Abstract

How influential are prominent jurisdictions in the international financial system for actually changing regulatory governance in less prominent, but emerging countries? If they are influential, what mechanisms leverage this influence? This paper aims to explore these questions. It focuses on a specific policy and context, the adoption of independent financial supervisors between 1990 and 2007. Two theories of policy-making independence are tested against each other. The first—veto players—posits little or no relationship between where a country is positioned in the international economic system and its likelihood of adopting supervisory independence, rather than central bank or ministry of finance based regulation. The second—McNamara and Blyth’s sociological institutionalism—argues that when less prominent jurisdictions face uncertainty about how to achieve economic growth because of crisis, they look to prominent jurisdictions for policy templates. An event history analysis of transitions towards the UK Financial Services Authority model is used to test these propositions. It provides evidence that the domestically focused veto players approach is particularly insightful during periods of ‘normal politics’, i.e. when levels of financial crisis are low and there are clear policy alternatives. However, in times of local crisis less prominent countries adopt globally prominent ideas to overcome means-ends uncertainty, possibly even regardless of their veto players’ relative locations.

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Considerable attention has been given to the causes of central bank independence (CBI). This was partially the extension of academic interest by, among others, Kydland and Prescott (1977), Barro and Gordon (1983), and Rogoff (1985) who had encouraged the CBI trend with their work on the need for credible commitments in monetary policy. Also, it was in response to a clear global shift in institutional design from dependent to independent central banks that appeared in the late 1980s (see McNamara, 2002, 49) and to a large extent culminated in the creation of the highly independent European Central Bank.

Directly following this movement was a less well studied, but related institutional change trend; financial supervisory independence (FSI). This paper aims to examine the causes of this phenomenon using a number of the theoretical lessons learnt from the study of central bank independence.

Among the wide variety of explanations for CBI, two general approaches are notable for their seemingly contrasting explanations; veto player theory and sociological institutionalism. The paper begins with a brief overview of these literatures in Section 1. Section 2 discusses the context of financial supervisory independence in the late 20th century, including regulatory changes in the United Kingdom, the development of academic arguments for independence, and international organisation support, especially from the Basel Committee for Banking Supervision (BCBS). From these discussions, a number of hypotheses are generated in Section 3 by adapting theories of CBI to financial regulation in an attempt to explain the trend towards FSI in the late 20th and early 21st centuries. Sections 4 and 5 test these results using an event history model with a sample of 30 countries that made financial regulatory reforms between 1990 and 2007. In times of normal policy-making countries with many polarised veto players were more likely to adopt FSI, provided the idea had been advocated by prominent members of the international community. However, there is evi-
dence that countries facing economic crisis were much more likely to adopt an
independent regulator regardless of the level of polarisation between their veto
players. The analysis also indicates that this trend is not affected by whether
or not a country is ‘emerging’.

1 Veto Players, Sociological Institutionalism, and
Central Bank Independence

The literature on central bank independence is wide-ranging and highly devel-
oped. Possible explanations for why politicians would relinquish control of mon-
etary policy includes works by Bernhard (1998) who focuses on asymmetrical
information between members of the government and Goodman (1991) who ar-
gues for the importance of strong ruling conservative coalitions with nonetheless
short life expectancies. Two sub-literatures have been notable in this crowded
field for their ability to explain events and contrast clearly with each other.
This section discusses these two approaches: veto player theory and sociological
institutionalism. Particular attention is given to the veto player argument made
by Hallerberg (2002) and McNamara’s (2002) sociological propositions.

1.1 Veto Players: Number and Relative Location

Veto player theory allows for the incorporation of relevant actors, regardless of
their type, be they political parties, presidents, or state legislators, and their
relative policy positions into fairly parsimonious models of political decision-
making. To use Tsebelis’s (2002) definition, “veto players are individual or
collective actors [that] have to agree to [a] proposed change” to the status quo.
In general, Tsebelis argues that the possibility for change to the status quo
will decrease as the number of veto players and the difference between their
preferences increases (2002, 2). With fewer veto players, actors who can say no to change and/or with veto players who have similar preferences it is easier for one to change the current policy to something closer to their liking.

Veto player theory predictions reverse when we consider the decision to alter a status quo policy of central bank dependence to independence. Despite some variation in the consideration of the relevant veto players—parties or institutions for example—authors in this literature propose a conclusion that is initially counter-intuitive to the general veto players theory:

Political systems with more veto players whose preferences are farther apart are more likely to change from having a dependent central bank to an independent one.

This line of argument was partially initiated by Bernhard and Leblang’s (1999) work on exchange rate regimes. Fixing a country’s exchange rate is to in affect create more monetary policy independence as the government loses the ability to either boost imports or exports through manipulation of their currency’s value. Bernhard and Leblang argue that when governments face an electoral system that imposes considerable penalties for losing, they will not want to give up the power to boost the economy before elections. Conversely, in systems where the costs of losing are low, i.e. when the opposition is involved in policy-making, exchange rates will be fixed. Fixed rates provide a focal point for the various parties to agree on. In reality, this implies that systems with few and closely positioned veto players, such as the United Kingdom’s majoritarian parliament, would be expected to have floating exchange rates. Those, like Denmark, with many veto players who are far apart should have fixed exchange rates.\footnote{Such a dichotomous prediction is not novel to veto players theory, but also posited by Lijphart (1999) in regards to central banks, for example.}

A key assumption made by this and subsequent veto player arguments is that voters choose who they will vote for based on retrospective evaluations of
economic performance (Hallerberg, 2002). Incumbent office-seeking politicians (see Mayhew, 1974), would ideally like to create good economic performance in a demonstrable way. It's not just about creating a prosperous economy, but also making sure that voters know you created it. Hallerberg labels these two dimensions controllability and identifiability (Hallerberg, 2002, 785).

A great many authors have observed that politicians' office-seeking tendencies and their link to controllability and identifiability are mediated by a number of institutional factors (see in particular Duverger, 1954, Lijphart, 1999). Plurality or majoritarian electoral systems, typified by the United Kingdom's, generally have two major parties that compete with each other in low-magnitude electoral districts resulting in one-party-majority governments. The number of veto players is very low, often even only one, the governing party. Polarisation also tends to be low. Regardless of the measurement unit of polarisation, the distance between one veto player's preference and itself is zero.\(^2\) Policy control is high because the small number of veto players allows governments to enact their chosen policy. It is also easy for voters to identify which politicians, or at least parties, contributed to making a successful economic policy or vice versa (Hallerberg, 2002, 785-786).\(^3\)

\(^2\)Assuming that the party is homogeneous. Regardless, ideological distance within a party will often be small, because it is assumed that people join the same party due to a fair degree of ideological closeness.

\(^3\)A number of authors (Alesina, 1989, Nordhaus, 1975) have argued that office-seeking politicians with control of monetary policy will 'pump up' the economy before elections by lowering interest rates. A political business cycle is created when, following elections, the money supply needs to be tightened to control inflation, slowing economic growth. Others
Proportional or consensus political systems tend to show the opposite set of characteristics. Proportional electoral systems with high district magnitude generally have many political parties (Taagepera and Shugart, 1989). When candidates can win office with less than a plurality of the votes than those from smaller parties are more able to win elections more frequently. With more parties represented, the possibility of one-party government decreases. Coalition governments ensue. More parties in government means more veto players. Control of policy is now split among these veto players; in general decreasing any one veto player’s ability to set policy.\footnote{This is of course not always the case as some veto players may become, for example, agenda setters leading to increased control.} Expected polarisation also increases.

In such situations not only is control by any veto player difficult, but voters also begin to lose the ability to identify parties responsible for economic successes or failures. Having a dependent central bank loses its advantages in these situations, because no one veto player can control it in order to pump up the economy before an election. Since voters can almost never vote for coalitions, only parties, economic improvements will not result in gains for the coalition as a whole. More likely, rewards will be given to certain parties that have avoided scandals, are the largest, or control the finance ministry. Uneven distribution of electoral benefits, or costs, threaten the strength of coalitions (Hallerberg, 2002, Bernhard, 1998, 788). Not only is the resistance to central bank independence less in multi-veto player systems than in majoritarian ones, but they may even actively favour independence as it potentially ensures that one veto player can’t use monetary policy to their advantage and to the detriment of the other veto players.

More parties does not necessarily lead to higher polarisation nor does the have argued that left parties, who gain electoral support from workers, are more likely to conduct this sort of pumping than investor-oriented right parties (Hibbs, 1977).
creation of other veto points through federalism, bicameralism, etc. Despite institutionalising more veto players they may be closely positioned. In these cases, though the stated number of veto players has increased the system behaves more like a majoritarian one. These actors are in effect absorbed into one another (Tsebelis, 2002, 80). In terms of identifiability and control these systems probably will not behave in a similar way to purely majoritarian ones, however. Control may be high in the sense that the veto players can get a policy that they prefer. However, voters will still have difficulty identifying responsible parties. The veto players will therefore not be particularly adamant about retaining central bank dependence.

Finally, if there are only a few veto players, but they are highly polarised the level of identifiability may be high, but control is expected to be low. Central bank dependence will also be not particularly attractive. These predictions are summarised in Table 1.

Conclusions from the original veto player theory and updates of the theory for CBI are generally made without considering a jurisdiction’s level of political or economic development. However, observational evidence that includes countries at various levels of development suggests that there may be a relationship. Andrews and Montinola (2004) start from Hellman’s (1998) study of reforms in former Eastern Bloc transition economies to argue that policy change in emerging economies actually increases as the number of veto players increases. Their argument is based on variation in the status quo of a jurisdiction’s rule of law. In advanced economies, the rule of law is firmly established. ‘Reform’ in these countries is closely associated simply with policy change, which, as discussed, is affected by the number of actors who have to agree to change. In emerging economies status quo rule of law is generally lower. Reform involves not only achieving agreement among veto players, but also ensuring that corrupt policies
are not chosen over policies that advance good governance. Having more veto players, Andrews and Montinola argue, decreases the likelihood of corrupt policy adoption. Systems with single veto players would be less likely to adopt central bank independence because they would be more able to control monetary policy for their own political ends like pumping the economy before elections and collecting rents. Systems with more and competing (i.e. polarised) veto players are more likely to create CBI because each has an interest in preventing monetary policy manipulation by others. The predictions from Andrews and Montinola’s examination of veto players in emerging economies align with Hallerberg’s and contradict traditional veto player theory.

Since these hypotheses make observationally equivalent predictions for emerging economies or even other less developed countries it will be difficult to discern which one best explains the phenomenon if it is seem. Both emerging and non-emerging countries should be included in studies of CBI. If the predictions are observed to hold true for both emerging and non-emerging countries than this would be evidence for Hallerberg’s veto player theory and some, though certainly not conclusive, evidence against the emerging economy veto player theory.

1.2 Sociological Institutionalism: Policy Failure

Veto Player theories proposed ways that CBI is used by actors to help win elections. A number of sociological institutionalists, especially McNamara (1998, 2002) and Blyth (1997, 2002, 2003), contest this approach. They highlight yet another issue for political decision-makers that greatly effects policy outcomes: means-ends uncertainty.

Veto player theories concentrate on how institutional structures, such as electoral or parliamentary decision-making rules, and conflicting preferences hinder the achievement of actors’ own preferences. Sociological institutionalists prob-
lematise the otherwise a priori assumed idea of individuals’ policy preferences. In the complex area of monetary policy it is difficult for policy-makers to know what means they should use to achieve their electoral ends. Though they may want to be re-elected and believe that fostering economic growth will help them achieve this goal, it is unclear how monetary policy should be used to this end. Despite considerable theorising, discussion, and research in the economics community, McNamara (2002, 57-58) argues that there are still many uncertainties about how monetary policy mechanisms should be used to promote economic growth.

Given the uncertainty over how to achieve economic growth with the complex monetary policy tool, actors might shift their focus to achieving a different set of goals. McNamara brings our attention to the cultural setting that provides actors with an instrumentally rational incentive to borrow others’ institutional practises that are perceived to be successful and prominent. Building on a number of organisational theories including Scott, Meyer and associates (1994) and Powell and DiMaggio (1991), she argues that

- Political elites face a host of challenges in governing their economies, and the social environment that they move within may provide central bank independence as a solution, even if not actually tailored to their specific circumstances. (2002, 61)

Central bank independence, she argues is an idea surrounded by numerous prominent and successful social institutions ranging from the World Bank, the United States government, elite academia, and the business press. They have created and reinforce through social benefits, such as financial credibility and legitimacy, a template for monetary governance that can be copied by less prominent political systems in-spite of their economically functional needs.

Despite being office-seeking, actors are often unable to guide the economy
1.2 Sociological Institutionalism: Policy Failure

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with monetary policy to ensure growth and ultimately their re-election. Instead they do the next best thing in the context of an international economic system; copy what seems to work in other countries and is supported by the most prominent members of this community. The adoption of CBI in South Korea and Japan appears to be particularly supportive of this explanation. Even though they had not faced the problems that functionalists argued CBI was supposed to cure, such as high inflation, they nonetheless adopted it. Furthermore, in contrast to the veto players theory, if there are social incentives to adopt CBI then it should be adopted more often regardless of the number of veto players and their level of polarisation.

Such a conclusion is not on the face of it unique to the sociological institutionalists. According to principle-agent theories, that heavily advocate CBI, widespread adoption should be expected. They too highlight politicians’ uncertainties about how to achieve economic growth and conclude that the functional solution to this problem is to delegate decision-making to agents who can develop expertise (Thatcher and Stone-Sweet, 2002). Delegating to agents at an independent central bank is expected regardless of veto players or polarisation, because of its functional usefulness rather than its high social standing. Since both theories seem to predict the same outcome, we need to consider the other implications of the sociological institutionalists theory so that we can separate observed outcomes from principle-agent theory.

The implications of sociological institutionalism thus far have been to establish a homogeneous diffusion model for CBI that results in the same outcome, i.e. universal CBI, as the logic of delegation in its most basic form. Assuming homogeneous diffusion, however would produce a different adoption pattern if observed over time. If a policy diffuses homogeneously from a prominent country in the international economic system is defined as one that is, for example, regularly written about in the international financial press, whose actions are frequently studied in academic financial articles, and mentioned frequently at international
try, we would expect to see a gradient of adoption emanating from a central point (Lee and Strang, 2006, 894) with the only parameters being degree of social relatedness and time. Imagine that if we arranged the political systems of the world on a line with the prominent countries at the centre, closely socially related countries near them, and less closely related ones farther away. At times approaching $t_0$ we would expect the highly related countries to have adopted CBI, but not those farther away. As time increased from $t_0$ the set of countries that adopted the policy would expand outward. For example, if the United States adopted a prominent policy, then countries such as Canada and the United Kingdom would institute it next, followed by Western European countries, etc. Principle-agent theory conversely, predicts an adoption pattern not defined by social relatedness to the prominent member or otherwise. Veto player theory would condition it based on the number of veto players and their polarisation.

Though some studies have included variations on the homogeneous diffusion model in order to test sociological propositions (see Elkins, Guzman and Simmons, 2006) it is a poor approximation of this literature’s hypotheses. Probably more important than level of social relatedness to a prominent member for determining adoption is level of uncertainty. Monetary policy is fairly uncertain in general. Financial crisis creates uncertainty of a qualitatively higher level. In a crisis, means-ends uncertainty is heightened for all actors. Polarisation on the response to the crisis at hand disappears because actors can not even place their preferences in relation to either the event or other actors Blyth (2002, 32). At this time the policy is depoliticised and actors begin to converge on the prominent policy. One issue where all of the veto players likely agree is the need to change the current policy. In a crisis, a means that almost certainly does not financial conferences. It should be noted that prominence does not necessarily equate with influence.
lead to desired electoral ends is the status quo policy.\footnote{Note that this contrasts with Simmons and Elkins (2004) who include crisis in their event history model not as a mechanism of diffusion, but as a functionalist control variable. They hypothesize, that countries with similar experiences with economic shocks will find it individually rational to adopt similar policies. In their study they propose that having a currency crisis should hinder the adoption of the prominent policy of eased capital controls. Their evidence points in the other direction, i.e. currency crisis actually decreases the likelihood of maintaining restrictive capital controls. Given the current paper’s propositions, and counter to the conclusions of Simmons and Elkins (2004), these results are largely in line with the hypothesis that crisis is a diffusion mechanism.}

Secondly, and not entirely unrelated to uncertainty, is the importance of a country’s level of economic development. Under homogeneous diffusion more similar countries would be more likely to adopt a policy. The policy would eventually trickle down to emerging economies. Chwieroth (2007) suggests that emerging economies may be more likely to adopt a prominent policy to overcome general credibility problems,\footnote{It should be noted that Chwieroth does find that the level of the credibility problem varies within emerging economies based on country specific political factors.} not just in crisis. Established markets may not need to adopt a prominent policy, because they have a longer track record of policy stability. Regardless of the level of crisis, emerging economies should be more likely to adopt prominent policies in order to improve their credibility with international markets.

A sociological institutionalist model of policy diffusion is therefore better conditioned by uncertainty and level of economic and political development than just social affinity. At higher levels of crisis and for emerging economies, adoption of prominent policies should be more likely.

\section{FSI in the 1990s}

While central bank independence and its causes have been heavily studied in the academic literature, financial supervisory independence has gone fairly unnoticed. How much are these two trends related and how well do the theories attempting to explain CBI also explain financial regulatory independence? This
section primarily addresses the first question with an overview of developments in financial regulatory independence in the 1990s and early 21st century. The latter question is addressed in the following section.

Since the mid-1990s supervision of the financial sector has been changing considerably with an increasing focus on the need for an independent and unified supervisor. Major institutional financial supervisory reforms in this era, like central banking reforms began to emphasise the need for independent regulators; independent from politicians and the central bank. According to Masciandaro, Quintyn and Taylor (2008, 833), the establishment of the United Kingdom’s Financial Services Authority (FSA) in 1997 saw the first major discussions of the need for supervisory independence. Simultaneously, academic support was being advanced for separating banking supervision from both the ministry of finance and the central bank (Quintyn, Ramirez and Taylor, 2007) where it had traditionally been positioned (Barth et al., 2002).

The London School of Economics’ (LSE) Financial Markets Group was at the centre of advocating FSI at this time. In a volume entitled *The Emerging Framework of Financial Regulation* published in 1997, Goodhart and Schoemaker argue that not only should financial regulation and supervision be separated from government control, but that it should also be separate from the central bank. When central bankers have responsibility for both monetary policy and banking supervision they face an inherent conflict of interest. The conflict becomes especially pronounced in financial crises. Monetary policy is counter-cyclical, e.g. interest rates are lowered to stimulate a declining economy and raised to slow down an excessively growing one. Financial supervision, primarily in the form of capital adequacy requirements, is pro-cyclical. In good economic times it is easy to obtain the stipulated level of capital, while in crises it becomes difficult to do so. In a crisis, maintaining capital adequacy levels
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will prevent the decline of interest rates. Banks will be less willing to lend to institutions that look fragile and will charge higher interest rates. This creates a conflict of interest that Goodhart and Schoemaker argue may be alleviated by a separation between central bankers and financial supervisors.8

Furthermore, there is an argument, though less frequently discussed, for a unified financial regulator. Having a single regulator would be able to respond to the growing interrelatedness of banking functions and global banking generally.

Despite even the reservations of academic proponents, the idea of the need to separate financial regulators into an independent agency gained particular credibility through its adoption in the United Kingdom and, like the idea of independent central banking, international organisation promotion. The Basel Committee for Banking Supervision (BCBS) even included the idea as its first core principle of banking supervision (1997). These core principles were subsequently adopted by the International Organisation of Securities Commissioners, the International Association of Insurance Supervisors, the International Monetary Fund, and the World Bank.

3 Is Independence Comparable?

How could theories employed to explain central banking independence be applied to supervisory independence? This section develops hypotheses derived from veto player theory and sociological institutionalism in an attempt to answer this question. Interactions are also proposed to help test the relative importance of these approaches. Sections 4 and 5 then test these.

8It is important to note that this recommendation is fairly tempered. They especially note that the conflict of interest is conditioned by the countries financial context (1997, 143). They also predict that even with statutory separation, the central bank and supervisor will likely work closely together (1997, 160).
3.1 Veto Players & FSI

The application of veto player theory to supervisory independence from political decision-makers is fairly straight-forward. In a situation with few veto players and low polarisation, control of banking supervision allows the veto players to direct benefits towards voters. If a bank is having difficulty meeting capital adequacy requirements and may fail, then control of the supervisor would allow them to alter its requirements in order to maintain its solvency. For example, in 2009 the US Financial Accounting Standards Board eased mark-to-market rules allowing banks to limit their declared losses resulting from the 2008-2009 financial crisis (Scannell, 2009). Though this decision was taken by an independent agency, political control of these rule changes could be used by veto players to improve their re-election prospects. As in the case with other combinations of veto players and polarisation, there is much less incentive to control these decisions.

From this discussion we can generate the hypothesis that:

Political systems with fewer veto players and less polarisation will be more likely to retain financial regulatory dependence than other systems.

This is modified slightly in the emerging markets veto player hypothesis where the same outcome would be observed, but it would be more pronounced in emerging markets where low veto player jurisdictions would be less likely to constrict their ability to extract rents by creating an independent supervisor.

Despite the direct application of veto player theory to financial supervisory independence, it is not clear how it would explain the shift to a unified financial regulator.
3.2 Sociological Institutionalism & FSI

Though even major proponents of unified FSI have significant reservations about its general application, its adoption by a prominent financial services power, the United Kingdom, and promotion by numerous international organisations indicate that adopting FSI would have significant instrumental benefits. According to the propositions discussed above, these benefits should be particularly important for countries facing immediate financial crisis. By adopting this institution they will gain credibility and legitimacy in the international financial community and among their own electorate.

The first hypothesis generated from this approach is that:

Political systems facing immediate financial crisis will be more likely to adopt a unified independent financial regulator than those who are not.

Whereas the veto player outcome should be observed regardless of the time period, this result is conditional on the financial reform taking place after the template institution is adopted by the prominent bodies. In this case adoption by countries in crisis should take place only after 1997. As a former official at the People’s Bank of China commented, Chinese policymakers in considering creating an independent financial supervisor in the late 1990s looked to the “international fashion” leader at the time: the United Kingdom’s FSA.9

Secondly, since FSI was an idea that could give credibility to a system of economic governance, especially after 1997, it should be adopted by countries in need of improving their credibility. This leads to the second sociological hypothesis:

Emerging economies should be more likely to adopt FSI than

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9From an interview conducted by the author in Beijing with Zhixiang Zhang on 11 March 2010.
established economies.

3.3 An Interaction Between the Theories

It may be the case that the two theories have explanatory power and will produce significant results in the empirical analysis. As with many social scientific questions, a great deal of what is interesting is not simply the main effects of our explanatory variables on the phenomena of interest, but also how the interaction between them affects their relationship with the response variable.

According to the veto player emerging market hypothesis, these types of countries with few veto players would be resistant to adopting FSI as it would diminish their ability to collect rents. To test whether this hypotheses or Hallerberg’s general veto player theory better explain FSI adoption an interaction between whether an country is less developed and it’s veto player configuration are included. Note that the veto player effect should be stronger with emerging economies rather than developed ones, but that is does not distinguish between emerging and other less developed markets.

It may be that before the idea of financial regulatory independence became so prominent in the latter half of the 1990s the veto player scenario held true regardless of the level of crisis. Countries with low numbers of non-polarised veto players would not have had much of an incentive to adopt independent financial supervision regardless of the level of crisis, because the idea had not yet become prominent. However, after about 1997 if these same systems experienced financial crises then they would become more likely to adopt FSI due the credibility and legitimacy benefits it provided. Other systems, already prone to adopt FSI, should be even more likely to adopt it as it now brings social benefits in addition to the veto player theory’s predicted advantages.
3.4 Summary of Hypotheses

To reiterate before proceeding to the empirical model:

\(H_{VP}\): Political systems with few veto players and low polarisation will be less likely to adopt FSI than other systems.

\(H_{SI}\): Political systems facing immediate financial crisis will be more likely to adopt FSI after 1997 than other systems.

\(H_{VPxSI}\): The likelihood of systems with few veto players and low polarisation adopting FSI increase if they experience crisis after 1997.

\(H_{VPxE}\): Less developed economies with few veto players and low polarisation will be less likely to adopt FSI than developed economies with the same veto player configuration.

\(H_E\): Emerging economies will be more likely to adopt FSI after 1997 than other economies.

4 Empirical Model

An event history analysis (EHA)\(^{10}\) was used to test these competing hypotheses. Using EHA has a number of advantages for examining the particular case we are interested in. Since the issue of policy diffusion, especially as the crisis-oriented sociological institutionalists envision, involves changing rates over time we need a model that can comparatively assess this using longitudinal data. Box-Steffensmeier and Jones (2004) argue that EHA is “a natural model for [this] analysis”. Their application “should be a mater of course” in these instances they argue (2004, 4).

\(^{10}\)alternatively referred to as survival, duration, or hazard models
We require a statistical model that is able to test the theory that the rate of adoption of supervisory independence significantly changes after 1997. Methods such as logistic regression have difficulty accounting for time. EHA, conversely, directly takes the history of the units of analysis into consideration, primarily through what is known as the hazard rate: \( h(t) \). The hazard rate, the rate of an event happening, such as adopting a certain institutional form, is a rate of change at a time dependent on the units’ covariates. Two questions can be asked with these models: (a) how does the risk of an event happening increase or decrease given different values of the covariates and (b) what is the risk of an event happening given that the event has yet to happen by a certain time (Box-Steffensmeier and Jones, 2004, 15)? It aims to accommodate these questions because it is the limiting probability of an event occurring at some time \( T \) during a time interval \([t, t + \Delta t]\), conditional on the unit’s values of the covariates \( x \) and it having not experienced the event before the beginning time \( t \). This is then divided by the width of the time interval \( \Delta t \) (adapted from Cleves et al., 2004, 7). Formally

\[
h(t|x) = \lim_{\Delta t \to 0} \frac{\Pr(t \leq T \leq t + \Delta t | T \geq t, x)}{\Delta t}
\]  

We can use this method to examine the rate of adopting supervisory independence while also taking into consideration the units’ histories. Also, EHA allows for the inclusion of time-varying covariates such as GDP per capita or crisis as well as right-censored units, i.e. units that do not experience the event by the end of our observations.

This paper’s specific EHA model is considered following a discussion of the sample, observation period to which it is applied, and relevant variables.
4.1 Sample

A sample of thirty countries was used to test this paper’s hypotheses.\textsuperscript{11} To help prevent the possibility of the results being an artifact of the sample, it is based on a sample not draw directly for this paper. Instead it is derived from a sample of thirty two countries created by Quintyn, Ramirez and Taylor (2007). They used their group of countries to qualitatively examine the related topic of degrees of financial supervisory independence and accountability. All of the countries in their sample had at least one set of major financial regulatory reforms between 1988 and 2007. \textit{It was not a random or exhaustive sample, but aimed to “construct a representative group of countries with a variety of reasons for change, as well as a variety of changes”} Quintyn, Ramirez and Taylor (2007, 17). Appendix 1 details this sample. It should be noted that there is also wide variety in the sample on variables such as GDP per-capita, experience with crisis, regional location, G-10 membership, political polarisation, and number of veto players.

Two countries from Quintyn, et al’s (2007) study were excluded from the current research: Denmark and the United Kingdom. Denmark was excluded because its financial regulatory system was reformed in 1988, two years outside of the observation period. This period is considered to start in 1990 to provide some distance from the 1987 financial crisis, which we wish to treat as exogenous. Countries were therefore ’observed’\textsuperscript{12} between 1 January 1990 and 1 January 2007. Information about the countries in years prior to or following these dates is treated as censored. 1990 to 2007 creates a roughly equidistant range around 1997 allowing for similar pre-exposure and post-exposure observation periods. Exposure is defined as the 1997 adoption by the United Kingdom of the Financial Services Authority (FSA), a unified financial regulator outside

\textsuperscript{11}See Appendix A for descriptive tables of the sample and variables.
\textsuperscript{12}In event history models this period is often referred to as time at risk.
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of the central bank.

The United Kingdom was excluded because its institutional change is being treated as exogenous. It is assumed that the United Kingdom was the prominent country for unified banking supervisory independence in this period. As will be discussed below, countries will be considered to have adopted the institutional design of interest when they have become more like the UK. It is beyond the scope of the paper to explain why the UK adopted this institutional form. It should be mentioned however that the UK, a classic majoritarian system, provides counter evidence to the veto player approach. The sociological institutionalist approach is also at a loss for explaining the FSA. A prominent template cannot be copied if it does not exist.

Note that the propositions from both the veto player and sociological institutionalist theories are based on the assumption that political decision-makers are office-seeking and aim to create institutions that will enhance their chances of re-election. This assumption is reasonable for the majority of the countries in the sample, because most have regular popular elections. One clear exception is China whose national policy-makers are not chosen in popular elections. China has not been excluded from the sample, however. Chinese politicians probably adhere to a number of key office-seeking assumptions as much or even more than in the democracies. While it is merely assumed that democratic politicians respond to voters’ economic performance preferences, the Chinese Communist Party has often clearly stated its preference for high economic performance and has been shown to remove politicians from office based on retrospective evaluations of economic performance in the recent era (Guo, 2007). China will be considered to be similar to a majoritarian system with one veto player and no polarisation. The fact that office-seeking politicians are attempting to improve economic performance not to please voters, but to please the Communist Party
is assumed to be insubstantial for this analysis.

4.2 Dependent Variable

Cox’s (1972) Proportional Hazard (PH) event history model was used to test the above mentioned hypotheses. It is a convenient estimator for this paper because we do not have any clear assumptions about the baseline hazard rate (Elkins, Guzman and Simmons, 2006). The Cox PH rate for the jth subject is given by

$$h(t|x_j) = h_0(t) \exp(x_j \beta_x)$$

(2)

where $\beta_x$ are the regression coefficients. $h_0(t)$ is the baseline hazard or simply the instantaneous rate of a transition event when all of the independent variables are 0 (Cleves et al., 2004). All other variables are the same as before. One of the first steps for constructing the Cox PH model is to consider the transition from what to what?

This paper is interested in whether or not the United Kingdom’s 1997 creation of the FSA has a social impact on the adoption of unified independent banking supervision. Therefore we are interested in the transition to unified supervisory independence. Countries were considered to have made this transition if they either moved their financial regulator outside of their central bank/ministry of finance or unified their financial regulators, or both. If one of these happened in a year between 1990 and 2007 the country was considered to have transitioned and was thereafter excluded from the study beginning the following year. Information regarding institutional change was taken from the original Quintyn, Ramirez and Taylor (2007) study. Two countries in the sample, Nicaragua and Guatemala, perfectly matched the FSA on the criteria of interest and others such as Belgium and Canada partially matched it even before 1990. Hypothetically this produces a competing risks model with a three state space:
4.3 Independent Variables

Christopher Gandrud

No Institutional Change, Transitioned towards FSA, and Transition Away from FSA (see Figure 1).

However, since no country in the sample transitioned away from the FSA model\(^{13}\) this state space remained hypothetical and was not incorporated into the formal analysis.

In sum, this paper’s dependent variable is the instantaneous rate of adopting a financial regulator that is more like the United Kingdom’s FSA than before financial regulatory reforms were enacted conditioned on the independent variables.

4.3 Independent Variables

This paper considers a number of often competing hypotheses. An array of variables were used to operationalise and test them.

- Crisis (crisis(log))

The determination of whether or not a country experienced an economic crisis during the observation period was taken from two sources; Quintyn, Ramirez and Taylor (2007) and Caprio (2003). It is hypothesised that the effect of an economic crisis on transitioning to the FSA model would not be constant, but would decrease at an accelerating rate the further in the past the crisis was. Following Mosakowski (1997) crisis was therefore measured as a natural logarithmic transformation of time from the crisis event. Formally

\(^{13}\)This fact lends some support to the sociological institutionalist hypothesis.
4.3 Independent Variables

Christopher Gandrud

\[
\begin{cases}
\log(t_{c+n} - t_c + 0.1) - 1.233 & \text{if crisis observed} \\
\log(17.1) - 1.233 & \text{if no crisis observed}
\end{cases}
\]  

where \( t_{c+n} \) is some time after the crisis year \( t_c \). If no economic crisis is observed during the period of study countries are assigned the crisis value of \( \log(17.1) - 1.233 \). 17 was chosen because the period of study was 17 years and this would therefore be the maximum, i.e. weakest crisis value observable. Higher levels of crisis were assigned lower values as the strongest level of crisis recorded was \( \log(0.1) - 1.233 = -2.233 \) for countries that had just begun to experience an economic crisis. It is likely that the base year chosen for no crisis would not substantively alter the results if it is larger than about 5. From this value onwards the slope of the logarithmic function flattens considerably. Each year after the crisis beyond this point has a diminishing impact on \( \text{CRISIS}(\log) \).

A number of countries including Sweden and Finland experienced crises in the early 1990s and shortly thereafter enacted financial regulatory reforms, but did not transition towards the FSA model. In these cases the value of their crisis variable began at \(-2.233\) and decreased in impact until the first set of financial reforms were enacted. The following observed year their crisis value reverted to 0. Note that this operationalisation assumes that the impact of a crisis varies only in how much time has elapsed from the origin year of the crisis and its effect disappears the year after a major financial reform.

According to the above hypotheses, higher levels of crisis (i.e. lower numerical values) would increase the hazard rate.

- **Emerging Economy (EMERGE)**

\footnote{The crisis variable was decreased by 1.207 in order to create a meaningful 0 point, i.e. no crisis. 0.1 was added because \( \log(0) \) is undefined.}

24
Emerging economies are captured with a dichotomous dummy variable where 1 is an emerging economy and 0 otherwise. Countries were classified as emerging economies if they are included in the Emerging Market segment of the FTSE Global Equity Index Series.\textsuperscript{15} Countries are included in this segment based on “Quality of Market Criteria” as well as their level of Gross National Income. Data is taken from 2002 and assumed constant over the period of observation. There were nine emerging economies in the sample.

A second variable, (\texttt{EMERGE\_LESS}) was also used to test the veto player emerging market hypothesis. Since the hypothesis did not distinguish between emerging and other less developed countries, countries at or below the mean GDP per capita of emerging economies (USD 7,477) were added to \texttt{EMERGE} to create \texttt{EMERGE\_LESS}. 19 countries were classified as less developed.

- GDP per capita (GDP)

GDP per-capita was measured in current international dollars for each year the countries were under observation (found at: UN, 2009). It was largely included as a control variable and as another measure of level of development.

- BCBS Membership (G10)

The United Kingdom was a prominent member of the Basel Committee on Banking Supervision (BCBS) and was important for the creation of the Committee’s 1997 \textit{Core Principles for Banking Supervision} advocating financial regulatory independence. Under a naive homogeneous diffusion model, members of this group would be expected to adopt the FSA model before other countries. Including BCBS membership\textsuperscript{16} in the model allows us to test whether a simpler social influence model may explain FSA adoption better than the more complicated crisis oriented theory.

\textsuperscript{15}from \url{http://www.ftse.com/Indices/FTSE\_Emerging\_Markets/index.jsp}

\textsuperscript{16}It is labelled G10 because the G-10 nations comprised the BCBS for most of this period. Spain was added in 2001, however it is not in the sample.
BCBS membership was operationalised with a time in-variate dummy where 1 denoted membership and 0 otherwise. Five Basel Committee members were included in the sample: Belgium, Canada, Germany, the Netherlands, and Sweden.

- **Veto Players (CHECKS)**

Two variables were used to test the predicted implications of veto player theory: CHECKS and Polarisation (POLAR). These variables were developed by Keefer and Stasavage (2003) and updated in the 2007 version of the Database of Political Institutions. CHECKS aims to capture the number of veto players for a wide range of political systems with various political institutions. The variable ranged from 1 to 11 in the sample. 1 indicated only one veto player as, for example, in China for the entire observed period. The highest number of veto players was in Japan. From 1994 until 1995 Japan had 11 veto players. This was a particularly unique year in Japanese politics that saw a number of coalition and minority governments and also an outlier in the sample as the mean number of veto players was 3.57 and 90% of cases had between 1 and 5.

- **Polarisation (POLAR)**

POLAR was found in a number of ways. Typically, polarisation is the distance (see Keefer and Stasavage, 2003, for a discussion of how these distances were calculated) between the executive and the four major parties in the national legislature. When the executive’s party also controlled the legislature, polarisation was determined to be 0. In the sample polarisation ranged from 0 in countries such as Australia and China to 2 in Belgium and Austria, for instance.

- **Interaction terms**

A number of interaction terms were created according to the hypotheses. An interaction was added between POLAR and CHECKS, because as Table 1 predicts,
the predicted effect of either polarisation or the number of veto players depends on the value of the other. Interactions were then added pairwise between Crisis(LOG), CHECKS, and POLAR. A three-way interaction between these variables was also examined, but it is not reported in Table 2 as all variables became insignificant at all accepted significance levels when it was added.

To summarise, the full model to be tested is:

\[
\begin{align*}
    h(t|x) &= h_0(t) \exp(\beta_1 \text{Crisis}(\log) + \beta_2 \text{GDP} + \beta_3 \text{G10} + \\
             &\quad \beta_4 \text{Polar} + \beta_5 \text{Checks} + \beta_6 (\text{Checks} \times \text{Polar}) + \\
             &\quad \beta_7 (\text{Crisis}(\log) \times \text{Polar}) + \beta_8 (\text{Crisis}(\log) \times \text{Checks}) + \\
             &\quad \beta_9 (\text{Crisis}(\log) \times \text{Polar} \times \text{Checks}) + \beta_{10} \text{EMERGE})
    \end{align*}
\]

5 Results

The results of the event history analysis largely provide evidence for both of the major hypotheses and little support for the full interaction models. However, there is some weak evidence for an interaction between polarisation and crisis that is in line with the sociological institutionalist theory. The emerging markets hypotheses proved highly insignificant at all levels in all models, the effect was also often in the opposite direction of the hypothesis. This included models where it was interacted with CHECKS and POLAR. As such it was dropped and

---

17 Interactions between CHECKS, POLAR, and EMERGE_LESS were also tested in models excluding GDP, since EMERGE_LESS is alternatively just a dichotomous GDP variable. For simplicity these are not shown and were not fully tested due to the limitations of the sample discussed below.

18 A number of diagnostic tests were used to assess the appropriateness of using a Cox Proportional Hazard Model. In particular Schoenfeld residuals were used to test the proportional hazards assumption. This test of whether or not there is a relationship between the model residuals and time was rejected at all significance levels for all of the models. A discrete-time logistic hazard model was also examined, but provided results similar to the Cox PH model and is therefore not reported here.
Figure 2: Estimated Baseline Survivor Function for the Sample (Model 4)

is not included in the following table.¹⁹

Consider first the evidence for the crisis hypothesis. According to Hₜ we wouldn’t expect to see many transitions towards the FSA model before it was promoted around 1997, regardless of the level of crisis. This is confirmed as the first transition in the sample towards the FSA model occurred in South Korea in 1997 (see Appendix A, Table 3). Financial reforms before 1997 in the sample did not involve changes to the institutional location of the financial supervisor. For example, though Finland had a financial crisis in 1991 and reformed its financial regulation in 1993 it did not move its financial supervisor outside of the ministry of finance until 2003. The baseline survivor function also reflects this lack of transitions towards the FSA model before 1997. It shows the survivor function—the probability of not transitioning beyond a time T—where all of the

¹⁹Another control variable for the influence of the IMF was included in the models. It was a dummy for having reached an agreement for a stand-by loan from the IMF in a given year (from Dreher, 2006). It was insignificant in all of the models and did not substantially change the results. Models including it are not shown.
co-variates are set at 0 for Model 4. The estimated baseline survivor function for the entire time from 1990 until 1997 is 1, i.e. no countries in the sample made the transition towards the FSA model.

Admittedly only a small number of financial reforms were observed before 1997 (4 of 34 total observed). This potentially limits our ability to draw conclusions from the sample on this issue. An alternate explanation is suggested when we consider that almost two thirds of the total number of observed crises (7 of 11 total) occurred before 1997. It could be that before 1997 countries were not making major institutional location reforms because there was not a prominent idea to guide their reforms. For countries in crisis before 1997, they could have continued to experience a degree of uncertainty about how to respond. Following, 1997 they now had a template to adopt that could help resolve this uncertainty.

Secondly, the hazard ratios of the crisis variable CrISIS(Log) are significantly different from one at all confidence levels in every model except for Model 5. Hazard ratios (HR) are interpreted in a similar way to odds ratios in logistic regression. Like odds ratios they are exponentiated regression coefficients. For a one unit change in $x_{im}$ the hazard rate changes $(1 - HR_{im})^*100$ percent. For example, in Model 1 for each one unit increase in CrISIS(Log) there is an 89.8% decrease in the hazard rate of a country transitioning towards the FSA model holding GDP per capita and BCBS membership constant. It is, however, more intuitive to interpret hazard ratios with estimated hazard func-

\footnote{Plots below are all made using Model 4.}
Table 2: Cox Proportional Hazard Ratios of Transition Towards FSA Model

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
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<td>Socio. Institutionalist</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRISIS(LOG)</td>
<td>0.102</td>
<td>0.095</td>
<td>0.08</td>
<td>0.014</td>
<td>0.271</td>
</tr>
<tr>
<td></td>
<td>(0.056)</td>
<td>(0.063)</td>
<td>(0.052)</td>
<td>(0.019)</td>
<td>(0.825)</td>
</tr>
<tr>
<td></td>
<td>&lt; 0.001***</td>
<td>&lt; 0.001***</td>
<td>&lt; 0.001***</td>
<td>0.002**</td>
<td>0.668</td>
</tr>
<tr>
<td>Controls</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>(0)</td>
<td>(0)</td>
<td>(0)</td>
<td>(0)</td>
<td>(0)</td>
</tr>
<tr>
<td></td>
<td>&lt; 0.001***</td>
<td>0.005**</td>
<td>0.005**</td>
<td>0.007**</td>
<td>0.005**</td>
</tr>
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<td>G_10</td>
<td>0.31</td>
<td>0.303</td>
<td>0.346</td>
<td>0.343</td>
<td>0.312</td>
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<tr>
<td></td>
<td>(0.218)</td>
<td>(0.215)</td>
<td>(0.239)</td>
<td>(0.239)</td>
<td>(0.221)</td>
</tr>
<tr>
<td>Veto Players</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POLAR</td>
<td>0.8</td>
<td>12.4</td>
<td>20.93</td>
<td>15.318</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.388)</td>
<td>(17)</td>
<td>(29.67)</td>
<td>(22.1)</td>
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<tr>
<td>CHECKS</td>
<td>1.106</td>
<td>2.083</td>
<td>2.46</td>
<td>1.728</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.327)</td>
<td>(0.929)</td>
<td>(1.06)</td>
<td>(0.873)</td>
<td></td>
</tr>
<tr>
<td>CHECKS*POLAR</td>
<td>0.732</td>
<td>0.1</td>
<td>0.037*</td>
<td>0.279</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.167)</td>
<td>(0.155)</td>
<td>(0.181)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model Interactions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRISIS(LOG)*POLAR</td>
<td>2</td>
<td>19.405</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.225)</td>
<td>(36.812)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRISIS(LOG)*CHECKS</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>0.286</td>
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<td></td>
<td>(0.305)</td>
<td></td>
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</tr>
<tr>
<td>Time at Risk</td>
<td>3213</td>
<td>3213</td>
<td>3213</td>
<td>3213</td>
<td>3213</td>
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<tr>
<td>LR chi²</td>
<td>20.91</td>
<td>21.15</td>
<td>25.79</td>
<td>27.92</td>
<td>30.36</td>
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<tr>
<td>Prob &gt; chi²</td>
<td>0.0001</td>
<td>0.0008</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
</tr>
</tbody>
</table>

Notes:
Standard errors in parentheses followed by the respective p-values.
p < 0.05 *
p < 0.01 **
p < 0.001 ***
16 observed transitions towards the FSA model included
All models exclude 32 missing cases from 439 total observations. This excluded two transitions (Columbia in 2005 and Indonesia in 2004).
Model including 3-way interaction between POLAR, CHECKS, and CRISIS(LOG) not shown due to its high insignificance.
Figure 3: Fitted Cox Proportional Hazards for Various Levels of Crisis Experience (Model 4)

Figure 3 compares the Model 4 estimated hazard functions for countries with no observed crisis (CRISIS(LOG) = 0), sample mean crisis levels (CRISIS(LOG) = -0.149), mid-point (CRISIS(LOG) = -1.117), and immediate crisis (CRISIS(LOG) = -2.223) holding the other variables constant. Clearly experiencing a crisis greatly increases the hazard of transitioning towards the FSA model after 1997 compared to countries that do not have a financial crisis.

There is also mixed evidence against the homogeneous diffusion model. In

Note that Cox PH models cannot directly estimate the baseline hazard $h_0(t)$, because they do not make any assumptions about the hazard’s shape over time. This makes fitting the hazard function difficult (see Eq. 2). Hypothetically, we could obtain the derivative of the baseline cumulative hazard $H_0(t)$ or a similar operation with the baseline survivor function $S_0(t)$ (shown in Figure 2) as an estimate of $h_0(t)$. However, it is often undefined as they are step functions. To obtain the estimates for the hazard curves presented in this paper a standard kernel-smoothing method was used (see Cleves et al., 2004, 131-132). The negative consequence of this is that there may be high levels of noise around the estimates and the estimated values of the smoothed hazard function should be treated with caution. However, what is more important for interpretation of the results is the ratio of the hazards between different fixed values of the variables, which is largely captured and represented via this method.

The smoothed hazard rate for before late 1999 is not reported in this or the following graphs because it is always 0.

Note: Cox Proportional Hazard Models do not have an intercept.
the sample the hazard ratio for G_10 is different in direction from what is predicted by this approach. Not being a BCBS member actually increases the hazard rate compared to being a member. This gives some support to the sociological institutionalist assertion that countries adopt socially prominent ideas in order to increase their legitimacy and credibility. BCBS members by virtue of being on this selective committee already have a high degree of credibility. Non-members start with less.

However, the wealthier a country was the more likely they were to adopt FSI as can be seen from the results of GDP.

Though the emerging economy variable was very insignificant in all of the models and therefore excluded from the analysis, the GDP variable hints at how a country’s relative capacities may impact adoption of FSI. As can be seen in Figure 4 middle to upper income countries were increasingly more likely to adopt FSI and very likely if they were near the sample maximum. Overall, more wealthy countries are more likely to adopt the prominent idea. There is little evidence that being an ‘emerging country’ has distinct implications for FSI adoption compared to other less developed countries. This may be partially
due to bureaucratic capacity closely correlating with GDP. Lower capacity diminishes the incentives for politicians to delegate policy (Huber and McCarty, 2004). As GDP and capacity increases, delegation incentives do also.\textsuperscript{24} These implications are not adequately tested here and should be investigated further.

Another issue that was difficult to test was the interaction between veto players and level of development. In the sample, POLAR and CHECKS were highly positively associated with GDP and consequently Emerge_less. There was not enough variability in the sample to adequately test multiple interactions between these variables.

There is evidence for the straight veto players hypothesis. Polarisation and veto players are very insignificant in Model 2 where they are not interacted. This is in-line with the assertion that systems will be resistant to supervisory independence when there are both few veto players and low levels of polarisation.

\textsuperscript{24}China may be an exception that proves the rule in that it has a low GDP per capita even compared to other emerging economies, but high bureaucratic capacity. It adopted FSI in 2004).
When they are interacted in Model 3 to capture this the hazard ratio of the interaction term is different from one at the 5% level ($p > |z| = 0.041$) when controlling for crisis, GDP per capita, and BCBS membership. Figure 4 shows fitted hazard curves for polar and checks for Model 4 where they are interacted with both each other and polar is interacted with crisis(log).

Notice that at low to middle levels of polarisation and veto players the hazard rate for transitioning towards the FSA model is very low. Only at high levels of polarisation and veto players does there seem to be more of a willingness to adopt the FSA model.

Finally, what evidence is there for the interaction hypothesis that the affect of polarisation and veto players will be different depending on the level of crisis? The assertion of this hypothesis is that even systems with few veto players and low levels of polarisation will be more likely to adopt an FSA-type regulator when it is experiencing crisis, because of means-ends uncertainty. There is little evidence for a full three-way interaction between these variables. The
interaction between POLAR and CRISIS(LOG) is somewhat suggestive of an interaction between these two variables. Though not particularly significant (p < |z| = 0.139), the magnitude and direction of the interaction is fully in line with the sociological institutionalist prediction. Figures 5 and 6 illustrate the predicted hazard functions for a range of levels of polarisation while experiencing no observed crisis and immediate financial crisis, respectively. These figures have a number of notable features. When there is no crisis the pattern of the effect of polarisation is similar to that in Figure 4. Systems with low to mid-levels of polarisation are very unlikely to transfer to the FSA model. Those with high levels of polarisation are more likely, though the hazard rate is lower than before. However, at high levels of crisis the difference between the lines drastically reduces. Mid to high levels of polarisation are even almost indistinguishable.

In the sociological theory, crisis is important because it causes actors to have means-ends uncertainty. When there is this type of uncertainty a situation will become depoliticised in that actors who had previously held divergent prefer-
ences will converge around a policy promoted by a prominent member of the international community. The interaction between polarisation and crisis in the model gives qualified support to this hypothesis as we can see that the impact of polarisation decreases at higher levels of crisis.

**Discussion**

As with central banking independence multiple explanations are needed to account for financial supervisory independence. Fortunately, the diverse CBI literature provides us with ample propositions to begin to examine this rarely explored area. The event history analysis presented here gives evidence for both the derived veto player and sociological institutionalist explanations of financial supervisory independence and unification. Veto player approaches seem to explain behaviour when there are clear policy alternatives and when levels of crisis are low. Generally, these situations could be considered ‘normal politics’. However, in periods of local economic crisis these considerations become less important as actors converge around prominent global ideas to help overcome their shared means-ends uncertainty.

The assertion that emerging economies are more likely to adopt supervisory independence either because of general attempts to build credibility or as an interaction with veto players was not supported by the data with this model. It appears rather that high income countries and countries in crisis are more likely to adopt the prominent FSI policy. This could suggest that the group of non-prominent countries, at least for this policy, is much larger than simply ‘emerging economies’ and extends right up the national income spectrum. The poor results for the emerging economy variable might also be the result of an imprecise operationalisation. A more precise definition and operationalisation of ‘emerging economy’ might improve results as the group covered by the FTSE
Global Equity Index is fairly heterogeneous, obscuring commonalities among an actually smaller group of high growth economies. For example, China and Poland are both classified as ‘emerging’ but have very different levels of growth and government structures.

The model could clearly be improved by increasing the sample size to include a wider range of countries. This would particularly allow for a test of the emerging markets veto player theory. Further research already underway, expands the sample size and looks at other economic policies over longer time periods. Hopefully, this will allow us to better understand the relationship between a country’s level of economic development and the policies it adopts.

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URL: [data.un.org](http://data.un.org)
# Appendix A

## Table 3: Sample Descriptives, 1990-2007

<table>
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<tr>
<th>Country</th>
<th>BCBS Member</th>
<th>GDP/Capita (sample mean)</th>
<th>Reform Year</th>
<th>Financial Crisis Year</th>
<th>Location of Bank Supervision¹</th>
<th>Before Reform</th>
<th>After Reform</th>
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<td>Australia</td>
<td>Yes</td>
<td>21200</td>
<td>1998</td>
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<td>Yes</td>
<td>24200</td>
<td>2002</td>
<td></td>
<td>MOF/CB</td>
<td>OCB,U</td>
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<tr>
<td>Bahamas</td>
<td></td>
<td>14900</td>
<td>2000</td>
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<td>24600</td>
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<tr>
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<td>Yes</td>
<td>25300</td>
<td>2006</td>
<td></td>
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<td>Chile</td>
<td></td>
<td>8500</td>
<td>1997</td>
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<tr>
<td>China, PR</td>
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<td>2004</td>
<td>1990</td>
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<td>Columbia</td>
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<td>5800</td>
<td>2003/2005</td>
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Sources:
Caprio (2003), Quintyn, Ramirez and Taylor (2007), and UN (2009)

Notes:
CB = in central bank; MOF = ministry of finance; OCB = outside central bank; U = unified

¹Location before/after the latest reform in the sample.
²Germany unified its banking supervision outside of the central bank. The Bundesbank still retains control of on-site inspections.
³In 2010 bank supervision to be transferred to a unified supervisor.
Table 4: Sample Means: Polarisation and Number of Veto Player, 1990-2007

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Table 5: Disaggregated Frequencies of Transitions Towards the FSA Model, Final Configuration

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