funds. Concerned that a run on the money markets could destroy the commercial paper market and bring the entire economy to its knees, the Federal Reserve Board intervened by providing liquidity to money market investors thereby insuring all money market deposits. Nevertheless, money market fund managers had been spooked and grew exceedingly cautious in lending. Hence, even quite healthy businesses began to see their lines of credit dry up as a general liquidity crisis gripped the economy. The economy had been in recession since late 2007 but now it headed towards a depression until the government intervened with an assortment of massive financial bailout and stimulus packages in late 2008 and 2009. As we shall see, institutional complementarities helped precipitate the crisis.

⁶In effect, swaps are like an insurance policy that people buy to hedge against the possibility that the bond or asset-backed security they own will default. Swaps are also bundled, tranching and traded in the asset-backed securities market.

3. Institutional complementarities and risk taking

The origins of precarious mortgage debt, which helped pump up the housing bubble, stretch back to the 1970s when US industries began to face increasing competition from abroad for the first time since the Second World War. American manufacturers were losing domestic and international market share at an alarming rate in many core industries (Zucker *et al.*, 1982, ch. 1). And foreign competition made it increasingly difficult for these firms to pass along rising labour, energy and other costs to consumers through higher prices because doing so would have risked further erosion of market share (Ferguson and Rogers, 1986). So corporations sought to better control these costs. One way was to limit the growth of wages and benefits paid to workers, which led directly to wage stagnation in middle and working class families and in turn the need for these families to borrow (Harrison and Bluestone, 1988).

From 1947 through 1973 inflation adjusted median family income grew on average in the USA about 3.0% annually but slowed dramatically after that and was less than 1% during much of the time between 1974 and 2003. Families in the upper quintile of the income distribution fared much better than the rest, which is one reason why income inequality increased since the 1970s (Leicht and Fitzgerald, 2007, pp. 52–53). Wage stagnation made it increasingly difficult for many middle and working class families to maintain the standard of living that their parents' generation had enjoyed (Mishel *et al.*, 2005, p. 42). One way to do so was to borrow money. Household debt rose from just under 80% of disposable income in 1986 to 140% by 2007. Much of this increase was due to rising mortgage debt, which soared from about 40% of household debt in 1975 to almost 80% by 2000 (Leicht and Fitzgerald, 2007, ch. 3). Homeowners were refinancing and taking out second mortgages to supplement their income and in some cases to consolidate and pay off other debts (Davis, 2009, pp. 143, 228). But why were American families able to borrow so much money when, given their increasingly more tenuous earnings stream, their ability to repay that debt would seem to have become ever more questionable? This was because institutional complementarities evolved that encouraged and reinforced risky borrowing and lending practices.

3.1 *The mortgage markets*

The ability of Americans to buy mortgages received several incremental institutional boosts after the Second World War. First, in the 1960s the Johnson administration organized Freddie and Fannie to lend money and hold mortgages. It also created a third government agency, Ginnie Mae, to insure those mortgages against the risk of default. The idea was to stimulate growth in the housing market

but without having the government hold mortgages for too long. Hence, in 1970 Fannie and Freddie invented and began issuing mortgage-backed securities in cooperation with the financial services industry. Second, however, it was not until years later that the market for mortgage-backed securities began to flourish. This was because the savings and loan industry continued to have control over the bulk of the mortgage market until the industry collapsed in the 1980s and because bundling and securitizing mortgages required changing the tax laws. This happened with the 1986 Tax Reform Act, which permitted use of mortgage-backed securities without a variety of old tax and accounting problems and therefore made them more flexible and attractive to traders (Quinn, 2008; Fligstein and Goldstein, 2010). Third, until 1986 homeowners could deduct from their income taxes the interest paid on their mortgages as well interest for other forms of consumer debt. The 1986 Act was also important in this regard because it eliminated the latter deduction but allowed an unlimited interest deduction for mortgages on both first and second homes (Conlan *et al.*, 1990, p. 265). This created additional incentives for people to take out second mortgages and home equity loans as a way to finance their spending and still receive an interest deduction. In short, incentives for mortgage borrowing were gradually increased and reinforced by institutional changes in the mortgage market.

However, it was not until two additional regulatory changes occurred covering Fannie and Freddie that the much riskier subprime mortgage market took off in the early 2000s. First, they began purchasing huge swaths of subprime mortgages, which provided a market for the subprimes that banks and mortgage companies would issue but want to get rid of. This was an institutional response to renewed political pressure from Washington where politicians wanted to expand the availability of 'affordable' housing for the financially strapped middle and working classes. It created incentives for mortgage lenders to make these risky loans because they could turn around and sell them to Fannie and Freddie. Second, the George W. Bush administration capped the amount of mortgage lending that Fannie and Freddie themselves could do. In effect this limited the amount of competition government sponsored entities like these could pose in the mortgage markets, which created additional incentives for private lenders to enter the market and peddle risky subprime mortgages (Gramlich, 2007; Ellis, 2008).

Contributing further to risk taking, private mortgage companies institutionalized norms that encouraged loan officers to lend to risky borrowers in order to boost profits and salaries. For example, people who approved mortgage applications and who worked at many big mortgage companies and banks that were engaged in subprime mortgage lending faced intense pressure from management to approve mortgages despite having concerns about the quality of the loans. Moreover, in the subprime market in order to boost profits some companies

adopted deceptive and otherwise predatory lending practices, which were not defined clearly in existing statutes and thus largely unregulated. Such practices were especially prevalent in low income, Hispanic and African American neighbourhoods (Apgar and Calder, 2005). Volume became paramount and risky loans were pushed through because they were profitable. This was because even the riskiest mortgages could be packaged as asset-backed securities and sold to investors leaving the company free of losses if there was a default. If loan officers resisted pressure to approve risky mortgages, as they did occasionally, then they were punished and in some cases fired (MacKenzie, 2008; Morgenson, 2008).

Compounding these effects, practices like these were embedded in a wider set of institutions that further facilitated shoddy mortgage lending practices. To begin with, unlike many countries the USA allowed generic credit reports to be widely shared, such as the well-known FICO score, which represents a numerical assessment of an individual's overall creditworthiness. These scores were initially developed to guide lending in credit card and other types of short-term debt markets. Because it was cheaper to rely on these scores than to conduct a mortgage-specific credit check, mortgage lenders became less likely to do their own credit assessments and more likely to use these generic scores for evaluating prospective borrowers. The problem was that these scores were not always reliable indicators of long-term creditworthiness for mortgages. Furthermore, independent mortgage companies were under much less regulatory authority than traditional mortgage lenders, such as commercial banks. For instance, in 1982 the Alternative Mortgage Transactions Parity Act allowed non-federally chartered mortgage companies to write adjustable-rate mortgages that were sold to subprime customers. These riskier mortgages eventually replaced many safer fixed-rate mortgages that had long been the norm in the industry. Finally, in 2004 the Office of the Comptroller of the Currency passed rules by which federally regulated lenders were freed from state regulations, which were often stricter than federal ones (Ellis, 2008).

Moreover, during much of the 1990s and early 2000s the Federal Reserve Board maintained low interest rates. Nowhere was this more evident than in the housing market where mortgage rates were very low—although subprime rates were still several points higher than conventional mortgages. Through low interest rates the government reinforced the incentives for families to incur more mortgage debt.

In sum, several institutional factors accumulated historically and happened to create complementarities that ramped up and reinforced incentives for riskier borrowing and lending in the mortgage markets. These included the establishment of several government sponsored enterprises operating in the mortgage markets; Fannie and Freddie's move to buy more subprime mortgages; regulatory limits to their lending that created an opportunity for more private lenders to

enter the mortgage market; mortgage company compensation structures that encouraged riskier and even predatory loan making; and increasing reliance by these companies on generic credit reports. Furthermore, changes in the tax treatment of interest on consumer loans encouraged consumers to take advantage of the supply of mortgage credit being offered especially when the Fed kept interest rates low. At the same time reforms exempting some lenders from more rigorous state-level regulations and legislation permitting mortgage companies to sell adjustable-rate mortgages reduced institutional complementarities that might otherwise have compensated for some of this risky lending. However, the escalation of riskier behaviour in the mortgage markets was reinforced further by another set of institutional complementarities developing in the broader financial services industry that put increasing sums of money at the disposal of mortgage lenders in the first place.

3.2 *The financial services industry*

To begin with, in 1970 the New York Stock Exchange repealed a rule preventing investment banks from selling shares of the company on the exchange. Selling shares publicly created an opportunity for their top managers to be paid in stock options. This and the need to keep shareholders happy created strong incentives for bank executives and the traders and analysts who worked for them to maximize short-term profit even if this entailed taking risks that could have serious downside repercussions in the long term (*The Economist*, 2009a, p. 16; Guerrero, 2009). This exacerbated the incentives for riskier but potentially lucrative investment decisions (Stiglitz, 2003, ch. 3; Surowiecki, 2008). Some of these investments were in new products like asset-backed securities. Moreover, the amount of money these firms could borrow to leverage their investments increased now that they could increase their capitalization by selling company stock on the exchange. As a result, the aggregate debt of the US financial sector jumped from 22 to 117% of GDP between 1981 and late 2008 (*The Economist*, 2009b; Wolf, 2009).

The propensity for riskier behaviour was exacerbated further by institutional reforms in banking regulation. The Supreme Court ruled in 1978 that banks and other lenders could charge interest rates whose ceilings would be limited only by the usury laws in their home state even if they operated in other states with lower ceilings (Ellis, 1998). Expanding on this decision 2 years later, President Carter signed legislation that phased out interest rate ceilings altogether and eliminated state usury ceilings for residential mortgages and other bank loans (*Federal Reserve Bank of Boston*, 1980). This helped spur the market for all sorts of lending, such as adjustable-rate subprime mortgages, with no legal limit on the interest charged. Risks increased all around because high or suddenly increased

interest rates could trigger loan defaults for lenders and bankruptcy for borrowers (Strahan, 2002; Leicht and Fitzgerald, 2007, ch. 4).

Arguably the most important institutional reform in banking involved the Glass-Steagall Act. This law had separated insurance, commercial and investment banking services since 1933 in order to mitigate excessive risk taking and opportunism in the banking industry, which were viewed as causes of the Great Depression. It was repealed in 1999 by the Financial Services Modernization Act—legislation that was driven politically by a desire to let banks diversify and grow in order to compete effectively in international markets (Stiglitz, 2003, p. 160). Following its passage several huge financial service mergers occurred (Bank for International Settlements, 2008). In the end, the Act facilitated the rapid growth of the so-called *shadow banking system*, which was populated by large financial companies that channelled funds from investors to corporations through new products, such as asset-backed securities and credit default swaps. Examples of organizations in the shadow banking system include investment banks like Bear Stearns and Lehman Brothers; money market funds like the Primary Reserve Fund and other non-bank financial companies like hedge funds. By 2008 the assets held by the US shadow banking system exceeded the \$10 trillion held by the traditional banking system. Perhaps more significant in terms of the crisis, the shadow banking system did not accept deposits like a commercial bank and, therefore, was not subject to the same safety and soundness regulations as traditional banks, such as capitalization requirements (Geithner, 2008; *The Economist*, 2009a, p. 18; Wolf, 2009). In sum, several regulatory reforms undermined the type of institutional complementarities that might have compensated for excessively risky banking behaviour.

Similarly, several changes in securities regulation opened up new and riskier credit markets. The SEC issued regulations that fostered the development in the 1990s of booming markets for asset-backed securities. About 70% of this market, which was composed of \$6.6 trillion of tradable securities in 2002, involved mortgage-backed securities issued primarily by Fannie and Freddie. Issuing mortgages and other loans became more attractive as traders could buy and sell bundles of securitized mortgages. As we have seen, this created incentives for lenders to make more credit available to prospective borrowers—even borrowers with poor credit histories (Leicht and Fitzgerald, 2007, ch. 5).

The government also decided not to regulate the asset-backed securities market. As the complexity of these products grew concerns mounted that they involved substantial risk that was exceedingly difficult to evaluate. Calls for their regulation grew on President Clinton's watch as Brooksley Born, chair of the Commodity Futures Trading Commission, voiced strong concern over the dangers of unregulated asset-backed securities trading. However, Fed chairman Alan Greenspan, SEC chairman Arthur Levitt and Treasury Secretary Robert

Rubin all argued successfully against regulation, which they believed would undermine the efficiency with which they assumed these new and lucrative markets were operating (Wade, 2008, p. 14). So in 2000 Clinton signed the Commodities Futures Modernization Act, which explicitly preempted many of these markets from government regulation. In particular, it excluded from regulatory oversight credit default swaps for which by late 2008 there was a \$60 trillion market world-wide (Cox, 2008; Morgan, 2008). It is reasonable to assume that without swaps, prospective buyers would have been much less likely to have purchased asset-backed securities. So the decision not to regulate swaps made it even easier for companies to issue them and therefore contributed further to the growth of the asset-backed securities market. All of this meant that credit continued to flow more and more easily and especially to the housing market because investors could buy swaps from companies like AIG thereby absolving themselves of responsibility for the financial risks associated with investing in asset-backed securities—or so they thought (*The Economist*, 2009a, p. 20).

In 2004 the SEC further reinforced the availability of consumer and mortgage credit as well as riskier investments by securities firms and investment banks by easing the capitalization requirements of these companies.⁷ The SEC now allowed firms to shift capital from safer to riskier and potentially more profitable investments. Under the old rules, securities firms had to reserve a set percentage of every dollar of capital at risk to ensure solvency in the event of a market collapse or failure of a major client. The new rules let firms use non-cash assets, such as asset-backed securities, to offset risk. This freed up more capital to use as collateral in order to borrow money for leveraging investments. Prior to the change the leverage ratio was about 12–1 for the industry but afterwards it shot up to about 33–1 (Onaran, 2007; Blinder, 2009). Overall, then, several institutional reforms in securities regulation reinforced one another in ways that further ramped up incentives for riskier investment behaviour.

Underlying much of the shift towards riskier and more highly leveraged investments was a problem with evaluating the risk involved in the new and complex financial products like asset-backed securities. Investment firms have risk managers who are responsible for evaluating the risks associated with their firm's investment prospects. Although some of them began warning about the risky nature of the investments being made, they lacked the clout of the traders who were making fortunes for their firms by dealing in these exotic securities. Traders' livelihoods depended on finding new ways to make money as did the competitive advantage of their firms. So as incentives to engage in these new and extremely lucrative financial products mounted the warnings of risk

⁷The regulation is known as 'Alternative Net Capital Requirements for Broker-Dealers That Are Part of Consolidated Supervised Entities' (RIN: 3235-A196).

managers were often ignored (Dash and Creswell, 2008; Nocera, 2009). Moreover, due to the mathematical assumptions involved, the risk assessment models most firms used tended to grossly underestimate the odds of a catastrophic change in markets, such as a nation-wide collapse of housing prices. As a result, most corporate managers remained sanguine about the perils of asset-backed securities, credit default swaps and the like (*The Economist*, 2009a, p. 13; Patterson, 2010).

Making matters worse, independent-securities-rating agencies like Moody's, Standard and Poor's and Fitch encouraged the proliferation of mortgage-backed securities by publishing what turned out to be wildly optimistic assessments of their quality. Part of the problem was that the credit rating agencies faced a conflict of interest: they were paid by the issuers of the securities that they were supposed to be rating independently. These conflicts were not always managed properly (Carruthers, 2010). This is one reason why in late 2006 Congress passed legislation that ended a century of self-regulation by the credit rating agencies and gave the SEC jurisdiction over them. Unfortunately, this did not take effect until after the agencies had issued the ratings that contributed to the financial crisis. And it was not until December 2008 that the SEC adopted regulations governing credit rating agency transparency, competition and accountability (Casey, 2009). Hence, institutionalized practices inside and outside investment firms created complementarities that encouraged increased risk taking.

To review, a set of incremental public and private institutional reforms made more money available to the mortgage markets. They did so by creating institutional complementarities that reinforced incentives that gradually increased the amount of risk that securities originators and investors were willing to take. They also did so by reducing institutional complementarities that might otherwise have compensated for such opportunistic behaviour. For example, exempting sales of credit default swaps from regulation helped allay concerns about trading asset-backed securities like bundles of subprime mortgages. The SEC's decision to ease capitalization requirements allowed firms to make a larger number of riskier investments. And the lack of credit rating agency regulation combined with an institutionalized disregard for in-house risk managers contributed to inadequate risk assessment of the new asset-backed securities. But institutional reforms also encouraged the formation and development of some of these markets in the first place. Notably, regulatory reform facilitated the development of the shadow banking system, which invented many of the risky investment products central to the story. New SEC securities regulations also helped spawn these markets. So did the Commodities Futures Modernization Act, which gave rise to a lucrative market for credit default swaps. In the end, all of these reforms created institutional complementarities that put the financial services industry in an increasingly precarious position. As a result, when the

housing market collapsed it pushed this industry and much of the rest of the economy into a tail spin.

Within months the Obama administration announced several institutional reforms in the financial markets (*The New York Times*, 2009). These included, among other things, increasing the capitalization requirements of banks; mandating that any firm issuing asset-backed securities be obliged to purchase at least 5% of them itself; and establishing a Financial Services Oversight Council to assess emerging risks in the industry. In addition the administration wanted to establish a 'resolution authority' that would give regulators the ability to seize and dismantle any financial firm that it deemed systemically dangerous—that is, big enough so that its failure could jeopardize the entire financial system. It also wanted to set guidelines to better align the interests of corporate managers with long-term shareholder interests; form a consumer finance protection agency and regulate the asset-backed securities and credit default swap markets. All of this was intended to mitigate excessive risk taking and avoid further crises in the future. In effect, the Obama administration recognized that institutional complementarities had emerged in the mortgage markets and financial services industry that had become too effective over the years in encouraging and reinforcing excessive risk taking. The administration set a course of reform designed to create a new set of institutional complementarities that would guard against this. In other words, it recognized the need for some institutions to compensate for the shortcomings of other institutions.

4. Theoretical lessons about institutional complementarities

Many political economists hold that market performance depends on the presence of institutional complementarities. Some argue that when institutions reinforce similar incentives markets work best. Others disagree and argue that for markets to function well institutions must compensate for each other's shortcomings rather than reinforce each other's incentives.

The US financial crisis provides evidence supporting both arguments about complementarity. On the one hand, from the late 1960s through the early 2000s reforms accumulated that created institutional complementarities that reinforced incentives for increasingly innovative yet risky behaviour in the mortgage market and financial services industry. And for a while the results were impressive. Especially during the 1990s and early 2000s major financial product innovations occurred, home values rose dramatically and the financial services industry's profitability soared. Furthermore, homeownership was extended to more low-income households. On the other hand, institutional complementarities that might have compensated for and counterbalanced such risk taking were either undermined or never developed in the first place. As a

result, the collapse of the housing bubble in 2006 and 2007 triggered the worst financial crisis and recession since the Great Depression.

What lessons does all of this hold for theories of institutional complementarity? To begin with, there are two basic types of complementarity and both can have positive effects on economic performance when they are combined. Arguably, had a more balanced set of complementarities been in place that reinforced incentives encouraging innovation and risk taking but that also compensated for and counterbalanced such behaviour the crisis could have been avoided. That is certainly the Obama administration's belief and its hope for the future.

With this in mind, however, we must avoid the problem about which [Crouch \(2010, p. 123\)](#) warns. That is, we must not move arbitrarily between opposing logics—institutional reinforcement and institutional compensation—thereby making arguments about particular cases that seem plausible but that may not be vulnerable to counter-factual or empirical testing. Instead, he argues that we must acknowledge that both types of complementarity coexist in the world and then begin to think about how they relate to each other. Following [Aoki \(2000, 2001; see also Carruthers et al., 2001\)](#), he advocates an approach that begins with the notion that there are *markets for institutions* whereby if one institution grows there is often increased demand for others that help to sustain it. For Crouch (p. 124), different institutions are brought together in this way, not because they automatically remedy defects in each other (i.e. compensation), nor because they necessarily embody some kind of similarity or affinity with each other (i.e. reinforcement), but because actors build them in attempts to produce political-economic stability. As economic sociologists have argued, market stability is of paramount importance for economic actors and an important precondition for profit making ([Fligstein, 2001; Halliday and Carruthers, 2009; see also Kolko, 1963](#)).

The Obama administration has expanded the market for institutions in this case by persuading Congress to build new institutions that will hopefully provide the complementarities necessary to stabilize the mortgage market and financial services industry going forward. After decades during which institutional complementarities evolved that reinforced the invention, buying and selling of increasingly risky financial products, and less and less regard for compensating for those incentives, the government now seeks to create institutional complementarities that will better counterbalance risk-taking excesses. This is a stabilization project designed to more effectively balance institutional reinforcement and compensation. The idea is not to eliminate innovation and risk, but to tone it down to a point where it does not get out of hand and threaten the entire system. It also underscores the need for a more dynamic definition of institutional complementarity that acknowledges how a particular institutional form in one area might lead eventually to the adoption of a particular reinforcing

or compensatory institutional form in another area in an effort to resolve institutional tensions or contradictions (e.g. Amable, 2003; Amable *et al.*, 2005, p. 63; Crouch, 2005*b*; Höpner, 2005, pp. 341–342).

The notion of a market for institutions designed to ensure stability is also useful because it helps us avoid the potentially functionalist trap attributed occasionally to some theories of institutional complementarity, which suggest that political economies tend to have coherent sets of institutions whereby a certain type of institutional coordination in one sphere of the economy develops complementary—that is, reinforcing—institutions in other spheres (Hall and Soskice, 2001, pp. 17–18; see also Hancke *et al.*, 2007, p. 11). Critics charge that these accounts may be functionalist insofar they explain the existence of institutions in terms of their outcomes rather than their initial causes (Streeck, 2005; Crouch, 2010; but see Hall, 2005). The market for institutions approach avoids functionalist logic because such a market involves trial and error experimentation, learning and power struggles that do not guarantee either functional or stable institutional outcomes (Campbell and Lindberg, 1991; Fligstein, 1996). As such, this approach is entirely consistent with recent scholarship on institutional change, which argues that institutional ensembles tend to evolve incrementally in somewhat haphazard ways rather than according to a master plan or functional logic (e.g. Campbell, 2004; Mahoney and Thelen, 2009). In this case, market actors struggled to create several important institutions. For instance, repeal of Glass-Steagall was spearheaded in Congress by Phil Gramm, a conservative member from Texas, who had to fend off many political opponents who were against the bill. Calls for regulating the asset-backed securities and swaps markets in the 1990s were defeated by powerful figures in the Clinton administration who advocated for the Commodities Futures Trading Act, which explicitly exempted these markets from regulation. Norms favouring risk taking were institutionalized within mortgage companies and investment firms despite opposition from risk managers and other insiders. In all of these cases the market for institutions involved conflict and struggle. There was nothing automatic about the outcomes. And, as it turned out in the long run, these reforms ended up being dysfunctional for the system.

What this underscores, of course, is that politics matter, when it comes to institutional change. A full-blown analysis of the politics behind the many reforms discussed here is well beyond the scope of this paper. But it is important to note that many of them were driven by the rise of neoliberalism as the guiding light for US regulatory policy beginning in the late 1970s. And in several important cases the financial services industry lobbied hard for these reforms (Stiglitz, 2010). This has also been the case after the crisis as the Obama administration moved to reform the industry's regulatory structure. The financial services industry mobilized one of the fiercest lobbying campaigns in recent memory to neuter

many of the administration's proposals.⁸ In some areas the industry won. And where it did not the industry turned its attention to the rule-making process that will be run by federal regulatory agencies with new oversight powers (Appelbaum and Herszenhorn, 2010).

Another lesson is that we should not assume that institutional complementarities are necessarily the result of *intentional* action (Boyer, 2005a; Streeck, 2005). They may also be *unintentional*. To be sure, actors often build individual institutions intentionally. But they do not necessarily strive to create complementarities among institutions intentionally. Indeed, the complementarities that occur among institutions often do so serendipitously. For instance, the government permitted the mortgage industry to use FICO scores to evaluate potential borrowers and invented mortgage-backed securities to help provide housing for middle- and working-class Americans. These two institutional moves were unconnected in terms of their origins but connected serendipitously in terms of their effects insofar as they happened to encourage and reinforce risky lending practices. Whether serendipity is the norm requires further investigation of more cases.

Perhaps the most important lesson from this episode is that institutional complementarities can go wrong. That is, the beneficial effects of institutional complementarity may deteriorate rapidly. And that deterioration may stem from an imbalance favouring one kind of complementarity over another. The financial crisis was born from the gradual development of institutions that encouraged opportunities for risk taking without enough institutional checks against such behaviour. In other words, there was too much institutional reinforcement of a kind and not enough institutional compensation. It is difficult to theorize or predict *ex ante* what the proper balance should be. But as this case makes clear without such balance political economies may suffer severe institutional crises sooner or later. The Obama administration's call for a Financial Services Oversight Council was specifically designed to make such predictions in order to ensure balance and avoid future crises.

But the deterioration of beneficial effects stemming from institutional complementarity is not just a matter of poor institutional balance. It is also a matter of discovery and opportunism, which is to say that intentional action—that is, agency—as well as institutional structure is involved (Hall, 2005; Höpner, 2005, p. 343; Streeck, 2005). As Boyer (2005b, p. 23) argues, crises may stem from an historical paradox whereby a majority of actors gradually discover and opportunistically exploit the benefits of a given institutional complementarity

⁸Firms in the financial services, insurance and real estate sector spent more money than almost any other on lobbying in Washington over the last 10 years. In 2009, the year during which the Obama administration began to really push its financial services reform agenda, this sector spent \$467,314,719 on lobbying in Washington (Center for Responsive Politics, 2010).

to a point of excess at which time the complementary benefits begin to decay and the institutional system falls into crisis. This dynamic was at work in our story. For instance, more and more investment bankers and others discovered that lucrative profits could be made from buying and selling asset-backed securities that were covered by credit default swaps and financed through leverage with funds raised by selling publicly traded company stock. Booming markets for these securities resulted. As we have seen, this opportunity stemmed from the coincidental reform of several institutions including securities regulation and stock exchange rules. And an increasing number of mortgage brokers rushed into the subprime market once they realized that they could unload these risky mortgages on investment bankers who were ready to securitize and sell them to other investors. The escalating bandwagon effects that resulted from these discoveries were at the heart of the financial crisis. The point is that institutional imbalance does not automatically generate crises. To do so it must be discovered and exploited by opportunistic people.

All of this underscores another point that should now be obvious: political-economic crises such as this do not necessarily stem from exogenous shocks as some have suggested (e.g. Krasner, 1984). They can result organically from the unanticipated dynamics of their own institutional arrangements (Campbell, 2004, pp. 33–35). A final and very important example is in order. Unbeknownst to most people involved at the time, as institutional changes unfolded in the financial services and mortgage industries they fostered and reinforced what turned out to be an extremely serious danger well beyond just risky opportunistic behaviour. They facilitated *systemic risk*—that is, risk associated with the increasingly tight financial coupling of individuals and organizations throughout the economy. The invention and proliferation of asset-backed securities and credit default swaps linked together countless investors, investment banks, mortgage companies, money market funds and other organizations such that when the housing bubble burst and mortgage defaults began to mount the financial repercussions cascaded swiftly through virtually all segments of the industry and then the entire economy with devastating consequences. The same institutional complementarities that had encouraged the financial product innovations that had contributed to a booming housing market and soaring profits in the financial services industry also serendipitously created systemic risk. Notably, the repeal of Glass-Steagall removed the institutional firewalls between investment and commercial banking and insurance sales, which gave rise to the shadow banking system. And the Commodities Futures Trading Act paved the way for the bundling and rebundling of asset-backed securities and swaps in ways that linked virtually everyone involved in the shadow banking system (Palmer and Maher, 2010). The complimentary effect of these two institutional reforms proved to be devastating in the long run.

Some might argue that an important advantage of liberal market economies over coordinated market economies is the avoidance of tight coupling like this. One might suppose theoretically that competition in financial markets would yield a wide range of products traded in a decentralized manner by independent buyers and sellers. What the financial crisis shows, however, is that financial markets can be dominated by largely unregulated giant corporations and in turn much tighter—and potentially deadlier—coupling than proponents of liberal market economies expect.

In sum, institutional complementarities take different forms. They emerge from markets for institutions. They are often created unintentionally. They are dynamic not static, which is to say that their effects are historically contingent. They may provide benefits at certain moments but costs at others. And the range of benefits and costs can be extreme as this case demonstrates.

The Obama administration won several reforms in the financial markets to restore institutional balance. This is much in keeping with others who have argued that financial crises often stem from insufficient regulatory oversight, which can lead to excessive opportunism and speculative bubbles that eventually burst and threaten the entire economy (Kindleberger, 1978; Minsky, 1986). Some skeptics of the reform package have charged that it does not go far enough. They say that the proposals fail to restore the separation of commercial and investment banking and do not limit the possibilities of creating and selling new and ever riskier forms of investment products that carry with them the grave possibility of nasty spill-over effects (Morgenson, 2009; Rich, 2009). In any case, enormous political forces have mustered against these proposals. Large and small banks and their trade associations in Washington waged a massive lobbying campaign to kill or water down various parts of the administration's proposals (Labaton, 2009). And a second round of heavy lobbying is already underway in an effort to persuade the federal regulators to go easy on the financial services industry as they write the rules and regulations associated with the new legislation (Morgenson, 2010). And herein lays the problem. The institutional reforms must be implemented as a package if they are to function effectively. For instance, as a *New York Times* (2010, p. 9) editorial observed, 'Resolution authority is important to ensure that regulators can avoid chaotic failures and costly bailouts. But, by itself, it could create a false sense of control and stability. *It will not work unless it is coupled with other reforms*, like robust regulation of derivatives and enhanced consumer protection' (my emphasis). If the new law is gutted during the rule-making phase, all bets are off. But if rule making goes as the administration intends, then the legislation will constitute a new ensemble of institutional complementarities. It would also be an important example of the intentional creation of institutional complementarities from a master plan. Whether this happens, of course, depends on the politics of this particular market for institutions.

Acknowledgements

Thanks for comments go to Denise Anthony, Jens Beckert, Marc Dixon, John Hall, Ove Pedersen, participants in seminars at the Copenhagen Business School and Harvard University and several reviewers.

References

- Amable, B. (2003) *The Diversity of Modern Capitalism*, New York, NY, Oxford University Press.
- Amable, B., Ernst, E. and Palombarini, S. (2005) 'How Do Financial Markets Affect Industrial Relations: An Institutional Complementarity Approach', *Socio-Economic Review*, **3**, 311–330.
- Aoki, M. (2000) *Information, Corporate Governance, and Institutional Diversity*, New York, NY, Oxford University Press.
- Aoki, M. (2001) *Towards a Comparative Institutional Analysis*, Cambridge, MA, MIT Press.
- Apgar, W. and Calder, A. (2005) 'The Dual Mortgage Market: The Persistence of Discrimination in Mortgage Lending'. In de Souza Briggs, X. (ed) *The Geography of Opportunity: Race and Housing Choice in Metropolitan America*, Washington, DC, Brookings Institution Press, pp. 101–126.
- Appelbaum, B. and Herszenhorn, D. (2010, July 16) 'Congress Passes Major Overhaul of Finance Rules', *The New York Times*, New York, NY, p. 1.
- Bank for International Settlements (2008) '75th Annual Report, Part VII: The Financial Sector in the Advanced Industrial Economies', Basel, Switzerland, BIS, accessed at <http://www.bis.org/publ/arpdf/ar2008e.htm>.
- Blinder, A. (2009, January 25) 'Six Blunders En Route to a Crisis', *The New York Times*, New York, NY, p. 7.
- Boyer, R. (2005a) 'Complementarity in Regulation Theory', *Socio-Economic Review*, **3**, 366–371.
- Boyer, R. (2005b) *Coherence, Diversity and Evolution of Capitalisms: The Institutional Complementarity Hypothesis*, unpublished paper, Paris, Centre National de la Recherche Scientifique.
- Campbell, J. L. (2004) *Institutional Change and Globalization*, Princeton, NJ, Princeton University Press.
- Campbell, J. L. and Lindberg, L. N. (1991) 'The Evolution of Governance Regimes'. In Campbell, J. L., Hollingsworth, J. R. and Lindberg, L. N. (eds) *Governance of the American Economy*, New York, NY, Cambridge University Press, pp. 319–355.
- Campbell, J. L. and Pedersen, O. K. (2007) 'The Varieties of Capitalism and Hybrid Success: Denmark in the Global Economy', *Comparative Political Studies*, **40**, 307–332.
- Carruthers, B. (2010) 'Knowledge and Liquidity: Institutional and Cognitive Foundations of the Subprime Crisis', *Research in the Sociology of Organizations*, **30A**, 157–182.

- Carruthers, B., Babb, S. and Halliday, T. (2001) 'Institutionalizing Markets, or the Market for Institutions?'. In Campbell, J. L. and Pedersen, O. K. (eds) *The Rise of Neoliberalism and Institutional Analysis*, Princeton, NJ, Princeton University Press, pp. 94–125.
- Casey, K. (2009) 'In Search of Transparency, Accountability, and Competition: The Regulation of Credit Rating Agencies', speech by the Commissioner of the U.S. Securities and Exchange Commission, Washington, DC, USA, February 6, accessed at <http://www.sec.gov/news/speech/2009/spch020609klc.htm>.
- Center for Responsive Politics (2010) 'OpenSecrets.org', accessed at <http://www.opensecrets.org/lobby/top.php?showYear=2009&indexType=c>.
- Conlan, T. J., Wrightson, M. and Beam, D. (1990) *Taxing Choices*, Washington, DC, Congressional Quarterly Press.
- Cox, A. (1986) *The State, Finance and Industry*, New York, NY, St. Martin's.
- Cox, C. (2008) 'Chairman Cox Announces End of Consolidated Supervised Entities Program', press release 2008-230, U.S. Securities and Exchange Commission, September 26, accessed at <http://www.sec.gov/news/press/2008/2008-230.htm>.
- Crouch, C. (2005a) *Capitalist Diversity and Change*, New York, NY, Oxford University Press.
- Crouch, C. (2005b) 'Three Meanings of Complementarity', *Socio-Economic Review*, 3, 359–363.
- Crouch, C. (2010) 'Complementarity'. In Morgan, G., Campbell, J. L., Crouch, C., Pedersen, O. K. and Whitley, R. (eds) *The Oxford Handbook of Comparative Institutional Analysis*, New York, NY, Oxford University Press, pp. 117–137.
- Dash, E. and Creswell, J. (2008, November 23) 'Citigroup Pays for a Rush to Risk', *The New York Times*, New York, NY, p. 1.
- Davis, G. (2009) *Managed by the Markets*, New York, NY, Oxford University Press.
- Ellis, D. (1998) 'The Effect of Consumer Interest Rate Deregulation on Credit Card Volumes, Charge-Offs, and the Personal Bankruptcy Rate', FDIC Division of Insurance paper 98-05 (March 1998), Washington, DC, Federal Deposit Insurance Corporation, accessed at http://www.fdic.gov/bank/analytical/bank/bt_9805.html.
- Ellis, L. (2008) 'The Housing Meltdown: Why Did It Happen in the United States?', working paper no. 259, Basel, Switzerland, Monetary and Economic Department, Bank for International Settlements, accessed at <http://www.bis.org/publ/work259.pdf?noframes=1>.
- Federal Reserve Bank of Boston (1980) 'Depository Institutions Deregulation and Monetary Control Act of 1980', Boston, MA, Federal Reserve Bank, accessed at <http://www.bos.frb.org/about/pubs/deposito.pdf>.
- Ferguson, T. and Rogers, J. (1986) *Right Turn*, New York, NY, Hill and Wang.
- Fligstein, N. (1996) 'Markets as Politics: A Political-Cultural Approach to Market Institutions', *American Sociological Review*, 61, 656–673.
- Fligstein, N. (2001) *The Architecture of Markets*, Princeton, NJ, Princeton University Press.

- Fligstein, N. and Goldstein, A. (2010) 'The Anatomy of the Mortgage Securitization Crisis', *Research in the Sociology of Organizations*, **30A**, 29–70.
- Geithner, T. (2008) 'Reducing Systemic Risk in a Dynamic Financial System', speech to the Economic Club of New York, New York City, by the President and Chief Executive Officer of the Federal Reserve Bank of New York, June 9, accessed at <http://www.newyorkfed.org/newsevents/speeches/2008/tfg080609.html>.
- Gramlich, E. M. (2007) *Subprime Mortgages*, Washington, DC, Urban Institute Press.
- Guerrera, F. (2009, March 13) 'A Need to Reconnect', *Financial Times*, London, England, p. 9.
- Hall, P. (2005) 'Institutional Complementarity: Causes and Effects', *Socio-Economic Review*, **3**, 373–377.
- Hall, P. and Gingerich, D. (2004) 'Varieties of Capitalism and Institutional Complementarities in the Macroeconomy: An Empirical Analysis', Discussion Paper 04/5, Cologne, Germany, Max Planck Institute for the Study of Societies, accessed at http://www.mpi-fg-koeln.mpg.de/pu/mpifg_dp/dp04-5.pdf.
- Hall, P. and Soskice, D. (2001) 'An Introduction to Varieties of Capitalism'. In Hall, P. and Soskice, D. (eds) *Varieties of Capitalism*, New York, NY, Oxford University Press, pp. 1–70.
- Halliday, T. and Carruthers, B. (2009) *Bankrupt*, Stanford, CA, Stanford University Press.
- Hancke, B., Rhodes, M. and Thatcher, M. (2007) 'Introduction: Beyond Varieties of Capitalism'. In Hancke, B., Rhodes, M. and Thatcher, M. (eds) *Beyond Varieties of Capitalism*, New York, NY, Oxford University Press, pp. 3–38.
- Harrison, B. and Bluestone, B. (1988) *The Great U-Turn*, New York, NY, Basic Books.
- Höpner, M. (2005) 'What Connects Industrial Relations and Corporate Governance? Explaining Institutional Complementarity', *Socio-Economic Review*, **3**, 331–358.
- Kenworthy, L. (2006) 'Institutional Coherence and Macroeconomic Performance', *Socio-Economic Review*, **4**, 69–91.
- Kindleberger, C. (1978) *Manias, Panics, and Crashes: A History of Financial Crises*, New York, NY, Basic Books.
- Kolko, G. (1963) *The Triumph of Conservatism*, Chicago, IL, Quadrangle.
- Krasner, S. (1984) 'Approaches to the State: Alternative Conceptions and Historical Dynamics', *Comparative Politics*, **16**, 223–246.
- Krugman, P. (2009) *The Return of Depression Economics*, New York, NY, Norton.
- Labaton, S. (2009, July 25) 'Regulators Spar for Turf in Financial Overhaul', *The New York Times*, New York, NY, p. B1.
- Leicht, K. T. and Fitzgerald, S. (2007) *Postindustrial Peasants*, New York, NY, Worth.
- MacKenzie, D. (2008) 'End-of-the-World Trade', *London Review of Books*, May 8, accessed at http://www.lrb.co.uk/v30/n09/mack01_.html.

- Mahoney, J. and Thelen, K. (eds) (2009) *Explaining Institutional Change*, Cambridge, NY, Cambridge University Press.
- Minsky, H. (1986) *Stabilizing an Unstable Economy*, New Haven, CT, Yale University Press.
- Mishel, L., Bernstein, J. and Allegretto, S. (2005) *The State of Working America, 2004/2005*, Ithaca, NY, Cornell University Press.
- Molina, O. and Rhodes, M. (2007) 'The Political Economy of Adjustment in Mixed Market Economies: A Study of Spain and Italy'. In Hancke, B., Rhodes, M. and Thatcher, M. (eds) *Beyond Varieties of Capitalism*, New York, NY, Oxford University Press, pp. 223–252.
- Morgan, G. (2008) 'Market Formation and Governance in International Financial Markets: The Case of OTC Derivatives', *Human Relations*, **61**, 637–660.
- Morgenson, G. (2008, November 2) 'Was There a Loan It Didn't Like?' *The New York Times (Business Section)*, New York, NY, p. 1.
- Morgenson, G. (2009, June 21) 'Too Big to Fail, or Too Big to Handle?' *The New York Times (Business Section)*, New York, NY, p. 1.
- Morgenson, G. (2010, August 29) 'It's Not Over Until It's In The Rules', *The New York Times (Business Section)*, New York, NY, p. 1.
- Münchau, W. (2010) *The Meltdown Years*, New York, NY, McGraw Hill.
- Nocera, J. (2009, January 4) 'Risk Mismanagement', *The New York Times Magazine*, New York, NY, pp. 24–51.
- Onaran, Y. (2007) 'Wall Street Gets Lift from SEC That May Boost Profit', Bloomberg.com, accessed at <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a3tOaHzKbjn8>.
- Palmer, D. and Maher, M. (2010) 'The Mortgage Meltdown as Normal Accidental Wrongdoing', *Research in the Sociology of Organizations*, **30A**, 219–256.
- Patterson, S. (2010) *The Quants*, New York, NY, Crown Business.
- Polanyi, K. (1944) *The Great Transformation*, Boston, MA, Beacon Press.
- Quinn, S. (2008) 'Securitization and the State', paper presented at the American Sociological Association, Boston, MA.
- Rich, F. (2009, June 21) 'Obama's Make-or-Break Summer', *The New York Times (Week in Review Section)*, New York, NY, p. 8.
- Skidelsky, R. (2009) *Keynes: Return of the Master*, New York, NY, Public Affairs.
- Sorkin, A. (2009) *Too Big To Fail*, New York, NY, Viking.
- Soskice, D. (1999) 'Divergent Production Regimes: Coordinated and Uncoordinated Market Economies in the 1980s and 1990s'. In Kitschelt, H., Lange, P., Marks, G. and Stephens, J. D. (eds) *Continuity and Change in Contemporary Capitalism*, New York, NY, Cambridge University Press, pp. 101–134.
- Stiglitz, J. (2003) *The Roaring Nineties*, New York, NY, Norton.
- Stiglitz, J. (2010) *Freefall*, New York, NY, Norton.

- Strahan, P. E. (2002) 'The Real Effects of Banking Deregulation', Wharton Financial Institutions Center working paper 02-39, University of Pennsylvania, Philadelphia, PA, accessed at <http://fic.wharton.upenn.edu/fic/papers/02/0239.pdf>.
- Streeck, W. (1997) 'Beneficial Constraints: On the Economic Limits of Rational Voluntarism'. In Hollingsworth, J. R. and Boyer, R. (eds) *Contemporary Capitalism*, New York, NY, Cambridge University Press, pp. 197–219.
- Streeck, W. (2005) 'Requirements for a Useful Concept of Complementarity', *Socio-Economic Review*, 3, 363–366.
- Surowiecki, J. (2008, September 29) 'Public Humiliation', *The New Yorker*, New York, NY, accessed at http://www.newyorker.com/talk/financial/2008/09/29/080929ta_talk_surowiecki.
- Tett, G. (2009) *Fool's Gold*, New York, NY, Little Brown.
- The Economist* (2009a, January 25) 'A Special Report on the Future of Finance', London, England, pp. 1–21.
- The Economist* (2009b, February 14) 'Worse Than Japan?', London, England, pp. 81–82.
- The New York Times* (2009, June 26) 'Draft of President Obama's Financial Regulation Proposal', accessed at <http://documents.nytimes.com/draft-of-president-obama-s-financial-regulation-proposal/page/44#p=1>.
- The New York Times* (2010, February 21) 'Modest Won't Do It', Week in Review Section, New York, NY, p. 9.
- Wade, R. (2008) 'Financial Regime Change?', *New Left Review*, 53, 5–21.
- Wolf, M. (2009, March 9) 'Seeds of Its Own Destruction', *Financial Times*, London, England, p. 7.
- Zucker, S., Deutsch, C., Hoerr, J., Jonas, N., Pearson, J. and Cooper, J. (1982) *The Reindustrialization of America*, New York, NY, McGraw Hill.
- Zysman, J. (1983) *Government, Markets and Growth*, Ithaca, NY, Cornell University Press.