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# The Evolution of Bank Bailout Policy: Two centuries of variation, selection and retention<sup>1</sup>

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**Abstract:** Why has the policy of state-backed bank bailouts emerged as the de facto global response by governments to crises involving systemic bank risk? This question has salience in the context that while bank bailouts solve an immediate problem of systemic risk, they create another set of problems almost as significant. Bailouts involve largescale socialization of private losses, are politically toxic, ideologically contrary to market norms, and economically costly to the state. For these reasons many commentators view the policy to be neither optimal nor desirable, yet it has nonetheless been institutionalized in all modern financial systems. In this paper I argue that the global diffusion of bank bailout policy over the past two centuries is an example of institutional evolution. A process of variation, selection and retention has winnowed down initial variation in responses to possible financial sector collapse to one policy, a state-backed guarantee to bail out the financial system. Understanding the past is a prerequisite for gaining insight into possible futures. Consequently, historical study of bank bailouts will contribute to understanding the future evolution of systemic banking crises by providing insight into the evolution of institutional resilience.

**Keywords:** Institution, evolution, generalized Darwinism, banking crises

**JEL Classification:** G01, G28, N40

## 1 Introduction

Financial and banking crises have been a recurrent theme throughout the history of capitalism (Aliber & Kindleberger, 2015; Reinhart & Rogoff, 2009). Kindleberger and

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Aliber (2015) document over fifty major financial crises since the early 17<sup>th</sup> century. Reinhart and Rogoff (2009) catalogue an even greater number of financial crises, including sovereign debt-defaults, banking crises and currency crises going back to the 13<sup>th</sup> century. Laeven and Valencia (2012) identify 147 banking crises globally between 1970–2011. These crises have shaped the development of banking institutions globally (Grossman, 2010). The most significant global institutional response to modern financial crises involving systemic risk has been the policy of bank bailouts, colloquially known as ‘Too big to fail’ (Acharya, Beck, Evanoff, Kaufman, & Portes, 2014; Gup, 2004a, b; Kaufman, 1990; Moosa, 2010; Sprague, 1986; Stern & Feldman, 2004). The first recorded bank bailout of a modern financial system was in the United States in 1792 (Sylla, Wright, & Cowen, 2009). Fast-forward to the Global Financial Crisis of 2008 and bank bailout policy has diffused globally to become an institutionalized response to banking instability (Gup, 2004a; Mishkin, 2006; Stern & Feldman, 2004).

The institutionalization of bank bailouts is significant given the major political and economic costs involved. For example, public funds used to bailout private firms is antithetical to prominent pro-capitalist ideologies, and thus the policy generates discontent in states where pro-market ideology has a strong political base. Political discontent is further amplified by ensuing fiscal tightening typically required to pay for bailouts (McDonagh, 2019). Thus, while bank bailouts solve an immediate problem of systemic risk, they create another set of problems that can threaten capitalist systems politically, ideologically and economically in the medium term. To illustrate, public outcry in the aftermath of numerous bank bailouts during the 1980s in the U.S. led to the enacting of the Federal Deposit Insurance Corporation Improvement Act of 1991, designed specifically to prevent future bailouts. This Act was unsuccessful, as the events of 2008 highlight, and after which public anger over Wall Street’s latest bailout resulted in the Occupy social movement emerging, as well as the populist Tea Party (Roberts, 2012). In European countries anger at bailouts and the ensuing fiscal austerity have ‘provoked social conflict, political controversy

and academic disputes' (Clarke & Newman, 2012: 299). These responses to bailouts are not only a modern phenomenon. Bailouts have since their inception in the late 18<sup>th</sup> century created major controversy, as will be discussed in later sections.

Given the significant issues that arise with bank bailouts, why has the policy emerged as the defacto response by governments to systemic bank risk? In this paper I argue that the global diffusion of 'Too big to fail' over the past two centuries is an example of institutional evolution. A process of variation, selection and retention has winnowed down initial variation in responses to possible financial sector collapse to one policy, a state-backed guarantee to bail out the financial system. This process highlights how the evolution of complex socioeconomic systems are disciplined by factors which can result in outcomes which no agent or group desires or foreplans. This finding provides insights into the possibilities and limits for designing institutional resilience.

This paper proceeds through six further sections. Section two discusses a theory of institutional evolution. Section three traces out two centuries of institutional innovation and variation as governments attempted to solve the risks of bank failure during crisis, beginning in 1792 in the United States of America. Section four looks at the modern origins of today's state-managed bank bailout policy. Here the development of bank deposit insurance in response to the Great Depression laid the grounds for the formal institutionalization of modern bailout policy. Section five examines the U.S. banking crisis of 1984, when Continental Illinois was bailed out at a cost of \$41 billion, dwarfing previous bailouts. After Continental it was officially acknowledged that the eleven largest U.S. banks were 'Too big to fail'. Section six applies theory from section two in arguing that the history of bank bailout policy exhibits a dynamic of variation, selection and retention, and therefore is a classic case of institutional evolution. Section seven provides concluding remarks.

## 2 A Theory of Institutional Evolution

This section outlines a theory of institutional evolution governed by a process of variation-selection-retention (hereafter VSR). In its modern incarnation<sup>2</sup> the VSR model of institutional change has its origins in a now classic article by Campbell (1965) which sought to develop a general theory of evolution within complex systems. In doing so Campbell argued that processes of variation, selection and retention previously identified as governing change during biological evolution were also applicable to other domains, for example social evolution. In the latter, selective retention of more successful variations in forms of social organization across group populations was emphasized. With Campbell's work preparing the ground, Nelson and Winter's (1982) work marked the modern revival of an evolutionary economics in a vein called for by Veblen (1898) almost a century prior. Nelson and Winter's work is widely-known for applying variation, selection and retention to understanding how routines evolve within populations of firms, and has been highly influential in spurring economists' interest in deploying the VSR model.

Consequently, while variation-selection-retention has its origins in Darwin's theory of biological evolution, it has since been developed as an over-arching meta-theory that can be generalized to explain change in open, complex systems that share certain ontological features (Aldrich et al., 2008; Beinhocker, 2011; Breslin, 2010; Buskes, 2013; Dawkins, 1999; Foster & Metcalfe, 2012; Hodgson, 2002, 2004a; Hodgson & Knudsen, 2010; Hodgson & Knudsen, 2012; Metcalfe, 1998; Nelson, 2007). This development is based on the argument that the VSR trinity represents an evolutionary 'algorithm' that 'is neutral with respect to the medium or substrate of evolution, and neutral with respect to the 'entities' that evolve' (Buskes, 2013: 665).

The conditions needed for an evolutionary process, involving variation, selection and retention, to occur include: (1) a source of ongoing generation of *variation* between members of the population involved; (2) the variations produced

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<sup>2</sup> Thorstein Veblen's work at the turn of the twentieth century foreshadowed modern VSR theory.

by population members experience differential rates of success in solving environmental problems as a result of *selection* pressures winnowing out unfit characteristics; (3) environmentally fit characteristics must be *retained* and replicated, with the end result being a change in the average characteristics of the population of entities in favour of the successful characteristics (Hodgson & Knudsen, 2010: 33-34; Lewontin, 1970: 1). Consequently, as defined here, evolution refers strictly to transformations of populations of entities over time through a VSR dynamic, and does not refer to historical change for which no discernible VSR dynamic is identifiable, nor change to single entities over their lifetime. Only when a process of variation-selection-retention results in changes to the average characteristics of a population can evolutionary change be said to have resulted. This further implies that evolutionary processes are 'non-random because selection is not a blind lottery' (Buskes, 2013: 664).

The ability to generalize the VSR trinity beyond its original application in biology is thus dependent upon the necessary ontological conditions for VSR to occur existing in other domains, such as socio-cultural evolution. However, because these shared commonalities rest at a high level of abstraction for the systems involved (Hodgson, 2002: 259) additional domain-specific, middle-range theories are required to complete an account of evolutionary change specific to the system in question (Aldrich et al., 2008: 585; Buskes, 2013: 672; Hodgson & Knudsen, 2010: 40). This highlights that we cannot simply map existing middle-range explanations from one domain, for example biology, onto another ontologically different domain, for example the social domain, but rather must identify the specific processes relevant for each by which the evolutionary trinity may unfold in concrete terms. The rest of the discussion concerns domain-specific mechanisms that operate during social evolution generally, which will then be applied to explain socio-economic evolution.

In social evolution variation is produced by ongoing institutional innovation in response to changing conditions in the wider environment, as well as being a consequence of agent goal-seeking. This variation is reduced by 'selection' pressures,

which refer to 'the mechanisms that bring about the survival of some variations rather than others, often reducing variety' (Aldrich et al., 2008: 584). Selection pressures arise from incumbent conditions, which may include climatic conditions, available food sources, in-group cooperation and between-group competition, technological change and cultural shifts. At this point it is important to distinguish between 'subset selection' and 'successor selection' (Hodgson & Knudsen, 2010: 94-104). Subset selection occurs when a population's interaction with the environment causes differential selection of some entities over other, resulting in elimination of some entities and a reduction variation across the population. To illustrate, war, and the threat of war, has been a major subset selection mechanism in the evolution of the state throughout recorded history (Feld, 1975; Hodgson, 2015; Mann, 2012; Turchin, 2006). States which have not developed effective military and political institutions as well as ideologies for group cohesion have typically been conquered or assimilated by states that did develop such institutions. Thus, historically when war occurs it has selected those states that developed institutions to most effectively organize mass violence, and eliminated those which could not, resulting in subset selection.

'Successor selection' involves the creation of new variation followed by interaction with the environment that results in differential rates of retention of those variations. Continuing to illustrate by way of the well-documented effects of military conflict on social evolution, it is the case that war has resulted in agents experimenting with different forms of military organization and technology. These variations are tested in a complex environment comprising other groups with opposing goals, as well as selection factors beyond human control, including but not limited to the physical capacities and limitations of the human body, natural topography, the effect of gravity, the possibility for domesticating members of the *Equidae* group of mammals, and the consequences of the first and second laws of thermodynamics.

Experimentation allows for variations in military technologies and modes of organization that are shown to be more or less successful when applied in specific environmental conditions. For example topography may determine whether light cavalry is better than heavy cavalry, while social learning means successful innovations will be copied by other groups. Successor selection helps explain ongoing production of variation within those forms of military organization and the differential rates of social replication of such variations. Subset selection explain why three fundamental forms of military organization, those of infantry, cavalry and artillery have emerged as the basis for all military organizations in recorded history (Mann, 2012: 132). Both concepts capture important processes during evolution.

Selection pressures force 'interactors' to acquire or develop new 'replicators'. Hodgson and Knudsen (2010, p. 15) define an 'interactor' as 'a relatively cohesive entity that hosts replicators and interacts with its environment in such a way as to lead to changes in the population of interactors and their replicators' (Hodgson & Knudsen, 2010: 15). Interactors can be organizations, such as business firms (Aldrich et al., 2008; Hodgson & Knudsen, 2004b), or individuals and groups (Hull, 1988; Wilson, Van Vugt, & O'Gorman, 2008). A 'replicator' refers to 'program-like bits of information, held by an entity [interactor], that can represent adaptive solutions to problems and guide its development' (Hodgson & Knudsen, 2012: 13). In the natural world a gene is a biological replicator; in the social domain individual habits, organizational routines and ideas are equivalent replicators (Aldrich Howard & Ruef, 2006; Hodgson, 2015; Hodgson & Knudsen, 2004a, b, 2010).

Here we come to a crucial difference between biological and social evolution. In biological evolution genetic replicators spread vertically, meaning from parent to offspring, through replication by reproduction. During this process replication is a mechanism referring to a causal relationship between interactors, where a high degree of fidelity exists between original and replicated entities, and where information relating to characteristics for environmental adaptation are passed directly between entities (Aldrich et al., 2008: 586; Godfrey-Smith, 2000). Vertical



replication does occur during human sexual reproduction and is crucial for species reproduction. However, for the human species selection for fitness has moved from the biological domain to the cultural-technological domain, and from individual selection to between-group selection (Hodgson & Knudsen, 2010; Richerson & Boyd, 2006; Wilson et al., 2008). With the emergence and growing importance of culture for species success the horizontal diffusion of information has become a central mechanism driving evolution.

In the social domain 'diffusion' of replicators (habits, routines and ideas) is one of the most important mechanisms by which information is passed on horizontally (Buskes, 2013: 672; Hodgson, 2015: 322). Diffusion is defined as 'the successive transmission of a property—involving information and the capacity to use it—from one entity to another, through time and space' (Hodgson & Knudsen, 2010: 105). In further clarifying the crucial difference between biological and social mechanisms of evolution, Hodgson and Knudsen (2010: 27) note that 'diffusion is regarded as a type of inheritance where a copy of a replicator is established in a second interactor, but without the copying of interactors'. Here the concept of 'social learning' is significant.

Social learning is defined as: 'A general capacity to acquire information from others, regardless of the nature of the information, its function, or the sensory modality involved' (Laland, Odling-Smee, & Feldman, 2000: 141). Social learning becomes central to human evolution under conditions where culture can be accumulated using language and writing (Buskes, 2013). Cultural diffusion spreads horizontally between interactors, under influence of a selection pressure. This horizontal diffusion of information can occur at a speed that is far greater than the slow turn of vertical population reproduction that occurs within biological evolution of species. It is this comparatively vaster speed that makes cultural evolution so dynamic in comparison (Buskes, 2013). Nonetheless, social learning should not be conceived simply as a linear process of ever greater knowledge and control over

social reality with regard to social choices and their possible futures. This would imply increasing certainty about the future.

Instead, it is the case that all social choices involve an irreducible element of uncertainty regarding their future outcomes (Friedman, 2006; Knight 1921). Knight makes an important distinction between ‘*measurable* uncertainty’ and ‘an *unmeasurable* one’ (1921: 20). Measurable uncertainty applies to known potentialities that may be assigned a statistical probability value based on observation from past experience, as occurs in the indemnity industry. Such risk-calculation allows for the reduction of uncertainty in a specific area through knowledge of causality between regular congruencies that allow for some degree of probabilistic predictive power. Whereas, unmeasurable uncertainty refers to potentialities that are completely unknown and thus cannot be assigned probability values. It was the latter that Knight referred to as “true” uncertainty (1921: 20).

Devising a viable solution to any given problem will entail both risk and uncertainty. From the point of view of risk, increases in knowledge implies the possibility for ever greater control over policy outcomes and a linear progression to policy evolution. Radical uncertainty, on the other hand, implies strict limits on the predictive powers of agents, such that policy solutions may result in new unforeseen problems equal to those which agents are seeking to resolve in the first place. This can result in a ‘compensating spiral’ whereby policy evolution is a product of adaptation to new problems rather than of progressive increases in control over social reality. Consequently, assessing policy evolution requires consideration of increasing risk-management capabilities versus ad hoc adaptation to uncertainty.

The next three sections outline crucial events in the institutional emergence of bank bailout policy. Following that, the above theory of institutional evolution will be utilized in section five to explain the emergence and institutionalisation of bank bailouts. It will help explain how initial institutional variation in response to modern banking system failure has, over time, reduced to a singular commitment by the

relevant sovereign to apply the full fiscal capacity of the state to prevent systemically important private financial institutions from failure during financial crises.

### **3 Early Modern Banking Crises and Initial Variation in Bank Rescue Policy: 1792-1923**

A sound banking system may be defined as one where ‘most banks (those accounting for most of the system’s assets and liabilities) are solvent and likely to remain so. Solvency is reflected in the positive net worth of a bank, as measured by the difference between assets and liabilities’ (Lindgren, Garcia, & Saal, 1996: 9). Thus, a banking crisis arises when the banks that account for the majority of assets and liabilities become insolvent for whatever reason. Friedman and Schwartz (1963) argue that the defining feature of a banking crisis is a large increase in the currency-to-deposit ratio in favour of currency as a result of withdrawals, but with the exact level at which this ratio must be for a crisis to exist is not specified. This definition falls under the more general solvency definition of Lindgren, Garcia and Saal (1996), since large withdrawals of deposits from a banking system would be one means by which bank solvency would be severely reduced.

In building on the above definitions of a banking crisis, Grossman summarizes a crisis as a situation that includes the following three elements: 1) ‘A high proportion of banks failed’, 2) ‘an especially large or important bank failed’, and 3) ‘failures of the type described in (1) or (2) were prevented only by extraordinary and direct intervention by the government or some other actor’ (Grossman, 2010: 59). He goes on to note that intervention may include declaring a public holiday to temporarily close the banking system, or major reorganization or nationalization. It is under such conditions that typically leads to major government intervention.

The first banking crisis discussed is the U.S. financial panic of 1792. This crisis is recorded as America’s first financial crash, and the crucible in which the country’s

modern financial system was forged by Alexander Hamilton, the first Treasury secretary (Cowen, 2000a, b; Sylla et al., 2009). The crisis came at a crucial period for the newly formed country. Republican anti-Federalists were critical of Hamilton and others who sought to develop federal institutions, including a central bank.

Hamilton had gained Congressional approval in 1791 to establish the Bank of the United States (BUS) as a tool for implementing Federal goals for national economic development, and for improving the fiscal capacities of the nascent federation. While these goals were ultimately successful, with the bank playing a seminal role in American economic development during the twenty years after its incorporation in 1791 (Cowen, 2000b), it almost backfired spectacularly in the first year of the bank's life.

Hamilton's BUS was heavily involved in creating the conditions that triggered the 1792 crisis (Cowen, 2000a). During the first two months after it opened its doors in December 1791, the bank flooded the market with credit, which was used by speculators who tried to corner the market in U.S. debt securities and BUS stocks (Cowen, 2000a: 1043). Hamilton tried to quell what he viewed as excessive speculation, resulting in the bank sharply restricting credit in February of 1792, and in so doing inadvertently triggering a market crash. If the crisis had not been resolved quickly it would have been a political disaster for the Federal government.

According to Sylla et al. (2009), Hamilton's goal with the BUS was to develop a robust market for U.S. government debt in order to provide the Federal government with reliable funding. Thus, the incorporation structure of BUS was devised with this in mind. The Federal government took a 20 percent stake, and private investors were offered the remaining shares, 'one-quarter of which was payable in specie (gold or silver), and the remainder to be payable in the new U.S. debt securities' (Sylla et al., 2009: 67). By requiring three-quarter payment in U.S. debt securities Hamilton's goal was to generate an initial market for government securities. By late 1791 he got more than he bargained for as markets for bank shares and government bonds became volatile, forming a chaotic speculative bubble:

The BUS direct public offering led to six weeks of heated financial speculation, the likes of which had never before been witnessed in America. Bank scrips purchased at \$25 quickly doubled in price...In early August, they soared, reaching a bid of 264-280 asked in New York on August 11, and reportedly more than 300 in Philadelphia the same evening. Then they tumbled, in Boston from 230 on August 12 to 112 on August 14, to 154- 59 in New York on August 16, and to 125-37 in Philadelphia the same day, before rallying later that month. Government bonds also rallied, sixes jumping from 90 in early July to 112.50 in Philadelphia on August 13. Then they fell to 100 by August 17, prompting Hamilton to swing into action (Sylla et al., 2009: 71).

In order to steady the market Hamilton began government-backed open-market operations using the private Bank of New York, because the BUS was not yet fully functional. This initially had a calming effect during the latter months of 1791, however by March 1792 a collapse of 25 percent in the price of government bonds called 'sixes', (paying 6% interest), heralded a new phase of panic threatening to derail Hamilton's financial revolution. Hamilton stepped up his response, beginning 'a series of lender-of-last resort operations that would last for several weeks' (Sylla et al., 2009: 78). This involved channelling loans to support banks under pressure due to the depreciation in bonds, as well as 'authorizing a further \$100,000 of open-market purchases of sixes at par' (ibid: 79), thus paying above the going market rate and putting a floor under speculator losses. Hamilton also involved the New York bond dealers, getting them to 'collateralize U.S. bonds at the prices Hamilton had suggested' (ibid: 81), thus utilizing a novel mix of government and private institutions.

His approach worked, and the financial panic receded by mid-April 1792. Hamilton also avoided political rancour that would have arisen if it were known his efforts involved a bailout of private banks and investors by protecting them from further losses. Hamilton framed his purchases of bonds as actions aimed at reducing government debt to gain support of anti-Federalist Republican (ibid., p. 84).

Hamilton restored market confidence and a period of stability followed that was not

breached again until 1819 (Cowen, 2000a). His legacy was to leave America with a modern financial system, characterized by 'stable public finances and debt management; stable money; an effective central bank; a functioning banking system; active securities markets; and a growing number of business corporations, financial and nonfinancial' (Sylla et al., 2009: 62). He also devised innovative strategies such as open-market and lender-of-last-resort operations, and a form of private sector bailout to prevent systemic risk contagion, setting an early blueprint for bank bailout policy.

Grossman (2010: 86-96) identifies the next four crises and bank bailouts during the 19<sup>th</sup> century bank to be discussed. First we turn to Australia 1826, and the bailout of Bank of New South Wales in Australia (Grossman, 2010: 87-88). The bank had a virtual monopoly in New South Wales during the 1820s boom in the region. It was highly profitable, paying dividends as high as 53.5 percent in 1826. In attempting to further increase this rate of profit the bank 'began to over-issue notes' while simultaneously new competition from Bank of Australia entered the lucrative market (Grossman, 2010: 88). This led to a drain on deposits, as investors bought shares in the new bank. Cash drain threatened the banks solvency and forced it to apply for government support. Given the extent of the banks operations in the state, and the threat its collapse posed to the economy, the government approved the loan. However, the bank had to accept a number of conditions. These included the government gaining authority to appoint three directors, the bank reducing its lending by one quarter over nine months, and the bank having to call up its unpaid capital to support its solvency (Grossman, 2010: 88).

The reasons for these stipulations was to avert moral hazard (Grossman, 2010: 90). 'Moral hazard' is a term that originates from the insurance literature, and refers to situations where insurance prompts the insured to act more reckless than they would without insurance (Grubel, 1971). In banking, it refers to the danger that bankers confident of a bailout will behave in ways that cause the need for a bailout. Moral hazard has been a major concern and point of political contention for

authorities engaging in banking sector rescues since at the late 18<sup>th</sup> century (Grossman, 2010; Sylla et al., 2009).

Next is the bailout of the Bank de Belgique. This bank became a candidate for bailout in 1839 after it was put under pressure to redeem large amount of its notes by another large financial institution, Société Générale, which had sought the redemptions for political reasons. As Grossman discusses, the politics revolved around the Dutch King William of Orange-Nassau's refusal to acknowledge Belgium as a sovereign state. The Bank de Belgique had been established shortly after the Belgian Revolution of 1830 as a 'counterweight' to the King William-backed Société Générale. The latter sought to use financial tactics to collapse the Bank de Belgique by presenting large redemption claims. The Belgian government had initially refused to help prior to suspension of payments, but quickly changed its approach when the economic effects became clear:

The bank's suspension soon began to affect commerce and industry: companies were not able to obtain funds to meet payrolls and other current expenses, and pressure began to mount for politicians to do something about the crisis. By December 22, the Minister of Finance brought a proposal to Parliament to assist the bank...In reporting back to Parliament, the commission of inquiry appointed by the government acknowledged that moral hazard might be engendered by such a precedent, but that the danger of not dealing with the threat was even more dangerous' (Grossman, 2010, p.89)

This case highlights the centrality of major banks to a capitalist economy, as well as indicating the political motivating factors that can act as drivers of public assistance for private banks, despite the moral hazard and ideological conflict with free market principles.

In Germany 1848 the Schaaffhausen Company, the largest private bank in the Rhineland at the time faced collapse during a national financial crisis, when the bank became illiquid (Grossman, 2010). This occurred, despite the fact that the value of its assets exceeded the value of the bank's liabilities. However, the assets could not be

converted to cash due to the national crisis. Moral hazard was a major concern of the Prussian state authorities engaging the bailout. They therefore specified onerous conditions and limitations on any support. The bank was to be re-structured in such a way that its creditors were made shareholders, making them directly liable for the bank's ongoing activities. Half of the share total was guaranteed by the Prussian authorities an annual dividend of 4.5 percent, with back payments of 10 percent per year for a decade. The remaining shares had no guarantee, and were limited to 4 percent payments per annum. The shares left in the hands of the original owners, who had in effect been stripped of that ownership by being demoted to part-shareowners, were not to receive more than 2 percent per annum through to 1858. The Prussian authorities were given power to choose one of the bank's three directors. Lastly, the fiscal cost to the Prussian Treasury was strictly limited to paying the agreed dividends. These strict stipulations were aimed squarely at ameliorating the politically contentious effects of public authorities helping private institutions, as well as averting moral hazard.

Next we turn to France 1889, and the Comptoir d'Escompte, a Paris-based bank founded in 1848 that had become central to France's developing financial sector. The bank lent large sums to a metals company that tried to corner the copper market during the 1880s. This strategy failed when copper prices collapsed in March 1889. Knowledge of the bank's exposure to this collapse led to a bank run. With a large possibility for contagion the Bank de France guaranteed 100 million franc loan to short-circuit the run. But the Bank only did so on the condition that a number of private banks subscribe to the guarantee and share liability with the authorities. The private bankers refused initially, until the government threatened to make public their unwillingness to support the general interest alongside the government in resolving the crisis. Here Grossman notes: 'The government's role, then, was to encourage, and, if necessary, threaten the bankers to subscribe to the guarantee for the Comptoir's debts' (Grossman, 2010, p. 92) This strategy appears to have provided



the necessary motivation, since the private banks subsequently agreed to support the plan.

A bailout in 1890 of Baring Brothers occurred under similar conditions of coercion. The rescue plan involved 'dragooning' the wider private financial community into accepting part-liability for the rescue, which would involve liquidation of the bank's assets, 'along with the personal fortunes of a number of its directors' (Grossman, 2010, p. 94), and using the sales to pay off claims against the bank, which was re-incorporated as a limited-liability company. The guarantors would be liable for the difference sold assets and the bank's total liabilities due.

Instances of large banks that were refused bank bailouts during the 19<sup>th</sup> century are also instructive of the political economy through which bailout policy has evolved. The City of Glasgow Bank was denied a bailout by the Committee for Scottish banks for pragmatic reasons in 1878. The bank had expanded aggressively in the decades prior, and was one of the largest in Scotland by 1878. During that year the bank ran into major solvency difficulties and requested help from the Committee. They refused 'on the grounds that the bank's affairs were in a terrible state' (Grossman 2010: 96), and that no viable rescue was possible. In fact, the directors were later tried and sentenced to prison for fraudulent accounting and falsifying bank statements (Grossman 2010: 96). Two large French banks were denied help during the 19<sup>th</sup> century, *Crédit Mobilier* in 1868 and *Union Générale* in 1882 (Aliber & Kindleberger, 2015; Grossman, 2010). Refusal was also on the grounds that both banks were completely insolvent, with *Union Générale* accused of falsifying its books during aggressive expansion during the French railway boom of the 1870s.

Kindleberger and Aliber point out that during the 19<sup>th</sup> century the French authorities were resolutely against financial bailouts on the ideological grounds that the policy encouraged moral hazard (2015: 261). Thus, initially the French approach was to let banks fail, and let losses fall as they should in a policy of non-intervention. Nevertheless, as discussed earlier, the French authorities did bailout the *Comptoir*

d'Escompte in 1889. Why the change in policy? The French authorities recognised the impact of bank failures on confidence, taking the view that 'a second large bank failure in seven years might have completely destroyed the French banking system' (2015: 265). This point highlights the growing recognition by state authorities of the need for credibility and general confidence in a financial system in order for it to function, and with that recognition a growing view that the costs of non-intervention are greater than the costs of intervention.

The last example in this section, and our first twentieth century banking crisis further highlights this point. Between May 1918 and February 1923 Norway had the most devastating financial crisis of its history, with the main index at the Oslo Stock Exchange falling 73.6 percent during the period (Grytten & Hunnes, 2010). It was the effect of this crisis that led the Foreningsbanken, Norway's largest bank of the day with total assets equivalent to 16 percent of national GDP, to request a government bailout in 1923. The request was initially refused by Governor of Norges Bank, Nicolai Rygg on grounds that the bank was insolvent and an unviable prospect (Nicolaisen, 2015). Soon afterwards Foreningsbanken was placed under public administration, quickly followed by two more banks, Centralbanken for Norge and Handelsbanken (Nicolaisen 2015: 2). This cascade effect threatened to implode the entire economy, not only because the banks involved were large, but because their failure destroyed confidence in all Norwegian banks, even those in good standing. By the time the Handelsbanken faced collapse the government was ready to intervene and rescue the bank. The reasoning for the intervention was explained by Governor Nicolai Rygg after the crisis in testimony to a banking commission:

The very foundations of confidence, the nation's confidence in its own credit institutions had been shaken ... The most important objective was therefore to prevent an avalanche, seek to contain the damage, hang on and hold back. That was the dominant thought, to prevent total collapse, for the danger of this was indeed present... and the general atmosphere of nervousness manifested itself in the most peculiar ways. In the blind panic that ensued, unreasonable attacks were made on

institutions that were more than deserving of their depositors' confidence' (reported in Gjedrem, 2009, Norges Bank report).

Rygg is referring to the psychological effects of a bank run, whereby a loss of confidence in a single or small number of banks becomes contagious, threatening the whole system, and exposing the structural vulnerability embedded in the fractional reserve lending system underpinning modern finance. It was precisely this negative 'run' loop which the Norwegian government sought to short-circuit by reversing their non-intervention policy and support the banking system.

While government intervention did avert the worst of the 1923 Norwegian banking crisis, there still existed no formal policy to solve the 'bank run' problem. It was to take the Great Depression and a series of banking crises during the 1930s in the United States before a permanent solution was found to this issue. The next section will turn to developments in the United States since the 1930s which led directly to the innovation of deposit insurance policy to solve the run problem.

#### **4 Deposit Insurance as the Precursor to 'Too big to fail'**

The Great Depression beginning in 1929 and continuing into the 1930s was a key event that called for a major policy breakthrough in dealing with one of the most dangerous effects of financial panic, a banking run. The policy was deposit insurance, and it laid the grounds for the institutionalisation of 'Too big to fail'. In the United States the effects of the crisis were particularly devastating on the country's financial system. The famous stock market crash of 1929 was just the beginning, as the country experience a succession of three banking crises through to 1933 (Eichengreen, 1992). There was a dramatic increase in bank suspensions, where banks refuse to convert deposits into cash withdrawals. During the 1920s national banks suspensions averaged around 85 per year, with the average shooting up to 580 annually between 1930-33 and peaking at 1,475 in 1933 (Grossman, 2010, p. 245). During the ongoing crisis large numbers of banks failed. For example, in November 1930 a total of 256 banks holding almost \$200 million of deposits failed; while in

December of the same year 352 banks holding more than \$370 million failed (ibid, p. 246). High rates of bank failures continued until 1933. There is broad agreement that these rolling bank failures significantly prolonged and deepened the Great Depression (Eichengreen, 1992; Friedman & Schwartz, 1963; Grossman, 2010).

One of the most important policy responses to these banking failures during the Great Depression was the establishment of federal deposit insurance through incorporation of the Federal Deposit Insurance Corporation (FDIC) under the 1933 Banking Act (Aliber & Kindleberger, 2015; Grossman, 2010; Zardkoohi, Kang, Fraser, & Cannella, 2018). The aim of deposit insurance was to short-circuit bank runs by providing a federal guarantee of all deposits up to a maximum amount and covering the majority of savers. The amount covered initially under the Act was \$2,500, which was raised to \$5,000 six months later. Structuring the insurance with a maximum limit was designed to protect the general saver, who could not reasonably be expected to treat their savings as investments and thus monitor their bank's risk profile (Goodhart, 1999). Large depositors, on the other hand, would not be covered since they were considered as knowledgeable investors with the means and the motive to 'monitor risk-taking behaviour' (Zardkoohi et al., 2018: 222).

This innovative policy solution had the benefits of securing everyday savers, thereby preventing panic withdrawals during a crisis, while simultaneously allowing 'market discipline' to continue to apply to investors. According to Friedman and Schwartz: 'Federal insurance of bank deposits was the most important structural change in the banking system to result from the 1933 panic...and...the structural change most conducive to monetary stability' (Friedman & Schwartz, 1963: 434), a view also shared by Grossman (2010: 247). The success of deposit insurance in virtually eliminating bank runs has resulted in its global diffusion as a policy in almost all national financial systems (Goodhart, 1999; Mishkin, 2006; Nicolaisen, 2015). However, since its inception deposit insurance policy has continually transformed in ways that set the grounds for the 'Too big to fail' policy. The fact that the insurance limit kept rising over time is crucial in this respect. From the initial

\$2,500 limit, the bar raised to \$5,000, then \$100,000, and then \$250,000 by 2008 (Aliber & Kindleberger, 2015). The decisive step was removing limits altogether under certain circumstances:

When large banks got into trouble, the FDIC deliberately removed all limits on the amounts of deposits covered by the guarantee to halt imminent runs and in practice it established that banks with significant deposits over \$100,000 were 'too big to fail' (Aliber & Kindleberger, 2015: 255).

The bailout of Continental Illinois National Bank in 1984 is a seminal moment in the institutionalization of 'Too big to fail' policy. This crisis will now be discussed in detail.

## **5 The Banks that were 'Too big to fail'**

The formal legal authority to provide bank bailouts was added in 1950 to the original Banking Act of 1933 used to incorporate the FDIC. It was to take twenty one years before that authority would be utilized. Between 1950 and 1971 no bank bailouts were granted in the United States (McKinley, 2011). During the decade starting in 1971 three bank bailouts were granted (Sprague, 1986). In 1971 Unity Bank and Trust Company of Boston was bailed out, with bank assets valued at \$11.4 million; in 1972 \$1.5 billion Bank of the Commonwealth of Detroit followed; then, in 1980 First Pennsylvania Bank of Philadelphia, valued at \$9.1 billion was rescued. However, it was the case of Continental Illinois in 1984 that represented a key juncture in the history of bank bailout policy.

Prior to the financial crisis of 2007/08, Continental Illinois National Bank stood as the largest bank failure in the history of the United States. Valued at the time of rescue at \$41 billion, the institution dwarfed the combined value of the three banks receiving bailouts during the previous decade. Perhaps more noteworthy than the bailout size was the fact that Continental's rescue marked the first time in financial history when specific private banks were explicitly acknowledged to be 'Too big to fail'. The policy was officially acknowledged in 1984 when in testimony to Congress

on the Continental Illinois rescue, the Comptroller of the Currency declared that the eleven largest banks would not be allowed fail under any circumstance due to their importance to the financial system (Morgan & Stiroh, 2005; O'Hara & Shaw, 1990). The term 'Too big to fail' was coined by Congressman Stewart McKinney in 1994, as a way to frame the logic of this new approach to bailout policy (Gorton & Tallman, 2016). I now provide a detailed analysis of the political economy driving the decision to rescue Continental Illinois.

Irvine H. Sprague's (1986) study is a primary source for the analysis below. Sprague was either the director or the chairman of the FDIC for all four bailouts running from 1971 to 1984, and provides an illuminating insider's account of the institutional logic that determined whether or not to grant bailouts during bank failures. The caveat is that Sprague is discussing major political-economic decisions in which he played a central role. Thus while Sprague is best placed to explain the institutional logic at work, he also has a personal interest in justifying the FDIC's actions during the bailouts. However, since there is independent corroborating evidence to support key claims made by Sprague regarding his and the FDIC's motives and methods for implementing a rules-based process for bailout implementation, his study provides a credible and valuable source.

Sprague (1986: 22-32) outlines the legal framework under which the FDIC operated during the first four bailouts spanning 1971-1984 in which he played a role. The FDIC's three person board had full authority to grant a bailout, so long as two of the three members voted in favour. Bailout was one of three options for dealing with troubled banks. The other two options were to pay off a failed bank, meaning that insured depositors get paid, or sell the bank with assistance by the FDIC (ibid: 22). Sprague points out that bailout was the least used, with payoffs and sales covering 99 percent of all cases through to 1986. He outlines the general outcome of each of the three options when implemented. With a payoff insured depositors get promptly paid, the bank is liquidated, the community loses its banking services and creditors and uninsured depositors 'are at the mercy of the liquidation results' (ibid: 22). By

contrast, if the option of selling the bank is taken, insured and uninsured depositors and creditors are fully protected, while banking services are maintained in the community. During both payoffs and bank sales the FDIC assumes all bad loans for liquidation and covers deposit liabilities, however stockholders in the bank typically lose all or most of their asset value, as they fall to the bottom of the queue for any returns from liquidation.

The final option is a full bailout, which means 'the bank does not close, and everyone—insured or not—is fully protected, except management which is fired and stockholders who retain only greatly diluted value in their holdings' (ibid: 23). Thus, during this period of the FDIC's history bailouts have outcomes that clearly reduce moral hazard, including firing of management and shareholders facing major losses if a bank requires rescue. However, Sprague does acknowledge that with a bailout it is 'impossible to structure a transaction that does not provide at least the possibility of some residual value to stockholders and creditors of the failing institution' (ibid: 29), in a situation where they would otherwise face total losses if the bank failed. Consequently, moral hazard cannot be totally avoided. As a result, the FDIC's 'preferred' option historically during the period that Sprague oversaw was to sell a failing bank, due to the fact that this option involves least disruption to the community's services and lowers levels of moral hazard. Analysis will now focus on the final option, the bailout.

The rule governing whether or not the FDIC approves a full bailout is termed the 'essentiality doctrine'. Sprague outlines the doctrine as follows: 'The board need only make the finding that the insured bank is in danger of failing and is "essential to provide adequate banking service in its community"' (Sprague 1986: 27). As Sprague himself points out, this entails a large degree of discretion, since no detailed directions are provided for deciding 'essentiality', nor is the term 'community' defined. Any decision ultimately 'boils down to a judgement call by the FDIC board' (ibid: 28), requiring two out of three members to be in favour. Nevertheless, Sprague argues that the institutional approach of the FDIC has been to view bailouts as a

nuclear option, and that board members have traditionally been reluctant to apply the essentiality doctrine unless 'they perceive a clear and present danger to the nation's financial system' (ibid: 28-29).

The statistics on FDIC approved bailouts support Sprague's claim in this regard. During the 1970s only three banks were approved under the essentiality doctrine. Of eighty cases requiring FDIC assistance during 1984, sixteen were payoffs, sixty-three involved sales, and one bailout was approved. In the following year the FDIC was required to resolve 120 bank failures, with 29 payoffs and 91 sales. In 1986 there were 108 cases, with 75 sales and 30 payoffs (ibid: 22-23, 35). Continental was deemed essential to the national banking system due to both its size and level of inter-connectedness with the wider financial system (Sprague, 1986; Zardkoohi et al., 2018).

Continental had grown aggressively throughout the 1970s and early 1980s, so that by December 1983 it was the largest bank in the Midwest, and the eighth largest bank in the United States, with assets of \$42.1 billion (Swary, 1986). However, issues began to arise with the quality of the loan portfolio upon which this growth was built. Sprague documents an article in the *American Banker* in 1981 which observed the following: 'It can be said that Continental's spectacular loan growth in recent years is less a matter of sharp pricing than it is of finding customers to whom the bank has been willing to lend more than the competition' (*American Banker*, quoted in Sprague, 1986: 150). This observation was later proven to be well-founded. During assessment of Continental's risk profiling by the FDIC in preparation for providing financial assistance, it was revealed that the bank had systematically assigned far higher credit ratings to customers compared to other banks who had also rated those customers (Sprague, 1986: 170).

The ensuing build-up of bad debt would prove to be the ultimate cause of Continental's failure. However, a series of financial shocks in 1982 were the proximate cause. Penn Square bank failed in 1982, followed by a securities trading agency Lombard-Wall. There was also international financial turmoil in 1982, with



Mexican and Argentine debt crises, as well as a number of corporate bankruptcies, all of which Continental had exposure to. By the second quarter of 1984 the bank reported bad loans totalling \$2.7 billion. As bad news followed more bad news, foreign uninsured depositors began withdrawing large amounts of money, and the ten days starting May 9<sup>th</sup> 1984 saw \$6 billion in withdrawals (Sprague, 1986: 153). The writing was on the wall for the bank, unless help was forthcoming.

Help was forthcoming from the FDIC. Sprague goes through the options the board discussed in coming to the decision that Continental met the essentiality doctrine and a full bailout would be provided (Sprague, 1986: 155-160). As discussed earlier, the preferred option for the FDIC was to seek a sale of the troubled institution. However the scale and speed of the Continental crisis meant there was no time to set up a sale. Another factor that militated against a sale was the sheer size of Continental, and the complexity of its accounts. In the circumstances and time pressure sale was ruled out by the board. The next option was to provide a payoff of insured depositors and let losses fall where they may. This option would have cost \$4 billion, but would have covered only 10 percent of Continental's funding base. Sprague notes this 'seemed a temptingly cheap and quick solution' (ibid: 155). The problem, he argued, was the relationship of those losses to the rest of the banking system, and whether or not it would result in a cascade failure. The FDIC made an initial estimate of Continental's integration with the wider system, stating 'more than two thousand correspondent banks were depositors in Continental' and calculated that 'fifty to two hundred might be threatened or brought down by Continental's collapse' (ibid: 155).

This initial judgement was borne out when more precise figures were available after the FDIC had time to go through the books. These showed that 2,300 banks had invested in Continental; 42 percent of these had invested over \$100,000 to a combined value of \$6 billion; 66 banks representing \$5 billion in assets had 100% equity invested in Continental, while a further 113 banks had between 50 and 100 percent of their equity invested (Davison, 1997: 250). These banks would have been

decimated by its failure. Furthermore, the FDIC board were certain in light of historical evidence that a massive loss of confidence would follow the failure of Continental and its dependent banks, and this would threaten the funding lines of the entire nation's banking system, sound and unsound alike. The decision was taken by the three-member board of the FDIC to provide all assistance needed to ensure Continental did not fail. This began as a \$2 billion emergency assistance, comprised of \$1.5 billion FDIC funding and \$500 million from seven large private banks, given as a subordinated loan to Continental (Davison, 1997: 244). The cooperation of the private banks was designed to indicate private sector confidence in the rescue, as well as provide time to assess the requirements of a final rescue solution. When the costs of a permanent solution were tallied total FDIC funding support would reach a further \$3.5 billion paid for discounted bad loans, as well as \$1 billion in stock purchases, totalling \$6 billion assistance (Sprague, 1986: 210).

Continental Illinois stands as a seminal moment in the institutionalization of 'Too big to fail' policy in the United States. In September 1984, during the political aftermath of Continental's rescue, the Comptroller of the Currency declared before Congress that 'some banks were simply "too big to fail" and that for those banks total deposit insurance would be provided' (O'Hara & Shaw, 1990: 1587). The Comptroller went on to identify the eleven largest banks at the time as qualifying for limitless insurance (Morgan & Stiroh, 2005). The legal and institutional norms were set, and 'Too big to fail' had become a publically acknowledged official policy of the leading capitalist economy, setting a precedent for a policy that would diffuse globally by 2008.

## **6 'Too big to fail': a case-study of institutional evolution**

The financial dramas described above help clarify why modern governments are unwilling to risk the immediate and catastrophic economic damage of systemic banking failure, despite the economic costs, moral hazard and potential political

problems that bank rescues pose. It is argued here that this process can be best understood as a case of institutional evolution disciplined by a process of variation-selection-retention. This implies that current bank bailout policy is a classic case of evolutionary change governed by factors that include but transcend human choice. This can be illustrated by applying evolutionary theory outlined in section one to the historical emergence of the policy.

To begin with, it should be noted that the regular crises that engulf capitalist economies are not a designed outcome of conscious planning by business agents or governments. Such crises are instead an unintended consequence of agents seeking to make as much profit as possible under the conditions given by capitalist markets. As such, recurrent capitalist crises are a developmental phenomenon peculiar to the workings of capitalist institutions, as is well-established in business cycle theory (Mitchell, 1941; Mullineux, 1990; Schumpeter, 1934; Sherman, 1991). Banking crises are one particularly dangerous type of recurrent crisis that are common to the history of all capitalist economies. The development and retention of some but not other policy responses to those recurrent crises is an evolutionary process. The history of bank bailouts exhibits initial institutional variation. The latter can involve imitation, innovation and planning (Aldrich et al., 2008: 584; Hodgson & Knudsen, 2010: 35), and therefore may involve 'artificial selection', referring to agent-directed policy responses.

New problems call for experimentation, as risk-calculation is initially limited by a lack of knowledge of past correlations, knowledge of causality between correlations, as well as lack of experience with regard to previous policy application and outcomes in similar events. Hence, responses to the earliest modern banking crises would have been based on ad hoc experimentation as a result of high uncertainty with regard to outcomes. However, as shown above there has been considerable reduction in variation in how governments respond to banking crises from the 18<sup>th</sup> century through to the 21<sup>st</sup> century. During the 18<sup>th</sup> and 19<sup>th</sup> centuries variation included engaging bailouts, letting banks fail, variation in the

combinations of public and private institutions providing support, and variation in what stipulations, if any, would be attached to offers of help with regard to reducing moral hazard. Private institutions such as the New York clearing houses and the Bank of New York played a major role in supporting Hamilton's response to the 1790 crisis in the United States. Many 19<sup>th</sup> and 20<sup>th</sup> century bailouts had a mix of private and public institutions acting as guarantors of liabilities, examples here are the bailouts in 1889 of Comptoir d'Escompte, the 1890 Baring Brothers bank rescues and the 1984 Continental rescue, all of which involved private banks acting as part-guarantors for government-led rescues. In other rescues the public authorities were solely responsible, for example in the 1839 Bank de Belgique rescue, and 1848 Schaaffhausen Company rescue.

In a number of instances the institutional response was to let large banks fail. Examples here were *Crédit Mobilier* in 1868 and *Union Générale* in 1882, *City Bank of Glasgow* in 1878, and *Foreningsbanken* in 1923. Likewise, during the Great Depression in the United States the authorities allowed banks to fail, with 608 banks holding half a billion in deposits failing in the last two months of 1930 alone (Grossman, 2010: 246). There has also been variation regarding stipulations attached to bailouts. The authorities of New South Wales gained authority to appoint board directors and dictate a number of operational practices upon rescuing the *Bank of Australia*. The Prussian authorities guaranteed dividend payments for selected shares, while also ensuring major costs were born by shareholders and creditors. In the *Baring Brothers* bailout a number of directors had their fortunes liquidated when the bank was rescued and reorganized as a limited liability company. Likewise, with *Continental Illinois'* rescue some losses were imposed on shareholders through share dilution and senior management was fired.

All of this variation involves considerable institutional innovation. Alexander Hamilton's work during the 1792 crisis is perhaps the most resounding example of innovation, given that he 'formulated and implemented "Bagehot's rules" for central-bank crisis management eight decades before Walter Bagehot wrote about

them in *Lombard Street*' (Sylla et al., 2009: 61). Bagehot's *Lombard Street* is considered to be a landmark text on banking crisis resolution. It covers institutional policy that is today standard in Central Bank operations, such as lender-of-last-resort functions and open market purchases for stabilizing asset prices (Bagehot, 1873). While Hamilton added novel elements, he also was limited by the financial tools available to him. Having no central bank meant that Hamilton had to experiment by relying on cooperation with private institutions to implement his plan.

Variation is reduced by 'selection', which refers to 'the mechanisms that bring about the survival of some variations rather than others, often reducing variety' (Aldrich et al., 2008, p. 584). Selection pressure arises from the need of governments to ensure ongoing economic reproduction. Any solutions which fail in this goal will be subject to subset selection, a process that reduces variation. Bank bailouts do ensure ongoing reproduction, but at a cost. One key problem with bank rescues is that they result in moral hazard, which can itself lead to the very problems that authorities are trying to avoid by encouraging banks to take excessive risk in the view they will be bailed out. Aside from potentially creating the conditions for a banking crisis, moral hazard is also politically contentious because it is fundamentally contrary to capitalist ideology that argues profit-taking is justified by risk-taking. As a result, moral hazard creates both technical and political problems, whereas a commitment not to rescue failing banks resolves both of these issues.

Thus one might reasonably have expected institutionalization of a policy of non-rescue to have emerged over time as the selected response of authorities. However, two outcomes have prevented this. The first and most important outcome is the danger that a full-blown banking crisis represents to the functioning of a capitalist economy. The second is that moral hazard can be reduced by stipulating onerous conditions as part of a rescue, thereby reducing both the economic effect of excessive risk-taking by agents who believe they will be bailed out, and also reducing political rancour. It is worth discussing each of these issues in turn.

Authorities ultimately have to ‘weigh the benefits of preventing panic now against the cost of reducing riskier activity later’ (Goodhart, 1999: 353). The more knowledge authorities have of past banking crises, policy responses and outcomes the better they can calculate the risks of systemic failure. Thus the potential for progressively better risk management and policy choice arising through a reduction of uncertainty. During the 19<sup>th</sup> century we saw that for a time the French authorities were resolute in their determination to let market forces govern, and thus refused to intervene during banking crises. The authorities did not initially foresee the powerful effects bank failure would have on the economy, nor did they foresee the regularity that such crises could occur. However, the frequency of these crises and their effect on business confidence led the French authorities to change course and begin utilizing bank rescues. Similarly, the Norwegian government refused to rescue the Foreningsbanken, which led to a growing panic during which the Norwegian government reversed course and began bailing out banks.

Another case of policy reversal resulted from the Great Depression in America, when thousands of banks were allowed to fail. In the aftermath these failures were recognised as significantly deepening and prolonging the crisis – a gain in knowledge that would affect future risk calculation. The Great Depression was so severe that it posed a threat to capitalist legitimacy in America, indicating that the costs of letting banks fail was greater than the risks involved in saving them. Furthermore, risks accruing from bailouts such as moral hazard and political discontent could be reduced using policy measures. Goodhart (1999) points out that the issue of moral hazard has been recognized from early on in the history of bailouts. The cases discussed above support that view.

It is argued here that ‘natural’<sup>3</sup> selection pressures arising from the structural propensity of capitalist economics to generate business cycles, combined with the special role of the banking system in a capitalist economy has resulted in bailouts

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<sup>3</sup> By ‘natural’ I only wish to emphasize that these are factors that are not the result of human agency.

being selected as the favoured response. A banking sector collapse will bring a modern economy to a stand-still (Grossman, 2010; Nicolaisen, 2015). Selection is the mechanism by which variation is tested and reduced in a given environment (Buskes, 2013; Hodgson & Knudsen, 2010). In the case of bank bailouts, letting systematically important banks fail is no longer considered to be a viable option by authorities in any modern economy. 'Too big to fail' policy is today a defacto globally adopted policy (Baker & McArthur, 2009; Goodhart, 1999: 356; Gup, 2004b: 31; Mishkin, 2006: 989), highlighting a winnowing selection process over time. This winnowing should be viewed as a consequence of a gain in knowledge with regard to the effects of letting major banks fail, and as a result a reduction in uncertainty over policy outcomes relating to letting banks fail versus state intervention.

Selection pressures force 'interactors', for example institutions such as central banks, to acquire or develop new 'replicators'. As discussed, replicators are bits of information concerning adaptive solutions to problems. Replicators can diffuse through a variety of mechanisms, some of which can be identified as likely candidates for the spread of 'Too big to fail'. For early bank rescues it is difficult to specify the exact channels of diffusion, although some potential avenues can be identified. With early rescues during the 18<sup>th</sup> and 19<sup>th</sup> centuries a large amount of variation regarding bailout implementation, and the stipulations attached when the policy was used, indicate much ad hoc innovation by authorities facing largescale uncertainty with regard to both bank failure and policy outcomes. However, Goodhart (1999) points out that the first major and systematic theoretical treatise on how to deal with banking crises was published by Henry Thornton in 1802. Following that, Walter Bagehot published *Lombard Street* in 1873, with a French version printed a year later (Bagehot, 1874).

These publications indicate that intellectual ideas on solving banking crises began circulating at the turn of the nineteenth century in Britain and Continental Europe. This also indicates that Alexander Hamilton was a true innovator during the crisis of 1792, which predates both Thornton's and Bagehot's publications. Further

diffusion of replicators for banking regulation across societies is found in the spread of banking laws. The free banking law passed in Canada during the 1850s was based on a similar U.S. law, while ‘certain aspects of English banking were influenced by the banking systems of Sweden, Scotland, Hamburg, Amsterdam, and Italy’ (Grossman 2010: 170). Japan adopted a version of the United States National Banking Acts on which to base its first banking code. In the twentieth century there emerged clear institutional means by which replicators relating to banking regulation could diffuse. Post-WW2 a number of major global financial institutions were created, including the World Bank and International Monetary Fund in 1945, and the Bank for International Settlements (BIS) in 1930. This last institution is especially relevant to global diffusion of banking policy.

The BIS is owned by 60 central banks accounting for 95 percent of global GDP, and its stated mission is ‘to serve central banks in their pursuit of monetary and financial stability, to foster international cooperation in those areas and to act as a bank for central banks’ (BIS, 2018). Westermeier argues that the bank ‘operates like a think tank in the field of financial policy-making’ (Westermeier, 2018: 1), and provides researchers and policy-makers with regulatory knowledge.

Organizationally, the BIS has become a major institutional channel for diffusion of knowledge and policy relating to all aspects of banking. Banking policy developed in the leading capitalist countries has diffused globally, with the OECD model becoming the global standard (Caprio & Vittas, 1997). Likewise, where only six countries emulated the FDIC’s deposit insurance scheme in the first three decades after it was established in 1933, today the policy is now a global norm (Mishkin, 2006; Nicolaisen, 2015).

During the 20<sup>th</sup> century technological and organizational capacities have allowed policy knowledge to be diffused quickly and effectively. On the other hand, it is also the case that technology and increasingly intertwined financial networks have also increased the speed at which financial instability can diffuse nationally and internationally. Thus, increased capacities for regulators have been matched by



increased potential for systemic risk, highlighting how new uncertainties emerge as a direct consequences of increases in knowledge and capacities for action that reduce uncertainty in other ways.

Consequently, the diffusion and convergence on a single policy choice, implemented by using a universally adopted central banking institution is a consequence of the interaction between true uncertainty in Knight's (1921) understanding, and an increase in knowledge that reduces uncertainty in relation to a specific type of event. As nation-states began adopting market systems from the 17<sup>th</sup> century it was initially unknown that the business cycle was fundamental to this system, that the banking system was highly susceptible to this cycle, and that this fact could result in situations of systemic risk. As modern market systems developed governments have been forced to adapt to this structural reality of capitalist economics, to experiment with solutions and then to adapt to further problems arising from such solutions. For bailouts these include moral hazard and undermining capitalist ideology, which in turn have demanded further policy measures.

Thus while risk management capacities and policy learning can and do increase human abilities to reduce some undesirable outcomes, policy solutions that are effective for controlling one outcome can through their implementation result in new uncertainties. Consider the outbreak of the social movement 'Occupy Wall Street' in 2011 in response to the bailouts of 2008. Occupy is one of the most significant social movements of recent times, one that 'burst out of nowhere' (Gitlin, 2013: 4). First, the movement spread nationally across the US, then became a global phenomenon, as the public expressed their outrage at bank bailouts, austerity and a general perception of excessive inequality and corruption, captured by the slogan "We are the 99%". As Gitlin (2013) points out, nobody expected either the emergence or widespread support for Occupy before the fact, even if in hindsight it appeared logical. The movement's extensive media coverage brought growing inequality to the forefront of American politics, and by December 2011 even President Obama was

'talking like an Occupier telling a Kansas audience in December 2011 that the "breath-taking greed of a few" had plunged the world into crisis' (Roberts, 2012: 755).

While there is debate as to the ultimate extent of the impact of Occupy on American politics (Roberts, 2012), it is clear that for a time it captured the public and political classes' attention, and threatened the possibility of radical upheaval. This was a classic case of the consequences of true uncertainty; a product of public rage at bank bailouts that was entirely unpredictable, both in the form of its manifestation as well as the eventual outcomes of the movement. Occupy, as manifestation of the wider anger over the 2008 bailouts has impacted the political calculus surrounding bank bailouts, and will likely encourage politicians to devise further ways to impose costs on recipients of any future bailouts. Thus, while bailouts have been shown to prevent systemic financial risk, and aside from issues of moral hazard it is the case that they can also generate systemic political risk in ways that are impossible to predict prior to their emergence. In light of fundamental uncertainty 'artificial selection', referring to a policy that compensates for a given social problem, always holds the possibility for unknowable outcomes, good, bad or indifferent. Uncertainty means that the elimination of undesirable outcomes during policy implementation is in principle an impossible task.

## **7 Concluding remarks**

The evidence presented here indicates that the global diffusion of bank bailout policy is a prime example of the selection of institutions governed by an evolutionary VSR (variation-selection-retention) dynamic. First, bailouts funded by state income essentially involves the socialization of private losses and the breaching of capitalist norms concerning the private ownership of profit and loss. To that extent it presents an ideological contradiction that threatens the political legitimacy of capitalism, as political reactions to 2008 have highlighted. Second, economic costs

are large, comprising significant fiscal costs to the state and the threat of future moral hazard. Thus, while bank bailouts negate immediate systemic risk during crisis, they generate slower-burning political and economic risks. As a result, the policy is far from constituting the most desirable solution, which is why governments have been loath to implement them unless no other option is available. It is the differential time-structure between potential long-term consequences versus short-term system collapse that results in the paradox of bank bailouts. Jon Nicolaisen, the Deputy Governor of Norges Bank, has described this paradox as the fact that 'Banks *should not* be bailed out, but they *must* be bailed out nevertheless' (Nicolaisen, 2015: 4 emphasis in original).

Despite the problems that come with bank bailouts, governments across the globe enacted this policy during the 2008 Global Financial Crisis to prevent the spread of systemic risk. This paradoxical institutionalization of bank bailout policy supports the view that artificial selection of institutions is only a special case of the Darwinian selection of institutions (Hodgson, 2004b: 296). If the artificial selection of institutions, meaning conscious choice, was the primary process by which general cultural evolution proceeded, as some argue (Brown, 2013; Commons, 1924), how are we to explain the selection of institutions which create almost as much problems as they are intended to resolve. Theories of artificial selection cannot provide a convincing account of the general evolution of complex systems, in part because so much institutional evolution is sub-optimal.

Bank bailouts are not an optimal policy, but in the face of radical uncertainty about the future no policy can ever be optimal, if the latter is taken to mean no possibility for an undesirable outcome. From the perspective of an evolutionary ontology 'good enough' rather than 'optimal' is the baseline criteria for selection. Bank bailouts have thus far shown themselves to be good enough at solving systemic bank failure to warrant selection. In that light, the institutionalization of 'Too big to fail' bailout policy is not an outcome of foresight and planning, but rather of reaction and experimentation to an unintended effect of free markets, the

capitalist business cycle. Furthermore, it is not by chance that deposit insurance and bank bailout policy are today a global norm, while market-based policies that ideologically align with capitalist norms, such as letting banks fail, have been consigned to the financial dustbin.

Such outcomes are indicative of an evolutionary trend, in which economic relations evolve according to their institutional logic under conditions that involve wider sets of environmental constraints, both cultural and material in nature. In this way social evolution presents unexpected problems for agents who then engage institutional innovation, which, if successful may be copied by others facing similar problems. Such diffusion was identified by Veblen as ‘a process of natural selection of institutions’ (Veblen, [1899] 2007), thereby emphasizing the limits of agency to determine how a complex, open system evolves.

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Conflict of interest: The author declares that they have no conflict of interest.

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