

The Technical Competence of Economic Policy-Makers in Developed Democracies

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This Version: February 5, 2013

Abstract: When do governments appoint “technically competent” economic policy-makers? Our model focuses on why governments would normally want a specialist in economics over a generalist with more political skills (the demand side) and when such leaders are available (the supply side). Our analysis of data for 1200 economic policy-makers from EU and OECD democracies since 1973 has seven main findings. First, governments appoint more technically competent economic policy-makers during financial crises. Second, Eurozone countries are less likely to have prime ministers with an economics education. Third, new democracies select more technically competent leaders. Fourth, left governments appoint more technically competent finance ministers in years with a stock market crash. Fifth, presidential systems have more technically competent finance ministers. Sixth, the longer a government is in office, the less technically competent are finance ministers appointed, but the more competent are central bankers. Finally, average tertiary education levels correlate negatively with technical competence.

Acknowledgements: We thank James Alt, Octavio Amorim Neto, Tim Besley, Christian Breunig, Lawrence Broz, Marco Cangiano, Jeffrey Chwioroth, William Roberts Clark, Torun Dewan, Robert Franzese, Scott Gehlbach, Chris Hanretty, Ethan Ilzetzi, George Krause, David Lake, David Dreyer Lassen, Martin Lodge, Salvatore Nunnari, David Soskice, and Geoff Taylor for helpful comments and discussions. Cristina Bodea generously shared her data on central bank independence. Luca Giapelli, Claudia Granados, Roberto Martinez, Santiago Massons, Juan Camilo Taborda, and especially Linnea Kreibohm provided excellent research assistance. Drafts were prepared for the 2012 EPSA and APSA meetings and presented at UCSD.

Word Count: 11812

When do governments appoint technically competent economic policy-makers? This is an especially relevant question in the midst of a financial crisis. One potential reason for crises is that “incompetent” policy-makers made the wrong decisions. If one were to replace these leaders with “competent” ones, then the crisis might end and there might not be crises in the future. This line of argument can explain the widespread enthusiasm both among pundits and in a given population for the appointment of “technocratic” governments, which are thought to have ministers with narrow technical skills who are expected to produce better policy than their more political, and more generalist, predecessors. The almost simultaneous appointments of Lucas Papademos as Prime Minister of Greece and Mario Monti as Prime Minister of Italy in November 2011 are examples of leadership changes that were meant to bring more “competent” people into government.¹

Whether more technically competent leaders mean better economic outcomes, however, and when they are appointed has not been systematically studied. Besley (2005: 44) goes as far as to claim that the modern political economy literature “has not only neglected the problem of political selection, it has been positively hostile to the topic”. Yet, historical research and a booming industry in political memoirs and biographies highlight the importance of the personal characteristics of leaders for political choices. For citizens, choosing the right people for political office is arguably no less important than designing institutions that keep them from abusing their powers. Moreover, the empirical study of personal characteristics is more advanced in other areas, such as research on the financial performance of firms (e.g., Bennedsen et al. 2007, Kaplan et al. 2008, Malmendier et al. 2010).

In this paper, we explore the demand and supply of technical competence in government. We review the literature on the personal characteristics of policy-makers, and proceed to build our theoretical expectations on the difference between “generalists”, who have more political skills, and “technicians”, who have more specialized training and/or occupational experience in economics and outside of politics. The following section discusses the measurement of “technical competence” and presents a new dataset of nearly 1200 economic policy-makers — the prime ministers/presidents, finance ministers, and central bankers of 40 EU and OECD countries from 1973 to 2010, if they were democracies. We then consider empirically when economic leaders with “technical competence” are more likely to be appointed. Our analysis uncovers systematic empirical patterns relating to financial crises, Eurozone membership, democratic maturity, partisanship, the form of government, government

¹ Lucas Papademos is a former member of the European Central Bank Executive Board, has a PhD in economics, and held academic appointments. Mario Monti is a Professor of Economics and former President of Bocconi University, and he has served as European Commissioner for Competition.

duration, as well as average tertiary education levels in the population. The conclusion situates the main findings in relation to existing research and explores further implications.

1. Background and Motivation

Although there is existing work on the personal characteristics of policy-makers more broadly, only a small number of published studies focus on economic decision makers.² Here, we briefly review these contributions and motivate the need for more systematic analysis.

Much of the initial work on ministers and government leaders in political science is descriptive and based on case studies (Rose 1987, Dogan 1989). An exception is Blondel's (1985) global survey of government ministers from 1945 to 1980, including their occupational background. Blondel outlines a fundamental distinction between "amateurs" and "specialists", with specialization indicated by ministerial appointments to posts corresponding to prior training. He argues that the balance between these two types of ministers reveals whether governments have a more "representative" or "technical" character, which he claims is "perhaps the most crucial distinction that can be found in the overall nature of governments, for it commands many other differences..." (p. 191). His empirical analysis shows that specialists are less frequent than generalists. On the distribution of specialists across different "governmental fields", Blondel highlights that "economic departments take the lion's share of all expertise" (p. 207). Unfortunately, this analysis has a number of limitations: it lacks detailed country-level breakdowns across policy areas, runs only through 1980, and does not explain the patterns it documents.

To our knowledge, the only comparison of the personal characteristics of finance ministers is a follow-up paper by Blondel (1991) himself. He conjectures that occupational background plays a key role (p. 3): "those who have specialised professional skills can be expected to have substantial authority vis-à-vis their colleagues as well as be on equal terms with the civil servants in their department." The analysis covers ministers of finance in fourteen Western European countries from 1945 to 1984 and represents an important step towards the comparative analysis of the personal characteristics of

² There is also a segment of the literature on *cabinet* characteristics that has some relation to our study. Notably, Amorim Neto and Samuels (2010) examine the share of non-partisan cabinet ministers across a global sample of countries. Here, our focus is on *individual* characteristics, a different unit of analysis, but we point out several connections.

economic policy-makers. However, Blondel makes no systematic attempt to explain cross-national patterns, to assess their evolution over time, or to explore whether his variables are associated with economic policy outcomes.

Several papers find a relationship between the level of political competition and measures of politician “quality”. De Paola and Scoppa (2011) use data from Italian local governments to test whether competition — measured by partisan fragmentation and winning margins — affect the education levels of members of municipal councils and executive committees, as well as the mayor. They report highly robust positive effects. Galasso and Nannicini (2011) develop a formal model, which predicts that parties deploy high-quality candidates (experts) to more contested districts, leaving lower-quality candidates (party loyalists) for less competitive constituencies. Data from the Italian Parliament confirms that politicians in more contested districts tend to have higher *ex ante* quality. Hirano and Snyder (2012) find that competitive primaries increase candidate quality even when a district is “safe”, or uncompetitive, in the general election. Taking a broader view, Besley and Reynal-Querol (2011) examine whether democracies select more educated leaders than autocracies, which restrict the candidate pool and the selection process. Building on the Archigos data (Goemans et al. 2009) and work by Ludwig (2002), their analysis finds that democracies are about 20 per cent more likely to have a highly educated leader than non-democracies. Elsewhere, Gehlbach et al. (2011) investigate when weak accountability induces businessmen to run for executive office. Overall, political competition and accountability seem to enhance the quality of politicians.

A number of studies focus on leadership characteristics or leadership change as independent variables in accounting for economic policy outcomes. Jones and Olken (2005) test whether changes in national leadership are associated with changes in economic growth, focusing on transitions due to the death of a leader. Random transitions of power matter in autocratic regimes, but not in democracies, and they also affect monetary policy, again only in autocratic regimes. Besley et al. (2011) build on this work with an expanded dataset and find a negative effect on growth when the leader who dies has a postgraduate degree or undertook college-level studies. With regard to budgetary policy outcomes, Brender and Drazen (2010) evaluate whether changes in executive leadership affect the composition of public spending in a sample of 71 democracies between 1972 and 2003. They detect a significant effect in the long run (defined as a four-year period). Dreher et al. (2009) analyze whether the educational and professional background of the head of government is associated with market-liberalizing reforms, based on 500 leaders from 72 countries over the period 1970 to 2002. According to their results,

entrepreneurs are more likely to introduce such reforms, particularly those from the left of the political spectrum. The impact of educational background is not robust. These studies document associations, some of them plausibly causal, of national leader change or characteristics with policy outcomes.³

Only a handful of studies focus on the association between the personal characteristics of *economic* policy-makers with policy outcomes. Chwioroth (2007) considers capital account liberalization in 29 emerging-market economies between 1977 and 1999. He codes finance ministers and central bank heads as “neoliberal” if they attended any of 14 “neoclassical economics departments”, identified by publication frequency in the *American Economic Review*. He identifies 233 “neoliberal” economic policy-makers in a total sample of 1549. Chwioroth argues that attendance of these institutions would lead individuals “to be socialized to adopt neoliberal ideas” (p. 451). He finds that governments where both positions are filled with neoliberal policy-makers have more open capital accounts than others.

In a second paper, Chwioroth (2010a) considers the effect of neoliberal policy-makers on social security, health, and education spending in 14 Latin American countries between 1972 and 1997. Here, he uses publication frequency in the *Journal of Political Economy* to identify three North American universities (Chicago, Stanford, and Columbia) as “the most likely institutions to instill neoliberal beliefs about social spending in their students” (p. 34). His regressions find no direct effect of neoliberal finance ministers and central bankers on social spending, but the results suggest a conditioning effect: an increase in the level of debt has no significant effect on social expenditure in the absence of neoliberal economists, but is associated with a significant reduction of social spending in their presence. Chwioroth concludes “the beliefs that policymakers share” condition “how they tend to respond to varying material conditions” (p. 40).

Göhlmann and Vaubel (2007) provide the first cross-national test of whether central bankers’ preferences over inflation depend on their educational and professional background. Their dataset consists of 391 central bank council members from ten European countries and the US between 1973 and 1998, and for the European central bank between 1999 and 2003. Their regression results suggest that professional background is an important determinant. In particular, they find that, compared to former politicians, council members who previously served as staff in a central bank are associated with significantly lower inflation rates across a range of specifications. However, educational

³ Examples of related work include Pande (2003), Chattopadhyay and Duflo (2004), and Washington (2008).

background effects are not robust. Adolph (2013) examines the connection between partisanship and central bank appointments. He argues that parties are able to influence monetary policy through the selection and retention of central bankers that share similar preferences.

This brief overview reveals an enormous potential, as well as problems and pitfalls, in the further study of the personal characteristics of economic policy-makers. A growing body of evidence suggests that the identity of those who make policy decisions is central to understanding a range of outcomes such as growth, inflation, and budgets: personal characteristics matter. However, few studies can make a convincing claim that they manage to identify the causal effects of politicians' personal characteristics. To do so requires a thorough understanding of the factors that influence leadership change and selection. Hence, a careful analysis of the variables that account for variation in the personal characteristics of policy-makers is indispensable for advancing this research.

Second, extant cross-national work has largely focused on national leaders to explain economic outcomes. Only a handful of cross-national studies consider the personal characteristics of essential economic decision makers, in particular finance ministers and central bankers. Yet, a body of related work underscores the central importance of these actors in decisions relating to fiscal policy (Hallerberg et al. 2009) and monetary policy (Rogoff 1985). In addition, some of the existing studies of these actors (Chwioroth 2007, 2010a), while highlighting the potential of this type of research, are also rather limited in the characteristics they consider. This suggests that the literature would greatly benefit from a more policy-specific analysis that focuses on the actors who are most relevant for particular decisions. In the realm of economic policy, this requires studying central bankers and finance ministers, not just chief executives.

A final observation concerns the nature of the personal characteristics of economic policy-makers that should be prioritized in further research. Besley (2005: 47) notes that politician quality has two principal dimensions, honesty and competence, which the vast majority of citizens want more of regardless of policy choice. Honesty is difficult to capture empirically. On the other hand, several essential aspects of politician competence can be measured objectively, for instance whether individuals possess a relevant educational or professional background. Such a focus also connects with earlier work on the portfolio-specific expertise of ministers (Blondel 1991) that awaits updating and analytic development, a task that we pursue in this article.

2. Economic Competence: Demand and Supply

The focus of this paper is on the “type” of economic policy-maker. By “economic policy-maker” we mean the head of government (either prime minister or president), the finance minister, or the governor or president of the central bank. The head of government is responsible for the overall policies of government. The finance ministry usually executes fiscal policy, and the minister may play an important role in policy formulation. The same can be said for the central bank for monetary policy, where the central bank executes the policy and may set the policy itself.

Our model has two parts to it. The first is the “demand” side — when do governments, and by extension the voters who elect them, want to have more technically competent economic leaders instead of generalists? Indeed, it is not *a priori* clear that “technical competence” in itself is a desirable trait. The staffs of ministries and central banks can number into the thousands and even the tens of thousands (Page and Jenkins 2005). A good manager with little economic competence may do as well, or better, than an economics PhD; a more politically inclined economic leader may have more success in selling and implementing a given policy than a former economics professor.

Rather than conceptualize leaders as either “amateurs” or “specialists” according to Blondel, we consider political competence versus technical competence. Political competence, in turn, can have two interpretations. One is political skill; a finance minister with no economics training may be effective because she can impose spending cuts on her ministerial colleagues because she has the political ability to do so. A second interpretation is that an appointment satisfies a given constituency and has political value regardless of the (political) skills of the appointee. Moving away from “amateurs” and “specialists” is also consistent with recent work that looks at the professionalization versus politicization of specific policies (e.g., Ting 2012) and specific bureaucrats (e.g., Krause et al. 2006).

We expect a greater demand for “technical competence” under four conditions, which we explain in more detail below: economic crises; left governments; membership in an economic union; and new democracies. In addition, we also discuss the role of political competition.

Governments in an economic crisis need to gain the confidence of two groups. The first is composed of investors in markets. If markets balk at the government’s rescue plan, then it is not possible for a

government to borrow money at a time when it needs funds quickly. The second is composed of voters. Someone bears both the economic and the financial costs of the crisis. Negotiating a politically viable set of policies to address the crisis is difficult. This is especially important during banking crises — no private actor can buy out the financial sector to solve the crisis, and it falls to the government to propose solutions and to execute decisions. Such crises impose two types of costs on government. The first is due to lost output; governments pay more in terms of public services and collect less tax. The second is the cost to the government of fixing (or usually bailing out) the financial sector. Laeven and Valencia (2010: 3-4) report that the median costs of financial crises prior to 2007 amounted to an historical median loss of output of 20% of GDP, an increase in public debt of 16% of GDP, and direct costs of supporting the financial sector of 10% of GDP. The advanced economies we examine in this paper tend to suffer greater output losses and increases in debt than developing countries.

The appointment of a technically competent economic policy-maker may help the government gain credibility with both groups. First, there may be greater confidence that the policy-maker knows the field and understands the problem. This knowledge is considered more crucial when a policy mistake can prolong a crisis. Crises also focus attention on government policy. In her book-length study based on interviews with investment fund managers, Mosley (2003) finds that markets normally do not pay too much attention to government policies in developed countries. When there is a risk of sovereign default, however, markets pay close attention. Domínguez (1997: 25-35) notes the role of economic crises, including the need to reassure investors and signal commitment to pro-market policies, in the emergence of highly skilled politicians in Latin America.⁴ On the voter side, Kayser and Peress (2012) suggest that voters care most about economic performance when a country falls well behind the performance of other countries. When the economy is performing acceptably, voters care about a wider variety of policy issues. A separate literature on ministerial resignations highlights their “corrective effect” on government popularity (Dewan and Dowding 2005).

A second reason why a competent leader provides a signal is distributional politics — the usual political “game” is about pushing the costs of any reform onto one’s political opponents. A competent economic leader may signal that traditional politics are at least suspended until the country exits the

⁴ Amorim Neto and Strøm (2006) obtain an intriguing and seemingly contradictory result that the share of non-partisan ministers declines during recessions. However, they model a tug of war over cabinet appointments in a very particular institutional setting, semi-presidential systems. Moreover, our main concern here is not with whether cabinet appointments are partisan or not, but whether they are technically competent.

crisis. In related work on cabinet composition, Amorim Neto and Strøm (2006: 628) discuss how appointments of non-partisan ministers – who are often associated with highly skilled technocrats or experts – convey a signal that “efficiency concerns” trump “redistributive ambitions”. One reason for this may be that highly skilled economic experts are motivated by “career concerns”; they have incentives to demonstrate technical competence to their peers, in this case academic and professional economists, not (just) to pursue policies that maximize a government’s chances of winning the next election (Alesina and Tabellini 2007).

Both of these arguments suggest that governments appoint more economically competent leaders during crisis than during non-crisis periods. In our dataset, we examine different forms of crises. Bank crises may lead to demand for economic policy-makers who come from the financial industry or who otherwise have more advanced economic training. Similarly, currency crises may increase the demand for policy-makers who have instant credibility with world markets. Such appointments may address the crisis itself to the degree that the attack on a given currency is about perceptions of government economic policy; such crises can end quickly through currency stabilization. An inflation crisis may put the emphasis especially on the finance minister and central banker. Finally, a stock market crisis suggests a general lack of confidence in the direction of the economy. In all cases, the issue facing a government is credibility with capital markets.⁵

A second “demand side” reason for a competent economic leader relates to partisanship. Left governments that represent largely labor power (e.g., Hibbs 1977) have to gain credibility with capital markets to finance the state, and they may be more likely to appoint trained economists as either finance ministers or central bank governors. An illustrative example comes from Brazil — after his election in 2002 President Lula of the Worker’s Party appointed “an unblinkingly orthodox economic team” (Anderson 2011). This included a former BankBoston economist and member of the opposition Social Democracy Party of former President Cardoso, Henrique Meirelles, as Central Bank Governor. As an interesting possible extension, left parties may need to appoint more competent leaders than right parties especially during a crisis. Here the issue is to gain credibility with skeptical markets, in which case the signal to markets is more important than the signal to populations as hypothesized above.

⁵ We also considered sovereign debt crises, but according to Reinhart and Rogoff (2009) there are only two in our sample: Turkey in 2001 and the United States from 1977 to 1981.

Third, membership in an economic union, in particular the Eurozone, may increase the demand for more competent economic policy-makers. The responsibilities of the EU more generally are strongly weighted towards economic policy. Economic and finance ministers meet regularly in the Economic and Financial Affairs Council (ECOFIN). With the advent of the Euro, the Economic and Financial Committee, composed of representatives from the member state finance ministries, became the key body that sets the agenda for ECOFIN meetings. Ministers from Eurozone countries also meet separately in the Eurogroup. If joining the Eurozone increases demand for ministers who can credibly represent a given country before economic policy-makers from other countries, then membership should increase technical competence.⁶

Fourth, we conjecture that governments in new democracies have greater incentives to signal technical competence than established democracies. In terms of economic management, the appointment of competent economic policy-makers following a transition to democracy can help reassure investors who might be unsettled by political uncertainty. Moreover, the established political class of a previous authoritarian regime is likely to be discredited. Where voters have yet to gain experience with a new set of politicians, an advanced academic degree could serve as a signal of candidate quality. For these reasons, we expect new democracies to have more competent economic policy-makers than old democracies. If so, the positive effect of democracy on a leader's education detected by Besley and Reynal-Querol (2011) may diminish with democratic maturity.⁷

In addition, we know from prior work that political competition can increase demand for high-quality politicians (De Paola and Scoppa 2011, Galasso and Nannicini 2011, Hirano and Snyder 2012). Amongst the possible measures of political competition are winning margins and partisan fragmentation in the legislature. Such measures may make sense for studies of particular countries, but they do not work well across democracies with diverse electoral systems. For instance, with majoritarian elections, tight winning margins in individual constituencies do not rule out low legislative fragmentation and a large majority of seats for the government. Here, winning margins for individual seats are an appropriate measure of competition, but they have no equivalent in proportional

⁶ For robustness, we also examine the effect of EU membership.

⁷ In related work, Amorim Neto and Samuels (2010: 14-15) argue that democratic age affects the maturity of the party system, leading to fewer appointments of independents in older democracies where parties may be more stable and include experienced personnel. While non-partisanship can indicate a technocratic appointment, our analysis focuses directly on candidate quality.

representation systems based on party lists. Due to these difficulties, we exclude political competition from our main analysis, but we do return to this aspect as part of our robustness checks.

A “demand” side perspective on competence, however, is incomplete — a relevant factor as well is the “supply” side. Why does the availability of potentially competent leaders vary across countries and across time?

Our first supply-side expectation concerns the difference in the way parliamentary and presidential systems appoint their cabinets. In parliamentary systems, prime ministers may be constrained to select finance ministers from members of parliament (MPs); the Canadian Finance Minister in August 2012, Jim Flaherty, was also a Conservative MP from Ontario. In contrast, the US Secretary of the Treasury, Timothy Geithner, had no such background. Even without a requirement to select MPs as cabinet members, Amorim Neto and Samuels (2010) argue that there should still be a clear difference in the partisan composition of cabinets across presidential and other systems. Executives can influence policy either through executive prerogatives, such as decrees or through the “bully pulpit”, or through a statutory strategy that requires the passage of legislation. Presidents have greater ability to use executive prerogatives than prime ministers, while prime ministers rely more on statutes. Presidents are therefore less constrained than prime ministers to appoint legislators to their cabinets who can help to coordinate the passage of legislation. They can, and typically do, appoint ministers who are not legislators. For these reasons, we expect a higher level of technical competence among presidential appointments (Amorim Neto 2006: 175). As Skidelsky (2000: xv) quips in his biography of John Maynard Keynes: “In a Presidential... system he would probably have been Minister of Finance.”⁸

A supply-side perspective also suggests that the number of economically competent individuals who could be appointed to the cabinet typically declines with a government’s time in office. This is especially true in those parliamentary systems where the main cabinet positions are drawn from parliament and where the available pool of ministerial talent is constrained to legislators — each ministerial change during an electoral term depletes the stock of potential ministers. More generally, there is a limited number of senior officials who would be considered for economic policy positions by a given party. We therefore expect the supply of economic competence to decline with government duration. Our empirical work on this issue has relevance for the theoretical literature on the ministerial talent pool. In the model by Dewan and Myatt (2010), the talent pool shrinks over time and this affects

⁸ We are indebted to [name withheld] for bringing this quote to our attention.

the incentives (and hence performance) of ministers. Crucially, they assume that the talent of the average minister does not decline over time; we provide a direct test of this assumption.

Further supply-side constraints relate to population characteristics. Overall education levels could limit the available pool of competent policy-makers. Based on Lipset (1959) and Glaeser et al. (2007), Besley and Reynal-Querol (2011) suggest that the level of democracy may depend largely on significant numbers of educated citizens. They include the average number of years of education as a robustness check, but because it is relevant as a possible constraint on the size of the talent pool we include a similar variable in the base analysis. Moreover, population size is directly related to the availability of expertise — larger countries are also more likely to have a larger absolute number of citizens with economics PhDs or other relevant expertise.

Note as well that the supply side presents different predictions from the demand side for partisanship. Countries with social democratic parties in power may have more politicians with labor union backgrounds while right parties may presumably have more economic leaders from the private sector. This presumes that an economic leader comes from the main constituency she represents; an alternative is that leaders of both right and left have more technocratic backgrounds based on an education at a policy school, such as *École Nationale d'Administration* (ENA) in France. If the French case is an exception, the expectation from the supply side would then be that left governments have fewer economically competent leaders.

Finally — and not related directly to a demand- or supply-side perspective — we expect economic competence to be higher among technocratic governments. These are governments composed of individuals who are known for their expertise rather than career politicians. In parliamentary systems, technocrats are sometimes appointed to government in a caretaker function, pending the resolution of a political crisis of leadership. Since a primary source of technocratic legitimacy is that they must be regarded as competent and “a safe pair of hands”, the positive relationship between technocrats and technical competence is almost definitional. However, studies of non-partisan ministers in cabinets tend to assume that such appointments are associated with greater expertise and technical skills, without establishing how skilled these supposed experts actually are (e.g., Amorim Neto and Strøm 2006). Our work establishes such an empirical benchmark.

3. Measures of Competence

We have collected data on the backgrounds of the prime ministers, finance ministers, and central bank governors of 40 countries between 1973 and 2010. Individual policy-makers are the unit of analysis. We include all 27 current EU member countries as well as 13 non-EU OECD countries. We use data from countries when they were democracies, as indicated by a positive Polity score.⁹ The resulting dataset contains information on almost 1200 economic policy-makers: 427 prime ministers or presidents (we use the former as the generic term), 540 finance ministers, and 216 central bank chiefs. Education codes come from UNESCO's *International Standard Classification of Education* (ISCED), while occupation codes are based on the International Labour Organization's *International Standard Classification of Occupations* (ISCO).

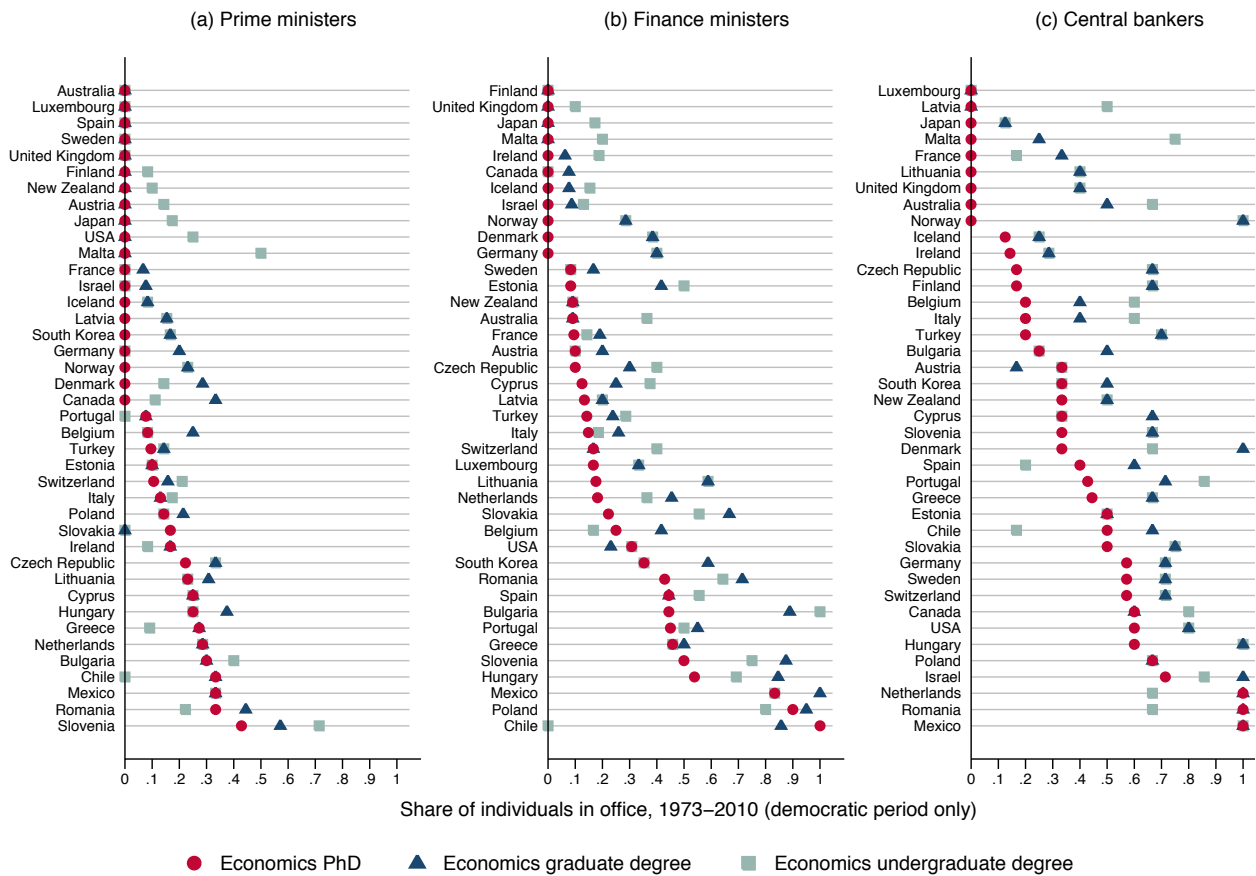
To begin with general statistics for education, Figure 1 compares the three types of economic policy-makers on whether they had an economics undergraduate degree, graduate degree, or doctorate (PhD).¹⁰ When looking across the three types of policy-makers, as expected central bankers were most technically competent, followed by finance ministers and then prime ministers. There is, however, a lot of cross-country variance within each position. Prime ministers (or presidents) with economics educational backgrounds are uncommon; only 16% of prime ministers had an economics graduate degree and 10% an economics PhD. Exceptions include Slovenia, Romania, Mexico, and Chile. Several countries never had prime ministers with an economics education.

As one might expect, the picture is different for finance ministers. About a third of the sample had a graduate degree in economics and one in five finance ministers had a PhD. Eleven out of the 40 countries did not have a finance minister with an economics PhD at all during the sample period. At the other end of the scale, one finds again Chile and Mexico as well as recent EU accession countries Poland, Hungary, and Slovenia. Moreover, three southern European countries at the centre of the Eurozone crisis — Greece, Portugal, and Spain — had better trained finance ministers than most of their Eurozone peers. In each of these countries, roughly half of the finance ministers had a graduate degree or doctorate in economics.

⁹ This follows a common convention in the literature, e.g., Besley and Reynal-Querol (2011). More demanding cut-offs reduced the sample only slightly and had no substantive impact on our results.

¹⁰ We also considered a wider definition of “economics” that included subjects such as accounting or business administration. However, the number of individuals involved is small, and in some cases we are less confident that such degrees are directly relevant.

Figure 1: Comparison of the Economic Training of Economic Policy-Makers



When looking at central bankers, perhaps the surprise is that there are nine countries where the governor has never had a PhD in economics. About three in five central bank governors had graduate and/or undergraduate degrees in economics and almost one in three had an economics PhD. The Mexican, Romanian, and Dutch central bankers in our dataset all had economics PhDs. Israeli central bankers are also highly trained in economics, in marked contrast to the country's prime and finance ministers, followed by those from Poland and Hungary.¹¹

To supplement our data on educational background, we also collected information on the professional trajectory of each economic policy-maker. Given the focus of our inquiry, we assessed whether an individual had worked as a professional economist, for instance in the private sector or an international organization. We also gathered information on significant work experience as a professor or lawyer (Besley and Reynal-Querol 2011). In addition, we noted whether an office holder was a career public official (either elected politician and/or member of a government ministry) before achieving the position, which might indicate that an individual was a “party loyalist” (Galasso and Nannicini 2011).¹² Career backgrounds cannot always be neatly categorized into a single occupational category, so we scrutinized biographical information to identify the two most significant professional experiences prior to occupying the office. Our indicators of professional background are not mutually exclusive.

Table 1 reports occupational background shares by type of policy-maker in the overall sample. Several interesting patterns emerge. First, public officials are well represented among prime ministers and finance ministers, which is expected. Central bankers, too, tend to have significant experience with public office prior to their appointment. In each of the three categories of policy-maker, more than half of the office holders had a previous career as a public official. Professors in central banks are 2.5 times more likely than as prime ministers and more than 1.5 times more likely than as finance ministers. Almost one-quarter of prime ministers and roughly one-seventh of finance ministers had legal experience, but lawyers almost never head central banks. This pattern switches for professional economists, who head central banks almost half of the time, but are less frequent as finance ministers and rarely serve as prime ministers.

¹¹ An additional 82 prime ministers, 56 finance ministers, and 19 central bankers in this sample have a PhD in a field other than economics.

¹² Following Göhlmann and Vaubel (2007), one could try to divide “public officials” still further into “career politicians” and “career bureaucrats”. The difference between the two, however, is not always clear-cut. In some countries, top “bureaucrats”, who are the ones most likely to be appointed to a ministerial post like the finance minister, are also important players in a political party.

Table 1: Occupational Background by Type of Policy-Maker

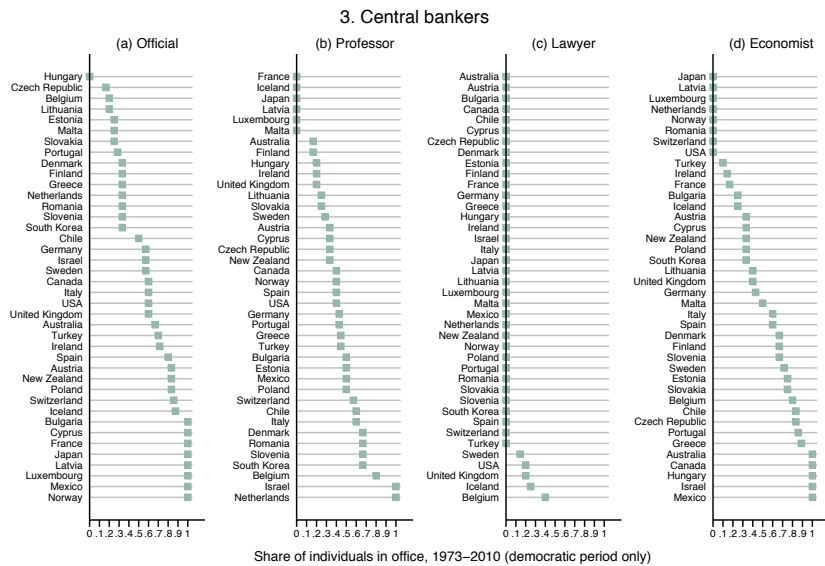
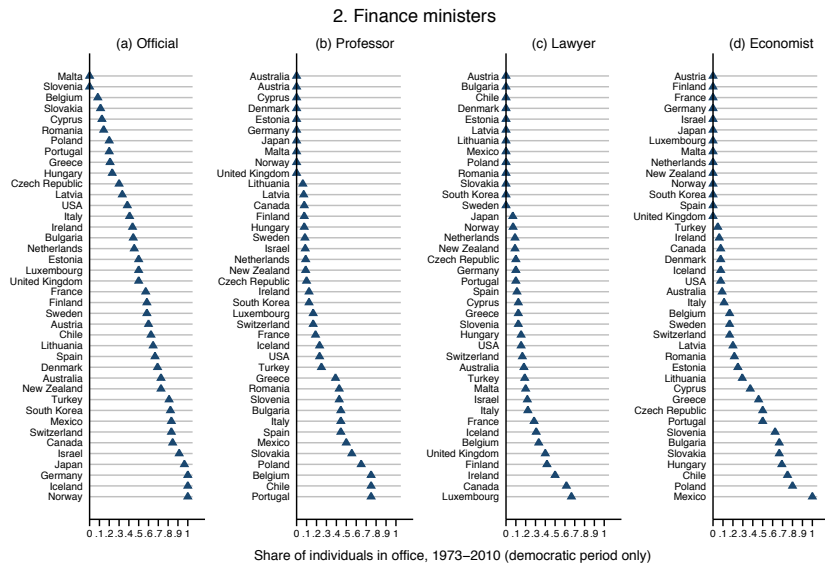
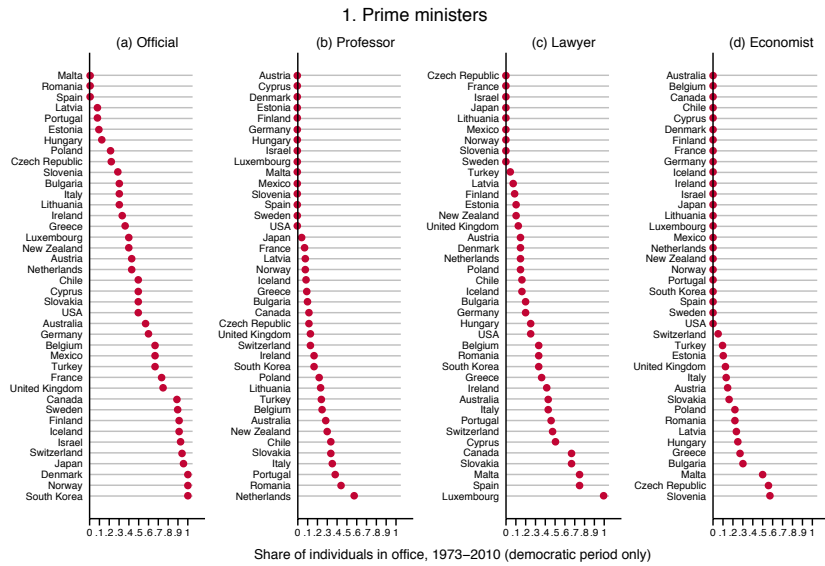
	Public Official	Professor	Lawyer	Economist
Prime ministers	.56	.15	.23	.09
Finance ministers	.54	.23	.15	.21
Central bankers	.59	.38	.03	.48

Note: N = 427 (prime ministers), 538 (finance ministers), and 212 (central bankers). Figures give the share of individual office holders from 1973 to 2010, including only years in which a country had a positive Polity score. We consider the two most important occupational backgrounds, so the positions are not mutually exclusive.

These figures suggest an association between certain occupational backgrounds and specific technical skills and competences that might be important for a particular type of policy-maker. Compared with prime ministers and finance ministers, there are substantially more professional economists in central banks, where a strong grasp of economics is essential. Also, given that central bankers tend to have the highest levels of educational attainment among all of the three policy-makers under investigation, it is not surprising that academics are more prominent in this post. On the other hand, legal experience is not essential for central banking, but it may be valuable for prime ministers, who have to steer the design of overall policy and legislative changes.

The aggregate figures in Table 1 hide substantial cross-country variation in “typical” career patterns. Figure 2 provides a further breakdown by country. Across almost all professional backgrounds and types of policy-makers, the range of country scores is substantial, apart from the widespread absence of lawyers as central bankers. What these figures do not reveal, however, is *when* policy-makers with these characteristics are most likely to emerge. This requires a more detailed analysis of the determinants of appointments.

Figure 2: Occupational Background by Type of Policy-Maker and Country



4. Initial Results

Our independent variables refer as precisely as possible to the day when the relevant office holder was officially appointed. We first look at the association between crises and educational competence. As discussed, our expectation is that in non-crisis periods ministers may play more political roles, while during or after crises there is more importance attached to having a minister with a strong economics background. Our main independent variables of interest are the indicators of banking currency, inflation, and stock market crises from Reinhart and Rogoff's (2009) updated dataset, which runs through 2010.¹³ Over the time period covered here, 19% of prime ministers were appointed during banking crisis years, with equivalent figures of 18% for currency crises, 13% for inflation crises, and 26% for stock market crashes.¹⁴

Table 2 compares the likelihood of having a PhD in Economics across the four ways we measure crisis. For finance ministers, the likelihood increases from 1 in 5 to 1 in 3 if they are appointed in years with a currency crisis, and from about 1 in 5 to almost 2 in 5 for an inflation crisis. The big difference for central bank governor appointments comes during years with a banking crisis, when the likelihood increases from 1 in 3 to 1 in 2. Prime ministers, for their part, are marginally more likely to have a PhD in Economics across the four classes of crises, but the differences are not statistically significant.

¹³ The authors make their data available at <http://www.reinhartandrogoff.com>.

¹⁴ Definitions of "crises": Bank crises exist if there are bank runs that lead to public intervention or if there is public intervention to assist an important financial institution. A currency crisis is a depreciation of at least 15% against an anchor currency. An inflation crisis is a rate above 20%. Finally, a stock market crisis (or crash), based on Barro and Ursúa (2009), is defined as a cumulative decline of 25% in real asset prices in a calendar year. All but the last definition come from the first page of the Excel data spreadsheets the authors post online; the last definition is from the 2011 edition of their book (p. 250).

Table 2: Share of Policy-Makers with Economics PhDs by Crises

	Prime Minister	Finance Minister	Central Banker
No banking crisis	.09	.22	.31
Banking crisis	.11	.28	.52
t-test	-.58	-1.19	-2.25**
No currency crisis	.09	.20	.34
Currency crisis	.10	.33	.39
t-test	-.19	-2.59**	-.52
No inflation crisis	.08	.21	.34
Inflation crisis	.15	.38	.42
t-test	-1.56	-2.84**	-.74
No stock market crisis	.09	.22	.36
Stock market crisis	.11	.28	.36
t-test	-.45	-1.39*	-.06

Notes: * Significant at 10%; ** significant at 5%; *** significant at 1%.

We also have data for the other variables that may affect our measures of competence. Our measures of the ideological position of a minister's party are taken from Benoit and Laver's (2006) left-right dimension score, which has a possible range from one to 20 with higher numbers indicating a more right-leaning ideological position.¹⁵ Eurozone membership is set equal to one if a minister was appointed when a country was a member and zero otherwise. We consider democratic maturity using the natural log of the number of years in a country's uninterrupted string of positive annual Polity scores. On the supply side, we account for presidential systems with an indicator variable set equal to one for Chile, Mexico, South Korea, and the United States, and zero for the remaining countries. Government duration is measured as the number of consecutive months that a prime minister has been in office. We control for the average number of years of tertiary education in the overall population. Following Besley and Reynal-Querol (2011), we use the educational attainment dataset by Barro and Lee (2010) to fill the gaps between decades using linear interpolation. We also include the natural log of population size (World Bank 2012). Finally, we turn to Benoit and Laver (2006) for an indicator of technocratic prime ministers.

Table 3 gives a first impression of how these covariates may affect technical competence, measured by whether a policy-maker has a PhD in economics. On the demand side, government ideology is not correlated with prime ministerial and central banker competence, but the likelihood of a finance minister from a left-wing party to hold a PhD in economics is 1 in 5, but only about 1 in 8 for right-wing parties. Membership in the Eurozone has a mixed effect on technical competence. For prime ministers, the pattern runs counter to our hypothesis — not a single Eurozone prime minister had an economics PhD, compared to 1 in 9 outside the Eurozone. There is a similar pattern, but less pronounced, for finance ministers. On the other hand, half of all Eurozone central bankers had an economics PhD, but only 1 in 3 elsewhere. A dichotomized version of our democratic age variable shows that old democracies have less competent prime and finance ministers, but there is little difference for central bankers. The likelihood of a prime (finance) minister having an economics PhD increases from 1 in 20 (1 in 14) in established democracies to 1 in 7 (1 in 3) in new democracies.

On the supply side, finance ministers and central bankers in presidential systems are more competent than their counterparts in parliamentary and semi-presidential systems. The difference is particularly pronounced for finance ministers in presidential systems, half of whom had an economics PhD, compared with merely 1 in 5 elsewhere. A dichotomous measure of government duration is not

¹⁵ See http://www.tcd.ie/Political_Science/ppmd/PPMD_summary_data_GUIDE.pdf.

correlated with competence. We obtain a surprising result with a dichotomized version of our tertiary education measure, relating to the population of a country in the year a policy-maker is appointed. Contrary to our expectations, we find that 1 in 14 (1 in 7) prime (finance) ministers have an economics PhD when tertiary education levels in the general population are high, which *increases* to 1 in 7 (1 in 4) for *low* levels. Population size does not correlate with prime ministerial economics education, but for finance ministers (central bankers) the likelihood of an economics PhD increases from 1 in 6 (1 in 3) in small countries to 1 in 4 (2 in 5) in large ones. Finally, we obtain a quantitative estimate of technocratic competence: the likelihood of a prime (finance) minister with an economics PhD increases from 1 in 10 (1 in 6) in non-technocratic governments to 1 in 3 (1 in 2) in technocratic administrations. The pattern is similar for central banker appointments, but here the difference is not statistically significant.

While these bivariate patterns provide a first impression of how financial crises and other variables may affect the economic competence of policy-makers, an effort to parse their contribution requires a multivariate regression framework for dichotomous dependent variables.

Table 3: Share of Policy-Makers with Economics PhDs by Other Variables

	Prime Minister	Finance Minister	Central Banker
Right-wing party ^a	.09	.12	.33
Left-wing party ^a	.08	.20	.34
t-test	0.40	-2.06**	-0.22
Non-Eurozone	.11	.22	.34
Eurozone	.00	.18	.53
t-test	1.94*	0.58	-1.57
New democracy ^b	.16	.36	.38
Old democracy ^b	.05	.07	.33
t-test	3.68***	8.47***	0.83
Non-presidential system	.10	.19	.34
Presidential system	.14	.49	.53
t-test	-0.60	-4.49***	-1.57
New government ^c		.21	.24
Old government ^c		.22	.37
t-test		-.37	-1.19
Low tertiary education ^d	.14	.28	.34
High tertiary education ^d	.07	.15	.38
t-test	2.12**	3.70***	-0.55
Small population ^e	.10	.16	.30
Large population ^e	.10	.27	.41
t-test	-0.06	-3.21***	-1.68*
Non-technocratic prime minister	.09	.18	.33
Technocratic prime minister	.36	.58	.50
t-test	-3.25***	-3.57***	-0.87

Notes:

^a We use the ideology of the prime minister's party in columns (1) and (3), and the ideology of the finance minister's party in column (2). We classify a party as "left wing" if it receives a score below 11 on the left-right scale by Benoit and Laver (2006) and "right wing" otherwise.

^b In the finance minister sample, we use the median number of years in the unbroken string of positive Polity values to divide the sample into new (up to 35 years democratic) and old democracies (36 years and above).

^c A new government is indicated by a prime minister who is in her first month of office.

^d We use the interpolated average number of years of tertiary education, based on Barro-Lee (2009), to divide the sample. The median figure in the finance minister sample is .47, and observations above this have "high tertiary education" levels.

^e We use the median population figure of about 10.2 million to split the sample.

* Significant at 10%; ** significant at 5%; *** significant at 1%.

5. Multivariate Analysis

Following Besley and Reynal-Querol (2011), we report linear probability models with standard errors clustered by country. Coefficients from such regressions are more intuitive and more easily interpretable than logits, and the corresponding logit estimates in the web appendix show that the two approaches yield very similar results. We ran a series of Hausman tests for all of our main regressions, which indicated that random effects are appropriate.¹⁶ The suitability of the random effects estimator is a substantial benefit for this analysis because of our theoretical interest in several time invariant and rarely changing explanatory variables. Two complications arise. The first relates to partisanship — we want to investigate whether there is a difference between left and right party members, but some ministers have no party affiliation. Hence, including partisanship means that we lose a set of observations, in particular non-partisan technocrats. The first set of regressions does not include partisanship, but we will return both to this variable and to some interactions partisanship has with crisis variables. Second, Reinhart and Rogoff (2009) do not report financial crisis data for eight countries in our dataset. While we retain the crisis variables in our baseline specification, we also investigate whether the resulting reduction in sample size affects the coefficients on other variables of interest. In addition, we also summarize results with our (imperfect) proxies for political competition.

Table 4 presents regression results for the economics educational levels for the three different types of economic leaders. In addition to our variables of interest, all models also include a set of decade dummies. To begin with the demand-side variables, crises in most regressions do *not* have a statistically significant effect. A notable exception is for the finance minister, with stock market crashes leading to an increase of the probability of appointing a PhD in economics of about nine percentage points. Similarly, governments are more likely to appoint PhDs in economics as central bank presidents during a banking crisis, with the increase in probability 22 percentage points. Eurozone membership seems to have the opposite effect of what was expected for prime ministers, with EU prime ministers 19 and 14 percentage points less likely to have graduate training and a doctorate in economics, respectively. The relative “newness” of a democracy does have the expected impact on the education levels of finance ministers, however, with new democracies having more economically educated

¹⁶ Hausman tests fail to reject the null hypothesis of no systematic difference between fixed and random effects estimates at the 10 percent level in 11 out of 12 regressions. The exception is our model of economics graduates as central bankers in column 3a of Table 4 ($p = .03$). In addition, Breusch-Pagan Lagrange Multiplier tests indicate differences across units, significant at the 10 per cent level, in most of the 12 regressions, except for regressions 1a and 1b in Table 4 as well as 1a and 3b in Table 5.

finance ministers than older democracies. The oldest democracy in the sample, the United States in 2010, has a 33 percentage point lower likelihood that the finance minister will have a PhD in economics than a new democracy like Chile in 1990.

The supply side explanations do comparatively better. As expected, presidentialism has a big effect on the economic competence of finance ministers, with a 32 and 40 percentage point increase in the likelihood of an economics graduate degree and PhD, respectively. Such an effect is absent for the leader herself under both systems, as well as for central bankers. Government duration has a negative effect on the competence of finance ministers. The average democratic government in our sample lasted 36 months and the longest 344 (Malta). A government that remained in office ten years would have a 22 percentage point drop in the likelihood that a finance minister has a graduate education in economics. Conversely, the likelihood that the central bank head has an economics PhD increases by 46 percentage points over the same period. We detect no effect of overall population size, but we confirm our unexpected finding from the bivariate analysis: a one-year increase in average tertiary education levels in the population reduces the likelihood that a prime minister has an economics graduate degree or doctorate by about 18 percentage points. For finance ministers, the likelihood of an economics graduate degree and PhD decrease by 35 and 16 percentage points, respectively. We also confirm that the likelihood of a finance minister with an economics graduate degree and doctorate increases by 19 and 17 percentage points, respectively, under technocratic prime ministers.

If one compares across types of leaders in the education regressions, the explanations are strongest for finance ministers, somewhat weaker for prime ministers, and less relevant for central bankers. For the last group, the decade dummies seem to be as relevant as anything else.

We also measure technical competence according to prior occupation, with results reported in Table 5. Perhaps the biggest surprise is the effect of crises on prime ministers — a banking crisis increases the probability of an economist as a prime minister by 8 percentage points, a stock market crash makes it also 9 percentage points more likely to have a professor in office, and an inflation crisis more than doubles the probability from a stock market crash (or 22 percentage points). Eurozone membership has no association with prior occupation. For the remaining variables, we find results that are similar to the education regressions. On the demand side, the appointment of economists becomes less likely for both prime and finance ministers as democracies mature. In terms of our supply-side expectations, the probability that economists are appointed as finance ministers is 37 percentage points higher in

presidential systems, with a similar effect for professors. This matches our findings from the education regressions. An unexpected result is a clear break on economists becoming central bank chiefs in presidential systems — the decline is 73 percentage points and significant. There is also a small but significant decline in the likelihood of appointing a professor as finance minister the longer a government is in office. As in the education regressions, there is an opposite effect of government duration on economist central bankers. Rising levels of tertiary education in the population make it less likely that an economist becomes prime or finance minister, and that professors head finance ministries. Again the similarity with the education results is striking. Technocratic prime ministers are 70 percentage points more likely to appoint a professional economist to head the central bank, but this variable does not affect the occupational background of finance ministers.

The second set of regressions includes our measure of partisanship (the full results appear in the web appendix as Tables A1 and A2). Partisanship alone is not statistically significant for the three types of policy-makers; the following section explores related extensions. When we augment our regressions with an EU dummy, it never attains statistical significance and the results for Eurozone membership are not affected (Tables A3 and A4). We also augment our baseline regressions with two possible measures of political competition, the seat share of the governing party or parties in the lower house of the legislature or unicameral parliament, and the degree of partisan fractionalization in the legislature (Tables A5 and A6). These variables have no significant effects on our education variables. In the occupation regressions, there is a mixed pattern. An increase in the government's seat share is associated with an increased likelihood of having an economist as prime minister or president. Fractionalization, on the other hand, increases the likelihood of a professor as head of government, but it has a negative effect on the chances of an economist being appointed to head the central bank. For the reasons discussed earlier we are hesitant to read too much into these results, although the role of political competition deserves further attention in follow-up work.

As a further robustness check, we dropped all crisis variables in order to maximize sample size (Tables A7 and A8). This yields total samples of 404 prime ministers or presidents, 475 finance ministers, and 173 central bankers. The coefficients on the remaining variables of interest are remarkably stable. Finally, as mentioned, when we use logistic regression to estimate our main models, the pattern of results does not change (Tables A9 and A10). Overall, the core findings reported in Tables 4 and 5 are robust to all of these variations.

Table 4: Technical Competence of Different Types of Economic Policy-Makers — Education

VARIABLES	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
	Prime Minister/President		Finance Minister		Central Banker	
	Econ Grad	Econ PhD	Econ Grad	Econ PhD	Econ Grad	Econ PhD
Banking Crisis	0.035 (0.050)	0.031 (0.037)	-0.053 (0.049)	-0.030 (0.045)	0.113 (0.112)	0.220** (0.108)
Currency Crisis	-0.071 (0.059)	-0.067 (0.044)	-0.050 (0.046)	0.048 (0.061)	0.037 (0.131)	-0.044 (0.139)
Inflation Crisis	0.055 (0.086)	0.076 (0.074)	0.111 (0.070)	0.045 (0.072)	-0.112 (0.172)	0.183 (0.194)
Stock Market Crash	0.024 (0.048)	0.045 (0.046)	0.082 (0.051)	0.085** (0.038)	-0.001 (0.090)	-0.076 (0.088)
Eurozone Membership	-0.189*** (0.057)	-0.143*** (0.035)	-0.013 (0.100)	-0.041 (0.090)	-0.124 (0.180)	0.009 (0.183)
Age of Democracy (ln years)	-0.020 (0.017)	-0.014 (0.021)	-0.060** (0.031)	-0.072*** (0.020)	-0.073 (0.060)	-0.064 (0.051)
Presidential System	0.075 (0.052)	0.098 (0.071)	0.320*** (0.122)	0.398*** (0.142)	0.139 (0.242)	0.002 (0.294)
Government Duration (years)			-0.022*** (0.008)	-0.005 (0.004)	0.016 (0.016)	0.046** (0.019)
Tertiary Education (average years)	-0.180** (0.073)	-0.185*** (0.062)	-0.352*** (0.106)	-0.159* (0.093)	0.149 (0.134)	0.175 (0.274)
Population (ln)	-0.018 (0.014)	-0.009 (0.012)	0.008 (0.031)	0.015 (0.027)	0.023 (0.059)	0.018 (0.039)
Technocratic PM			0.193* (0.112)	0.171* (0.097)	-0.039 (0.282)	-0.025 (0.235)
1970s	-0.250*** (0.050)	-0.199*** (0.047)	-0.364*** (0.098)	-0.175** (0.084)	-0.410*** (0.158)	-0.030 (0.168)
1980s	-0.088 (0.060)	-0.029 (0.055)	-0.193** (0.080)	-0.143** (0.071)	-0.207* (0.121)	-0.287** (0.136)
1990s	-0.090* (0.051)	-0.085** (0.033)	-0.081 (0.061)	-0.042 (0.058)	-0.181 (0.121)	-0.110 (0.119)
Constant	0.716*** (0.241)	0.449* (0.231)	0.724 (0.487)	0.338 (0.379)	0.535 (1.060)	0.131 (0.708)
Observations	331	331	381	381	134	134
Countries	31	31	29	29	28	28

* Significant at 10%; ** significant at 5%; *** significant at 1%. Random effects regressions with standard errors clustered by country in parentheses. The respective dependent variables are dummy variables.

Table 5: Technical Competence of Different Types of Economic Policy-Makers — Occupation

VARIABLES	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
	Prime Minister/President		Finance Minister		Central Banker	
	Economist	Professor	Economist	Professor	Economist	Professor
Banking Crisis	0.082** (0.035)	-0.070 (0.054)	-0.059 (0.049)	-0.014 (0.069)	0.120* (0.071)	0.138 (0.115)
Currency Crisis	-0.036 (0.025)	-0.096 (0.072)	-0.075 (0.056)	-0.061 (0.077)	-0.102 (0.084)	-0.031 (0.196)
Inflation Crisis	0.000 (0.046)	0.222** (0.099)	-0.032 (0.071)	0.117 (0.114)	0.085 (0.063)	0.134 (0.228)
Stock Market Crash	-0.018 (0.027)	0.086** (0.041)	0.002 (0.019)	0.042 (0.047)	-0.025 (0.089)	-0.014 (0.078)
Eurozone Membership	-0.042 (0.047)	-0.048 (0.057)	-0.057 (0.086)	-0.002 (0.082)	-0.088 (0.128)	0.120 (0.152)
Age of Democracy (ln years)	-0.022* (0.013)	-0.024 (0.029)	-0.042* (0.024)	-0.049 (0.032)	0.001 (0.052)	-0.023 (0.051)
Presidential System	-0.069 (0.042)	-0.035 (0.098)	0.367** (0.175)	0.338* (0.175)	-0.731*** (0.271)	-0.143 (0.191)
Government Duration (years)			-0.009 (0.010)	-0.012** (0.005)	0.031*** (0.012)	0.011 (0.015)
Tertiary Education (average years)	-0.082** (0.040)	0.067 (0.137)	-0.288*** (0.108)	-0.280** (0.140)	0.157 (0.232)	0.113 (0.173)
Population (ln)	0.004 (0.010)	0.001 (0.020)	-0.003 (0.023)	0.029 (0.025)	0.048 (0.060)	-0.019 (0.043)
Technocratic PM			0.147 (0.191)	0.047 (0.166)	0.696*** (0.230)	-0.154 (0.321)
1970s	-0.063 (0.043)	0.017 (0.083)	-0.255*** (0.080)	-0.121 (0.092)	0.041 (0.149)	-0.034 (0.161)
1980s	-0.022 (0.048)	0.063 (0.076)	-0.165** (0.075)	-0.092 (0.102)	0.049 (0.086)	-0.048 (0.140)
1990s	-0.014 (0.036)	0.005 (0.058)	-0.060 (0.048)	-0.041 (0.080)	0.089 (0.086)	-0.187 (0.121)
Constant	0.142 (0.198)	0.160 (0.330)	0.657* (0.340)	0.113 (0.413)	-0.577 (1.065)	0.692 (0.708)
Observations	331	331	381	378	134	131
Countries	31	31	29	29	28	28

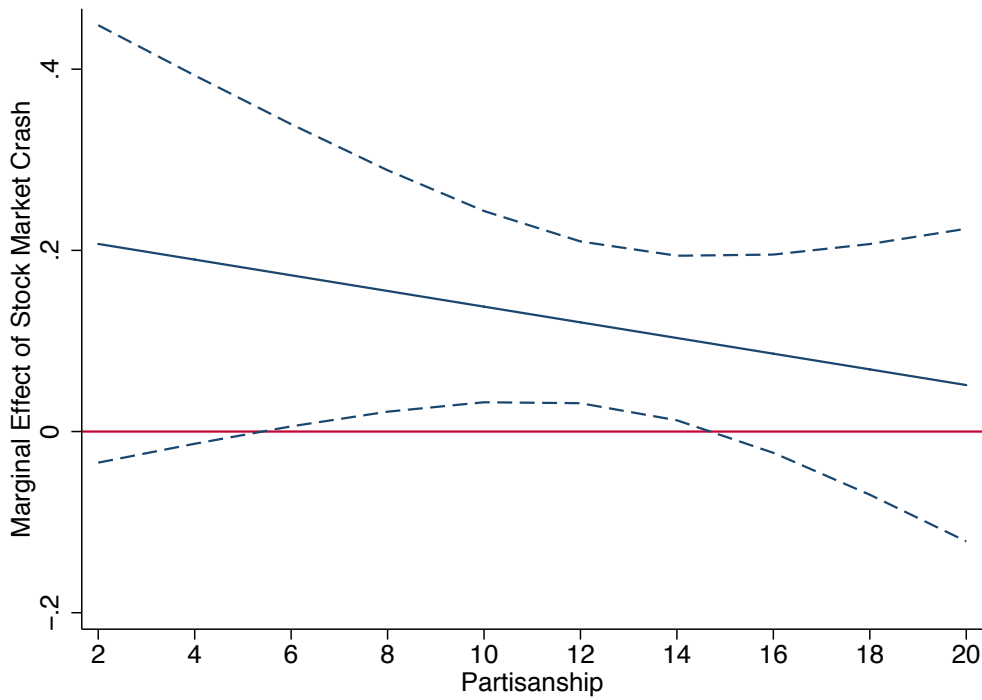
* Significant at 10%; ** significant at 5%; *** significant at 1%. Random effects regressions with standard errors clustered by country in parentheses. The respective dependent variables are dummy variables.

6. Extensions

This section summarizes initial findings in relation to some extensions. While the space available here is insufficient for a full analysis, several results suggest potential for follow-up research. The first extension relates to the interaction between partisanship and crises. Our expectation is that capital markets care more about “competent” ministers during crises when the left is in power. The left may then feel more pressure to appoint in particular finance ministers with formal training or professional experience in economics. We focus on finance ministers for several reasons. First, these positions are the most likely to change quickly in response to crises. Changes in prime ministers more typically — although not always — coincide with new elections. In addition, many of the central banks in our sample countries have rigid appointment procedures that make mid-term changes unlikely.

The most interesting interactive result comes from the conditional effects of a stock market crash given partisanship. Recall that in Table 4 a government was more likely to appoint a PhD in economics as a finance minister during such a crash. There is an additional partisan twist — Figure 3 presents the marginal effects with 95% confidence intervals, with full results appearing in Table A11 in the web appendix. The most left governments experience an increase in the likelihood of having a PhD in economics as a finance minister by 20 percentage points. While the conditional coefficient is statistically significant only at about 6 on the twenty-point scale, this corresponds to the Polish Finance Minister Grzegorz Kołodko (1994-7 and 2002-3) and is where much of the “mainstream” left appears on the partisanship scale. The marginal effect of a stock market crash then declines and becomes insignificant at a partisan level of just above 14, which corresponds to the Swedish Finance Minister Anne Wibble from the Liberal Party (1991-4), who held office during the country’s financial crisis.

Figure 3: Marginal Effect of a Stock Market Crash Given Partisanship on the Likelihood of the Finance Minister Having a PhD in Economics



Note: This Figure is based on a random effects regression with standard errors clustered by country. The dependent variable is a dummy variable. The line presents the conditional coefficient for whether a finance minister appointed during a stock market crash has a PhD in economics given partisanship. A move from a low to a high number represents a move from the political left to the political right. Confidence intervals are 95%. Full regression results for this Figure are presented in Table A11 in the web appendix.

The second possibility concerns central bank independence. We are interested in the legal, rather than in the behavioral, measures of “independence”.¹⁷ The Cukierman et. al (1992) measure is well recognized in the literature, and Bodea and Hicks (2012) update the original dataset to 2010.¹⁸ They, in turn, have both weighted and unweighted versions of their index, which are standardized to run from 0 (fully dependent) to 1 (fully independent). Table A12 presents results where our model is augmented with the weighted index. It *is* more likely that a central banker at least with a graduate education in economics is appointed under more independent central banks, although there is no change in the likelihood of the governor appointed having a PhD. Nevertheless, the coefficient indicates that the probability jumps 61 percentage points if one goes from a fully dependent to a fully independent bank. “Independence” means that the central bank has more discretion to formulate monetary policy. Where the policy announcements of the central bank governor come more from central bank deliberations rather than from instructions from the government, the central banker presumably benefits from having an economics background.

7. Conclusions

This paper examines when “technically competent” economic policy-makers are appointed, with competence measured either as education in economics or as professional experience as an economist or as a professor. We examine both “demand” and “supply” side explanations. On the demand side, we find that financial crises have an effect especially on the occupation of the main leader of the country, as well as the likelihood that the finance minister or central bank governor has a PhD in economics. These results confirm anecdotal evidence that crises can bring to the fore leaders with formal qualifications in economics. Contrary to our initial expectations, Eurozone countries are less likely to have prime ministers with an economics education than non-members, but there is no equivalent effect on finance ministers or central bankers. Third, new democracies select more competent economic policy-makers than old democracies, perhaps to reassure markets and voters in the absence of information about a new crop of political leaders. Fourth, partisanship matters but in a signaling context — left governments appoint more competent finance ministers in years with a stock market crash. Overall, these demand-side results appear broadly consistent with the work by Chwioroth (2007,

¹⁷ Legal measures measure variables that appear in bank statutes, such as the length of term of a central bank governor. Behavioral measures consider the length of time a given central bank governor is in office. See Cukierman (1992) and Berger and de Haan (2001) for more detailed discussions.

¹⁸ The authors thank Cristina Bodea for making their dataset available.

2010a), since the signaling value of competent appointments depends crucially on market actors and voters believing that they are associated with particular policies.

On the supply side, we confirm that leaders in presidential democracies seem to have more choice for appointments, and the technical competence level of finance ministers in particular increases substantially over parliamentary systems. We thus find strong empirical support for Skidelsky's hypothesis — Keynes may well have been Chancellor of the Exchequer in a UK with a presidential system of government. Moreover, the technical competence of finance ministers appointed declines the longer a given government remains in office. An unexpected result is that average tertiary education levels are negative correlated with our measures of technical competence.

Our findings suggest several qualifications or extensions to existing research. The result on government duration has implications for Dewan and Myatt's (2010) theoretical work on the ministerial talent pool. Contrary to their assumption of homogenous ability in the pool of available ministers, our evidence points to heterogeneous ability and a process where leaders first appoint the most talented of potential finance ministers. This suggests that the model should be revisited with the assumption that ministerial quality is not homogenous. Future work should also investigate whether the effect of government duration is conditional on other features of the political system, in particular the presence of constraints on bringing outside talent into the cabinet.¹⁹ Note, however, that government duration has an opposite effect on the technical competence of central bankers, which requires further exploration.

Our findings also add a new twist to Besley and Reynal-Querol (2011), who find that democracies are more likely than dictatorships to select government leaders who have a graduate education. While we do not consider economic leaders during periods of dictatorship in our set of countries, we do have variation within all democracies, and find that levels of economics education among finance ministers are substantially higher in new democracies than in old ones. Our work suggests a possible additional piece to the causal story on why democracy matters. It is not just the fact of democracy but the *age* of that democracy that plays a role.

¹⁹ We did explore a possible interaction between government duration and presidentialism, and obtained mixed results for finance minister appointments across our four measures of competence. We suspect that more fine-grained measures of the possibility of non-legislative recruitment are required to investigate this aspect more fully.

There are also interesting extensions to the central banking literature, which notes a big increase in central bank independence by the 1990s. Those who consider why some countries have more independent banks focus either on the number of veto players — more veto players generally leads to more independent banks and more credible monetary policy (e.g., Bernhard 2002; Keefer and Stasavage 2003) — or on ideational change, where there is a move to more neo-liberal thinking about the difficulties of using inflation to increase economic growth (e.g., McNamara 1998). Our results suggest, consistent with Chwioroth (2010b), that it may require a crisis to change thinking on what sorts of policies are effective. Indeed, we find that banking crises can lead to big jumps in the technical competence of central bank heads in terms of their education — the appointment of an economics PhD as a central bank president is 22 percentage points more likely during a banking crisis.

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