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The revolving door for political elites: policymakers' professional background and financial regulation

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Summary
Regulatory capture of public policy by financial entities, especially via the revolving door between government and financial services, has increasingly become a subject of intense public scrutiny. This paper empirically analyses the relation between public-private career crossovers of high-ranking government officials and financial policy. Using curriculum vitae of more than 400 central bank governors and finance ministers from 32 OECD countries between 1973 and 2005, I compile a new dataset including details on officials' professional careers before and after their tenure and data on financial regulation. Panel data analyses show that central bank governors with past experience in the financial sector deregulate significantly more than governors without a background in finance (career socialisation hypothesis). Using linear probability regressions, the results also indicate that finance ministers, especially from left-wing parties, are more likely to be hired by financial entities in the future if they please their future employers through deregulatory policies during their time in office (career concerns hypothesis). Thus, although the revolving door effects differ between government officials, this study shows that career paths and career concerns of policymakers should be taken into account when analysing financial policy outcomes.

Keywords: Revolving door, Financial regulation, Professional background, Government officials.

JEL Classification: D72, E58, G28.

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1 Introduction

Regulatory capture of public policy by financial institutions has increasingly become a critical issue in many industrial economies (Baker, 2010; Johnson and Kwak, 2010). Denunciation of the political involvement of the financial industry has gained new highs: from Matt Taibbi's attack on Goldman Sachs, the "great vampire squid wrapped around the face of humanity" (Taibbi, 2010, para.1) to the assertion of Paul Ryan, vice-president at the watchdog group Common Cause, that ex-bankers take on jobs in government with the primary intention to repeal Dodd-Frank's strict regulations on the financial sector (Sultan, 2017). Especially following the Great Recession of the late 2000s, critics claimed that politicians, bureaucrats and regulators had ceased to serve the wider public interest and systematically favoured those special interests they were supposed to regulate (OECD, 2009).

The revolving door – the flow of personnel from government offices to financial entities and vice versa – is often perceived as a major driving force of such regulatory capture. Well-known examples of influential policymakers with experience in private finance, such as Alan Greenspan, Tim Geithner or Robert Rubin, seem to support the assumption that earlier and prospective employment in the financial sector influences high-ranking government officials in their financial policy (Johnson and Kwak, 2010; Gadinis, 2013). Yet, systematic evidence for the relation between such public-private career linkages and public policy remains scarce – a surprising fact given the policy relevance of and the public interest in this topic. Are financial sector veterans in senior government posts in fact more likely to deregulate the financial industry? And are policymakers rewarded with lucrative future industry employment if they embark on deregulatory reforms during their time in office?

To answer these questions, this study focuses on the effects of career paths and career concerns of central bank governors and finance ministers on financial regulation. While many actors and institutions shape policy outcomes in democratic systems, these senior officials often dominate the political agenda and play a pivotal role in decisions about economic policy, especially in times of wide-ranging reforms (Johnson and Kwak, 2010; Mishra and Reshef, 2017). Hence, I expect that policymakers with past experience in private finance carry out greater deregulatory reforms than officials without such experience because they bring social connections and socialised policy preferences with them that favour the interests of their former employers. Furthermore, I argue that government officials and financial services companies engage in implicit *quid pro quo* exchanges, where pro-industry policies are rewarded with later careers in the financial sector. I therefore expect that the more that policymakers please their prospective employers through deregulatory policies, the more likely they are to gain lucrative post-government employment in the industry.

To test these hypotheses, I create a new dataset on financial regulation and backgrounds of more than 400 central bank governors and finance ministers from 32 OECD countries between 1973 and 2005. I supplement existing data on past professional experience of government officials with hand-collected data on individuals' careers after their time in office. Similar to related research on political careers (Moessinger, 2014; Hayo and Neumeier, 2016; Hallerberg and Wehner, 2017), this study concentrates on developed countries during democratic periods only.

Leader effects are generally expected to be small in developed nations, where the rules of the game of politics are highly formalised and institutional and legal constraints have significant power to define and shape the appropriate form of leaders' behaviour (Putnam, 1976). It is therefore interesting to ask whether career effects of economic policymakers still exist in more developed democracies.

The results show that characteristics of policymakers in fact matter for policy outcomes in the area of financial regulation, although the effects seem to differ between governors and finance ministers. In particular, central bank governors with past experience in the financial sector are more inclined to deregulate the financial industry than central bankers without such a background, while this effect cannot be demonstrated for finance ministers. Yet, finance ministers, especially from left-leaning parties, are more likely to be hired by financial entities following their tenure if they pursue liberalising reforms during their time in office. In the case of central bankers, in contrast, pushing for deregulatory policy is not found to improve governors' chances of gaining prestigious jobs in the industry.

This study contributes to mainly two strands of literature. First, it expands existing research on the revolving door in finance, which mainly concentrates on the implementation of financial policies at US regulatory agencies (Cohen, 1986; Grace and Phillips, 2008; Agarwal et al., 2014; Lucca et al., 2014; Dehaan et al., 2015; Cornaggia et al., 2016; Shive and Forster, 2016) or markets' reactions to political appointments of former private sector employees (Lüchinger and Moser, 2014; Acemoglu et al., 2016). This article, in contrast, looks at the revolving door of senior government officials and thus explicitly addresses the impacts of public-private linkages on political decision-making.

Second, this study contributes to the growing literature on political careers and political selection. Related studies document effects of political leaders' careers and backgrounds on economic growth (Jones and Olken, 2005; Besley et al., 2011), market-liberalising reforms (Dreher et al., 2009), inflation rates (Havrilesky and Gildea, 1991; Chappell et al., 1995; Göhlmann and Vaubel, 2007; Adolph, 2013) and budgetary performance (Jochimsen and Thomasius, 2014; Moessinger, 2014; Hayo and Neumeier, 2016). Yet, scholars paid hardly any attention to the impact of policymakers' characteristics on financial regulation. The only exception is Mishra and Reshef's (2017) treatment of the issue, which analyses the relationship between employment characteristics of central bank governors and financial regulation in 74 countries from 1973-2005. My study replicates and advances this research by examining the revolving door effect for both central bank governors *and* finance ministers.

The remainder of this study is structured as follows. Section 2 outlines the theoretical concept and derives the two main hypotheses by presenting existing research and illustrating case examples of the revolving door phenomenon in finance. Section 3 then describes the data used in the empirical part of the paper, presents some preliminary descriptive statistics and elaborates on the employed methodology. Section 4 presents the results of the analysis and reviews the robustness of the findings. Lastly, section 5 concludes with a discussion of the limitations and the wider implications of these findings.

2 Theoretical framework and related literature

2.1 Regulatory capture and the revolving door in finance

The literature on financial regulation has long flagged the financial sector's strong incentives and its different ways to affect regulatory policy (Pagliari, 2012; Gadinis, 2013). Besides the direct influence through lobbying expenditures and contributions to political campaigns, the revolving door has been found to be a major way of influence for the financial industry (Baker, 2010; Johnson and Kwak, 2010; Adolph, 2013; Gadinis, 2013). Public employees moving from industry to government are said to be friendly to the industry because they have come to share its views and aspirations. Additionally, outgoing "revolvers" moving from government to industry may have incentives to signal their attractiveness to prospective financial employers by being lenient towards them (Dal Bó, 2006; Agrell and Gautier, 2012).

Although these revolving door effects have increasingly gained attention in empirical research on financial regulation due to their major implications for public policy, related studies mainly concentrate on career effects for regulators at US agencies, including state insurance and banking regulators (Grace and Phillips, 2008; Agarwal et al., 2014) and US federal financial regulators (Dehaan et al., 2015; Shive and Forster, 2016). However, the extensive movement from the top of the bureaucracy and public offices into big business matters in other countries besides the United States. Known as *amakudari* ("descent from heaven") in Japan and *pantouflage* in France, this phenomenon is further prevalent in countries such as Spain, the Netherlands and Denmark (Schneider, 1993; Adolph, 2013). More importantly, little is known about the revolving door effect for influential economic policymakers, namely central bank governors and finance ministers, in the context of financial regulation. Especially during the creation of reform policy, these political leaders are likely to have great power to shape it, given that it requires inventive guidance rather than operational routine (Dreher et al., 2009). Furthermore, besides finance ministers, central bank governors are also often instrumental in shaping the legal regulatory environment – even in cases where financial regulation is not the central bank's sole responsibility (Mishra and Reshef, 2017). One may, for instance, think of Chairman of the Federal Reserve Alan Greenspan, a major driver behind financial deregulation in the United States (Johnson and Kwak, 2010), or Raghuram Rajan, who pushed for a regulatory reform agenda as the head of the Bank of India (Mishra and Reshef, 2017). This study therefore applies the revolving door hypotheses to these high-level public officials.

2.2 Career socialisation: cultural capture of government officials

My first argument rests on the idea that high-level officials with a professional background in the financial services industry are socially conditioned to push for financial deregulation while in office because long experience in private banking engenders free-market ideas and strong social ties with the sector (Baker, 2010; Gadinis, 2013; Dal Bó, 2006).

At least two mechanisms can produce such socialised pre-existing preferences of political

officials for deregulatory policy. First, political elites may show greater sensitivity to the financial sector's concerns due to social connections with the industry. The revolving door between government and industry links actors on both sides of the door in a common policy network, giving the financial sector a direct and privileged access to key policymakers (Johnson and Kwak, 2010). As officials are presumably more likely to take a phone call from someone they know than from a stranger (Acemoglu et al., 2016) and may feel empathy for their former colleagues (Hill and Painter, 2011), they are likely to push for deregulatory policies that benefit their career-based peer groups.

In a second and stronger version of the career socialisation argument, central bankers and finance ministers with prior industry employment may possess attitudes favourable to the sector because they have come to share its world views. Summed up in the phrase "[w]here you stand depends on where you sit" (Miles, 1978, p.399), organisation theorists and public administration scholars have long argued that every profession has its own rules and fundamental values, which leave a cultural imprint on an agent's behaviour over time (Meier and Nigro, 1976, van Maanen and Schein, 1979, cited in Adolph 2013). Similarly, students of political elites have stressed the importance of professional socialisation of policymakers, asserting that "[v]alue-socialisation is not parental, or even based on early political experience, but apparently takes place from working in a given field or institutional setting" (Barton, 1973, p.242, also see Putnam 1976). There is little reason to assume that private banking is an exception, as the financial service industry has long been identified as an intense working environment that forms employees' beliefs and economic ideas (Ho, 2009; Adolph, 2013).

Several studies indeed show that professional experience in the financial sector has pervasive, enduring effects on the behaviour of policymakers (Havrilesky and Gildea, 1991; Göhlmann and Vaubel, 2007; Dreher et al., 2009; Adolph, 2013; Jochimsen and Thomasius, 2014). Analysing German state-level data, Jochimsen and Thomasius (2014), for example, find that finance ministers who gained experience in the financial business sector achieve significantly lower budget deficits, while their education and individual partisan preferences do not seem to matter. Similarly, the literature on the Federal Reserve as well as cross-country studies indicate that former private bankers are much more hawkish on inflation than other monetary policymakers (Havrilesky and Gildea, 1991; Göhlmann and Vaubel, 2007; Adolph, 2013). While few studies have examined the link between policymakers' professional experience in private banking and their preference for financial deregulation, the existing evidence also supports the career socialisation argument. Igan and Mishra (2014), for instance, find that lobbying expenditures by the financial industry are positively associated with the probability of a US-legislator switching in favour of deregulation and that this link is enhanced by a legislator's own experience on Wall Street. Furthermore, in a paper more closely related to this study, Mishra and Reshef (2017) find that a central banker with a finance background deregulates three times more over his tenure than a governor without such experience.

Apart from this cross-sectional evidence, illustrative case studies highlight the importance of career socialisation for government officials' stance on financial regulation. As numerous Wall Street veterans, such as Secretary of Treasury Henry Paulson and Robert Rubin, gained power and influence in the US government, their preference for complex financial products, sophisticated financial institutions and free financial markets soon became conventional wisdom

in Washington and can explain why the federal government showed growing sensitivity for the interests of Wall Street since the 1990s (Johnson and Kwak, 2010). However, the "Wall Street-Treasury complex" (Bhagwati, 1998, p.7) is just one well-known example of cultural capture by the finance industry. It was not before Miguel Mancera Aguayo became governor of Banco de Mexico that the country saw a major turn towards far-reaching financial deregulation. Mancera had worked for Mexico's largest bank Banco de Comercio for several years before starting his career within the central bank and had strong links to prominent figures of the country's financial circuit, such as Pablo Aveleira, Director of the Research Department at Banamex (Santin Quiroz, 2001). The former banker not only strongly opposed the imposition of capital controls in the face of the widespread capital flight in the early 1980s, but also openly criticised controls on the domestic banking sector as they would hamper competition and innovation and hence increase market inefficiencies (Santin Quiroz, 2001; Volcker et al., 1991). While his predecessor Carlos Tello, a Keynesian economist with extensive professional experience in the public sector, was known as the "architect of the nationalisation plan" during Portillo's administration (Babb, 2005, p.252), Mancera's appointment as governor of the central bank in 1982 marked a major reversal in Mexico's financial regulation policy, resulting in the wide-ranging re-privatisation of commercial banks and state-run enterprises (Santin Quiroz, 2001; Babb, 2005).

Building on this theoretical and empirical background, I therefore expect the following:

> **Hypothesis 1a/b**: Central bank governors/finance ministers with past occupational experience in the financial sector pursue stronger deregulatory reforms while in office than governors/ministers without such experience.

One issue with the socialisation mechanism that immediately comes to mind is the self-selection problem of political elites. Some officials might opt for deregulatory policy not because they are socialised by their experience in finance but because they have latent, pre-existing conservative preferences that induce them to both work for the financial industry and deregulate the market while in office. However, research on political elites tends to confirm that political leaders' views are less influenced by their childhood experiences and early socialisation than by their adult roles and affiliations (Putnam, 1976). Furthermore, financial sector regulation is likely to be a subject few spare any thought for before adulthood and spending years or decades in an industry strongly affected by regulatory policy might even overwrite preferences stemming from fundamental beliefs (Adolph, 2013). Nevertheless, as I cannot completely rule out the possibility of self-selection, I will not claim that my results are causally interpretable.

2.3 Career concerns: exchanging future careers for policy influence

Besides the career socialisation effect, the revolving door in finance is often said to encourage public officials to accommodate the strong interests of the industry in order to gain lucrative future careers in the sector (Stigler, 1971; Cohen, 1986; Dal Bó, 2006; Baker, 2010). To the extent that central bankers and finance ministers are influenced by future career advancements in the private sector, they are likely to create lenient financial rules in order to attract attention from

the industry and signal their congruence with the sector's views (Agrell and Gautier, 2012; Adolph, 2013). Such prospects of future career rewards render the financial sector a "shadow principal" (Adolph, 2013, p.17) that, despite lacking a formal role in policymaking, can exert effective influence on regulatory policy through informal means. Even if political elites do not actively plan their next career move, they may try to curry favour with the regulated industry given the uncertainty about the concrete end of their mandate. Finance ministers and central bankers in my sample, for instance, only have average tenures of about three and six years, respectively. In order to retain lucrative outside options in the medium run, these officials may therefore have an incentive to stay on good terms with their prospective future employers (Johnson and Kwak, 2010). Firms in the financial industry, in turn, have an interest in hiring former government officials who have displayed a favourable stance towards the industry. Those former political appointees are especially valuable because they are likely to openly share their market-related insights and use their personal clout to continuously influence regulatory policy in accordance with the industry's concerns. In that way, the regulatory process turns into a *quid pro quo* where lenient regulation is rewarded with lucrative future job opportunities in the industry (Dal Bó, 2006).

One may challenge this *quid pro quo* approach on the grounds that regulators might in fact be hired for their technical expertise and competence rather than their lobbying capital (Che, 1995; Dal Bó, 2006). If firms want to employ individuals with higher ability and knowledge of the regulatory environment and these characteristics are not readily observable, regulators have an incentive to be harsh against industry in order to signal their technical expertise (Che, 1995). Some recent studies on the revolving door of financial regulators indeed find evidence for this alternative "regulatory schooling" hypothesis (Lucca et al., 2014; Dehaan et al., 2015; Shive and Forster, 2016). Yet this mechanism is presumably less relevant for policymakers. First, well-known political officials, who are often present in the public debate, may be able to signal both their competence *and* inclination towards lax regulation. Second, and more importantly, it is likely that, unlike employees of regulatory agencies, policymakers are primarily hired for their lobbying connections rather than their regulatory expertise. If financial firms want to hire individuals with strong technical ability, former regulators or high-level personnel in other financial companies may be an easier or safer target group than politicians.

In addition, several pieces of empirical evidence of the revolving door confirm the *quid pro quo* idea. In an early study, Cohen (1986) examines whether industry employment affects voting behaviour at the Federal Communications Commission and finds that commissioners who accept industry employment after leaving the agency increase their support for industry interests by about 11 per cent during their last year in office. With respect to financial regulation, Grace and Phillips (2008) study whether state insurance regulators who subsequently work for the insurance industry favoured the sector when regulating prices. They show that regulators who are hired by the industry upon leaving office permit higher insurance prices during their tenure compared with officials who take employment in other industries after office. Using a difference-in-differences approach, Cornaggia et al. (2016) similarly find that credit analysts, who transition to firms they rate, grant inflated and less informative ratings to their future employers a few months before leaving the agency. Furthermore, in an extensive study more closely related to career concerns of political elites, Adolph (2013) shows that central bankers are most hawkish on inflation when they not only work for the finance industry before joining

the monetary policy committee but also take a subsequent job in finance.

While these studies already lend some support to the career concerns mechanism of administration officials, several case examples bolster the idea that finance ministers and central bankers rely on deregulatory policies to increase their prospects for a lucrative future career in the financial sector. Miguel Mancera Aguayo was not the only high-ranking Mexican official who argued that strong controls on the banking sector impeded savings and caused an inefficient allocation of credit and resources (Santin Quiroz, 2001). Another major figure during Mexico's frenetic deregulatory reforms in the 1980s and 1990s was Pedro Aspe, the country's finance minister from 1988-1994. Together with the deputy minister of finance, Guillermo Ortiz, Aspe pushed for significant deregulations of banking operations in 1989, including the elimination of interest rate ceilings and selective credit controls (Santin Quiroz, 2001). His motivation seemed to at least partly stem from career concerns and reputational gains in the financial sector. As Santin Quiroz (2001, p.103) puts it: "Aspe and Ortiz advocated financial liberalisation because it was consistent with their own beliefs, but also because the reform appealed to international capital and to the domestic financial elite." Indeed, shortly after leaving the ministry of finance, Aspe became chairman at Vector Casa de Bolsas, a major capital markets company.

The closest we can get to a smoking gun, however, is the career of Robert Rubin, US Secretary of Treasury from 1995-99. Rubin's reign was mainly characterised by ample deregulation in the banking sector paired with the rapid development of new financial products, such as collateralised debt obligations and mortgage-backed securities – policies that are widely known as "Rubinomics" (Johnson and Kwak, 2010, p.100; Hill and Painter, 2011). One of his most important achievements was the repeal of the Glass-Steagall Act, a Depression-era legislation which separated commercial and investment banking in the United States. This law and its 25 per cent revenue limit from underwriting and dealing in securities posed a significant barrier for banks seeking to expand into investment banking territories. More importantly, when Travelers, a major commercial bank, and Citicorp, a major insurance company that owned a leading investment bank, merged in 1998, Glass-Steagall forced the newly created Citigroup to split up within two years (Johnson and Kwak, 2010). Ever since his appointment, Rubin pressured President Clinton to back an abolition of the law. In a letter to the president in May 1997, for instance, the secretary tried to spur the repeal of Glass-Steagall by reassuring the president that the issue did not require much of his attention: "Should you approve our recommendation to move forward, the proposal would be a Treasury initiative, and would not require a significant time commitment from the White House. [...] I and my staff will manage the process of advancing the proposal." (Robert Rubin, cited in Roberts, 2014, para.22-23) Rubin finally succeeded in 1999 when Congress passed the Gramm-Leach-Bliley Act, giving retrospective clearance to the merger of Citigroup. Less than a week after the Clinton Administration and Congress had agreed on the bill, Rubin became board member and later chairman at Citigroup (Kahn, 1999).

Although the evidence hints towards considerable career concerns of government officials in the realm of financial regulation, empirically examining the concept is inherently difficult as this would require information about career motivations of the political elite during their time in office. Most officials, however, are likely to deny such incentives and insist on a high-minded interest for the public good (Adolph, 2013). Nevertheless, if finance ministers and central

bankers really are able to engage in effective job-for-policy exchanges with the financial sector, career concerns should lead to more post-government jobs in the industry when the shadow principal receives its preferred policy. I therefore expect the following:

> **Hypothesis 2a/b**: The more central bank governors/finance ministers deregulate the financial market during their time in office, the more likely they are to gain employment in the industry after their tenure.

3 Research design

3.1 Data on financial regulation and elites' revolving door

To test these hypotheses, I hand-collected a new dataset that covers detailed information on the professional background of 165 central bankers and 392 finance ministers, as well as on domestic financial regulation in 32 OECD countries.[1] The data span the years 1973-2005 although I follow related work (Hallerberg and Wehner, 2017) and only incorporate democratic periods that are denoted by a positive Polity IV score. Rent-seeking interest groups, such as the financial sector lobby, are often found to have substantial influence on economic reforms in democratic regimes (Rajan and Zingales, 2004). Autocratic governments, in contrast, might be able to shelter institutions against captive efforts of specific interest groups, or officials entrenched in crony capitalism may have a bias towards specific businesses rather than the entire industry (Giuliano et al., 2013). To ensure a better comparability of the background of regulatory reforms and the revolving door concept, I therefore include democratic periods only.[2]

Data for the annual degree of financial deregulation in these 32 countries over time are taken from Giuliano et al. (2013). While most other measures of domestic financial regulation cover very few countries or only use binary scores (Bandiera et al., 2000; Laeven, 2003), their variable is a graded index that contains various sub-indices summarising different dimensions of the regulatory framework. It is normalised between 0 and 1 where higher values indicate stronger deregulation. This index of domestic financial liberalisation is an average of measures for securities markets regulation and banking regulation. The sub-indicator for securities markets captures policies that restrict or encourage the development of domestic bond and equity markets, such as the auctioning of government securities or permitting access to the domestic stock market by non-residents (Abiad et al., 2008; Giuliano et al., 2013). The banking sub-index, in turn, captures policy measures on capital controls and interest rate controls, entry barriers in the banking market, state ownership in the banking sector as well as the quality of banking supervision and regulation.[3] Following related literature (Dreher et al., 2009; Giuliano et al., 2013; Mishra and Reshef, 2017) the financial reform variable is then defined as the annual *change* in the aggregated deregulation index for a given country.

Turning towards the elite's occupational background, information on officials' names, dates of duty and their prior work experience is taken from Hallerberg and Wehner (2017). Their dummy variable on private banking indicates whether the professional experience of a country's finance minister or central bank governor prior to occupying the office includes working in a commercial bank or the financial services industry more broadly. Hence, besides retail banks, this includes credit unions, consumer finance and capital markets firms, investment funds, credit

[1] These are Australia, Austria, Belgium, Bulgaria, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Latvia, Lithuania, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States.

[2] This implies that Bulgaria, Chile, Estonia, Hungary, Latvia, Lithuania and Romania are only included since 1990, Greece since 1974, Mexico since 1988, Czech Republic and Poland since 1989, Portugal since 1976, Spain since 1977 and Turkey is excluded between 1980 and 1982.

[3] For further information on the construction of its sub-indicators, see Abiad et al. (2008); Giuliano et al. (2013).

card companies as well as insurance companies, stock brokerages and some government-sponsored enterprises. Additionally, I hand-collected data on the officials' professional careers in finance following their tenure in government. This information is taken from the biographical databases *BoardEx, Munzinger* and *World Who's Who Online* and is further supplemented by and cross-checked with data from several other encyclopaedias and online sources.[4] The respective dummy variable then indicates whether a central bank governor or finance minister became president, chairman or member of the board of directors, including supervisory boards, of a financial services entity directly after their office.[5]

Table 1: Professional experience of central bank governors and finance ministers

	Central bank governors	Finance ministers		
	Total	Total	Among left	Among right
Finance exp. before office	49 (29.7%)	63 (16.1%)	11 (9.0%)	36 (17.7%)
Finance exp. after office	44 (26.7%)	42 (10.7%)	12 (9.8%)	22 (10.8%)
Finance exp. both before and after office	12 (7.2%)	9 (2.3%)	2 (1.6%)	7 (3.4%)
N	165	392	122	203

Sources: See appendix Table A9.

Note: Depicted is the number of central bank governors and finance ministers that have each type of occupational experience, plus the per cent of the entire sample that these observations represent (not regarding missing observations). Note that information on past employment is missing for 1 governor and 3 ministers, respectively. Data on future employment remains missing for 19 governors and 6 ministers, respectively.

Table 1 summarises the occupational background of central bank governors and finance ministers before and after their tenure in office. Officials with work experience in the financial industry are much more common among central bank governors than among finance ministers. While about 30 per cent and 27 per cent of governors worked for the financial sector before and after their time in office, this applies to only 16 per cent and 11 per cent of finance ministers, respectively. Interestingly, the fraction of senior public officials going back and forth between

[4]For more detailed information on the data sources and description see Table A9.

[5]To ensure a good comparability with the data on elites' prior professions, I adopt Hallerberg and Wehner's (2017) broad definition of the financial services industry, except for government-controlled entities. While state-run financial enterprises are likely to have the same potential to socialise their employees according to the sector's values, they induce a very different incentive structure than privately owned and operated firms as presidents and board members are normally appointed by the government (Adolph, 2013). Hence, public officials gaining employment in these enterprises may be rewarded for accommodating the government's preferences for financial policy rather than those of the financial sector. I therefore only consider privately owned financial firms in the indicator for post-government industry employment. Supervisory board members are included because they are chosen by the stockholders and employees of a company to advance their interests and they often not only supervise executive directors but also hire them (Agrawal and Knoeber, 2001). However, I exclude advisers that were completely external to management.

the public and private sector appears to be rather small. Only about 7 per cent of central bankers and and 2 per cent of finance ministers have private banking backgrounds both prior to and directly following their tenure. Another notable fact is that although past financiers are more common among right-leaning finance ministers, this partisan gap seems to diminish when it comes to post-government employment in the financial sector. With 12 out of the 122 left-leaning and 22 out of the 203 right-leaning ministers in the sample, the financial sector appears to be similarly attractive as a future employer for finance ministers with different political backgrounds.

3.2 Methodology and further variables

The presented revolving door theory predicts that government officials with prior experience in the financial sector are socially conditioned to pursue deregulatory policy (H1a, H1b) and that senior bureaucrats can boost their employment prospects in the financial services industry by designing lenient regulation (H2a, H2b). Given that the financial reforms variable only varies at the country-year level, testing these hypotheses requires that annual reforms are closely matched to the economic policymakers responsible for them. However, in some years more than one central bank governor and finance minister hold office. I rely on the year's longest serving governor and finance minister in these cases. If an official is replaced in the beginning of a year, this strategy makes sure that her successor, who is responsible for the country's financial policy for most of the year, is retained (Moessinger, 2014).[6] The alternative of assigning the same reform to multiple governors and ministers is not only causally discomforting but also potentially creates serial correlation in the errors when fitting the panel data model below. However, in the robustness section, I keep the first governor and minister in every year to check for the sensitivity of the results.

3.2.1 Testing career socialisation: a panel data approach

Building on related research (Giuliano et al., 2013; Mishra and Reshef, 2017) I use the following conditional change model (CCM) with country-year units of analysis to test the career socialisation mechanism:

$$\begin{aligned} Reform_{c,t} &= Index_{c,t} - Index_{c,t-1} \\ &= \alpha + \beta_1 Financeprior_{i,c,t} + \beta_2 Index_{c,t-1} + \boldsymbol{\beta_k X_{k,c,t}} + \gamma_c + \delta_t + \epsilon_{c,t} \end{aligned} \quad (1)$$

[6] This leaves us with a country-year panel dataset with 150 central bank governors and 309 finance ministers. Information on prior professional experience is available for 149 governors and 307 ministers. Data on post-government employment, in turn, is accessible for 133 governors and 304 ministers.

where $Reform_{c,t}$ is the annual financial reform of country c at time t.[7] The variable of interest is the dummy $Financeprior_{i,c,t}$ indicating whether a country's economic policymaker i has prior experience in finance. According to the socialisation hypotheses H1a and H1b I expect β_1 to yield a positive coefficient for both central bank governors and finance ministers. $\boldsymbol{X_{k,c,t}}$ is a vector of country-specific and time-varying controls described below and γ_c and δ_t represent country and year fixed effects, respectively.

By controlling for the lagged level of the deregulation index $Index_{c,t-1}$, I estimate a CCM rather than an unconditional change-score model for mainly two reasons (Finkel, 1995). First, including this variable accounts for the mechanical effect that the deregulation index is bounded between 0 and 1 and hence leaves less room for deregulation if the status quo is already highly deregulated (Mishra and Reshef, 2017). Second, the past level of regulation can also serve as a measure of a country's impetus for or against the implementation of reforms. Perceived costs of excessive regulation or lax rules leading to market failures may depend on the status quo of the regulatory framework (Giuliano et al., 2013). Such incentives could also determine the "type" of the current governor or finance minister to be chosen. If, for example, a country's level of regulation is very high, selection effects might arise where political leaders with a preference for more deregulation may strategically appoint policymakers with a finance background.

I further control for several other sources of government officials' preferences and time-varying country-specific confounders. First, I condition on whether policymakers have postgraduate training in economics, that is, a masters or doctoral degree, because advanced education in economics may provide technical expertise helping policymakers to resist capture from individual interests and implement more efficient policies for the broader public good (Dreher et al., 2009; Adolph, 2013). Additionally, I control for whether governors and finance ministers went to top US graduate schools because those institutions are generally known for their emphasis on market efficiency and rationality, and related research found that education at Ivy League universities is strongly related to policymakers' conservative economic preferences (Havrilesky and Gildea, 1991; Chappell et al., 1995). For finance ministers, I also include a standardised measure for the left-right position of their party.

At the country level, I further control for the partisanship of government and the existence of banking crises given that these factors have been shown to be related to the selection of policymakers with a finance background (Hallerberg and Wehner, 2017) and are likely to impact a country's tendency for deregulatory reforms. Right-wing governments are generally regarded as more inclined to liberalise markets, and government intervention and regulation become more likely in the wake of financial distress (Abiad and Mody, 2005). To correct for endogeneity and potential post-treatment bias, the measure of banking crises is lagged by one year. Lastly, I condition on reforms in neighbouring countries, the existence of IMF programmes and EU membership to control for imitational effects and external pressures leading to domestic financial reforms (Mishra and Reshef, 2017). These factors capture time-varying and country-specific trends in financial reform (Mishra and Reshef, 2017). Although other studies

[7] Note that this is a simple transformation of a dynamic panel model with $Index_{c,t}$ as the dependent variable given that the model could also be written as
$Index_{c,t} = \alpha + \beta_1 Financeprior_{i,c,t} + (\beta_2 + 1)Index_{c,t-1} + \boldsymbol{\beta_k X_{k,c,t}} + \gamma_c + \delta_t + \epsilon_{c,t}$. Indeed, fitting this model yields the same estimates for all coefficients, except for $Index_{c,t-1}$. See Finkel (1995) for a discussion of the close relationship of these models and their interpretation.

further account for highly persistent factors such as the form of government (Mishra and Reshef, 2017), these variables are specifically omitted here because their explanatory power is mostly absorbed by the country fixed effects in the model. Table A1 presents summary statistics for the variables of the CCM and Table A9 describes the details and data sources of these controls. I present results with standard errors clustered by country in order to account for serial correlation and within-panel heteroskedasticity (Wooldridge, 2013).[8]

3.2.2 Testing career concerns: a linear probability model

To test the career concerns mechanism (H2a/b), I use the following linear probability model (LPM) in which the propensity that a government official i in country c at time t gains lucrative employment in the industry is a function of their policy during office:

$$Directfinanceafter_{i,c,t} = \alpha + \beta_1 Deregulation_{i,c,t} + \boldsymbol{\beta_k X_{k,i,c,t}} + \gamma_c + \delta_d + \epsilon_{i,c,t} \quad (2)$$

The measure of deregulatory reforms, $Deregulation_{i,c,t}$, is calculated as the sum of the annual reforms undertaken by a central bank governor and finance minister over their tenures, respectively. According to the predictions of the career concerns hypotheses I expect β_1 to be positive. I include country fixed effects to absorb country-specific time-invariant confounders and decade fixed effects when the official leaves office to account for common trends to financial sector employment and financial deregulation. I further include a vector of official-specific controls, $\boldsymbol{X_{k,i,c,t}}$, to capture factors that may both affect individuals' tendency to deregulate and their future employment prospects. I condition on a person's full years in office when leaving their position in government given that a longer tenure increases the possibility of policy changes and officials' perceived seniority and expertise. Additionally, I control for a governor's and minister's prior financial and educational background and partisanship (for ministers only) to account for other sources of specialised knowledge and networks that enable post-government employment in the industry. In order to gain credibility with financial markets, left-leaning governments might hire more conservative policymakers who are more prone to both deregulating the financial industry and taking on jobs in the finance sector in the future (Hallerberg and Wehner, 2017). I therefore also control for the partisanship of the appointing government for each policymaker. While one may further want to include a measure for financial markets' performance during policymakers' final years in office (Grace and Phillips, 2008), these variables are specifically excluded given that they may also result from deregulatory reforms, leading to potential post-treatment bias (Angrist and Pischke, 2008). Table A2 reports summary statistics for the variables used in the model.

I follow related work (Igan and Mishra, 2014; Hallerberg and Wehner, 2017) and use a LPM instead of a fixed effects logistic regression for mainly two reasons. First, in case of insufficient variance in outcomes for some units, logistic regressions lead to huge losses in efficiency (Hallerberg and Wehner, 2017). Furthermore, the interpretation of coefficients has much less intuitive appeal (Wooldridge, 2013). However, I consider an analysis with logistic regressions in

[8] Given the model's close relationship to a dynamic panel model (Finkel, 1995) and as I include country fixed effects, one might further be concerned about Nickell bias (Nickell, 1981). However, this is less of an issue given that the average number of time periods per country is at least 20 in all models (Beck and Katz, 2011).

the robustness section below. The results are estimated using robust standard errors given that LPMs necessarily lead to heteroskedastic errors (Wooldridge, 2013).

4 Results

Table 2 and Table 3 report the results of the CCM and the LPM, respectively. Given that data on some of the control variables are not always available, I introduce controls subsequently to show the robustness of the results across models. Models 1-3 report results for central bank governors and models 4-6 show estimates for finance ministers in both tables. In model 7 of Table 2, I include the characteristics of both central bankers and finance ministers.

4.1 Career socialisation

The results for the career socialisation mechanism in Table 2 show that the effect of prior experience in the financial sector on financial regulation is positive for central bankers (H1a) as expected. The estimated effect is significant in all models for governors (at least on a 10 per cent confidence level), while it is more imprecisely measured in the very demanding model 7 (p=.132). This lends support to the claim that central bank governors with past experience in the financial services industry are associated with greater financial reform than their peers who have been socialised in different work environments. The estimates predict that, on average, annual deregulatory reform is between 0.011 and 0.013 points greater when a governor with finance background holds office than when a country's governor has no prior experience in finance.

In order to allow for a more substantial interpretation of the results, Figure 1 depicts the marginal effects of the finance variable in model 3, keeping all other variables at their means. The effects seem significant from a political economy perspective: while the average yearly reform among governors without a finance background only amounts to about 0.0157, the estimated annual change in regulation is 0.0276 when a country's governor has a professional background in finance. Hence, the estimated coefficient of 0.013 in model 3 suggests that deregulatory policy changes increase on average by about 83 per cent in years in which a governor has prior financial sector experience. Given that the 150 central bankers in this sample have an average tenure of 6.2 years, governors who have been socialised in the financial sector can, on average, raise deregulatory reforms by about five times during their time in office.[9]

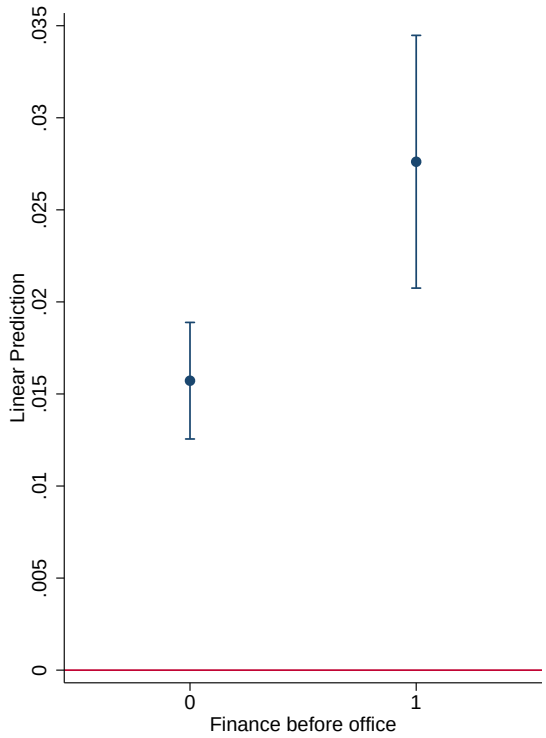
[9] $6.2 * \frac{0.013}{0.0157} = 5.13$; for a similar analysis see Mishra and Reshef (2017).

Table 2: Regression models for career socialisation, main results
Conditional change model

	H1a: Governors			H1b: Finance ministers			H1a, H1b
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Finance before office CB	0.012*	0.013*	0.013*				0.011
	(0.006)	(0.006)	(0.007)				(0.007)
Finance before office FM				0.005	0.003	0.000	-0.000
				(0.004)	(0.006)	(0.006)	(0.008)
Reform index (lag)	-0.133***	-0.133***	-0.125***	-0.130***	-0.110***	-0.114***	-0.132***
	(0.021)	(0.019)	(0.018)	(0.023)	(0.020)	(0.022)	(0.022)
Econ degree CB		0.008	0.010				0.011*
		(0.005)	(0.006)				(0.006)
Ivy League CB		0.026*	0.029**				0.032**
		(0.013)	(0.012)				(0.013)
Econ degree FM					-0.000	0.000	0.000
					(0.005)	(0.005)	(0.004)
Ivy League FM					0.005	0.013	0.013
					(0.012)	(0.013)	(0.013)
Left-right party FM					-0.000	0.016	0.016
					(0.012)	(0.010)	(0.011)
Banking crisis (lag)			-0.016			-0.018	-0.016
			(0.010)			(0.011)	(0.011)
Left-right party PM			0.002			-0.022*	-0.011
			(0.011)			(0.011)	(0.012)
Reform in geogr. neighbours			-0.274			-0.317*	-0.311*
			(0.162)			(0.175)	(0.161)
IMF programme			-0.006			-0.006	-0.010
			(0.007)			(0.007)	(0.007)
EU membership			0.020*			0.023	0.032***
			(0.010)			(0.014)	(0.011)
N	838	755	659	836	701	661	596
Number of countries	32	32	30	32	30	30	29
R^2	0.20	0.20	0.21	0.19	0.19	0.21	0.23

Notes: Panel OLS regression with country and year fixed effects (not reported); all models include a constant. CB, FM and PM stand for central banker, finance minister and prime minister, respectively. Dependent variable: $Reform_{c,t}$. Clustered standard errors by country in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Figure 1: Marginal effects plot of *Financeprior* for central bank governors



Note: Depicted are marginal effects of prior financial sector experience for central bank governors, computed from model 3 of Table 2.

For finance ministers, in contrast, I do not find any evidence for the hypothesis that prior experience in finance conditions ministers to deregulate the financial market more during their time in office (H1b). The coefficient of models 4 to 6 is very small and statistically insignificant, irrespective of the covariates included. These findings raise the question as to why career socialisation effects seem to be non-existent for finance ministers while there is evidence for the claim that ex-financiers are more prone to deregulating the financial services industry in the case of central bank governors. One possible explanation is that most finance ministers pass a substantial career in the public sector before their appointment, while heads of central banks are often directly recruited from the private sector. After his position as investment manager at NM Rothschild & Sons, Norman Lamont, for instance, spent more than 10 years working for several public institutions, such as the Department of Energy and the Ministry of Defence, before becoming UK Chancellor of the Exchequer in 1990 (BoardEx, 2017). In such cases, earlier professional socialisation in the financial sector and its effects on ministers' preference for deregulation might be dampened by subsequent experiences in the public sector.

With respect to the control variables, only a few factors are found to be related to financial reforms. Interestingly, besides the lagged level of financial deregulation, only the graduate institution of central bank governors has a substantial and robust effect on financial reform. The results in model 3 imply that a country's annual rate of deregulation increases by 0.029 points if a central bank governor studied at an Ivy League university compared with central bankers who

went to other graduate schools or did not complete a graduate degree at all.[10] This conforms to existing research that identifies prestige of education as an important explanation for central bankers' policy decisions (Havrilesky and Gildea, 1991; Chappell et al., 1995). Hence, the results suggest that governors' policy preferences are not only shaped by prior occupational experiences, but also by the context of their educational training.

4.2 Career concerns

While the evidence points towards career socialisation effects for central bank governors, the data do not support the hypothesis that governors can increase their job prospects in the financial sector through deregulatory policy (H2a). In models 1 and 2 of Table 3, the deregulation variable even yields a negative coefficient, indicating that governors who deregulate more during their time in office are less likely to be hired by financial entities following their tenure. However, as the estimated coefficient clearly fails to demonstrate statistical significance and appears to be unstable across models, these results are in line with existing research which similarly does not find a relationship between financial sector reform and governors' future experience in the financial industry (Mishra and Reshef, 2017).

In the case of finance ministers, in contrast, the evidence lends clear support to H2b, indicating that ministers seem to engage in effective *quid pro quo* exchanges with the financial sector. A one-standard deviation increase in deregulatory measures over their term in office (SD=0.09) increases finance ministers' probability of post-government employment in the financial services industry by about 6.4 per cent (model 6). The results further suggest that ministers with past professional experience in finance and those coming from right-wing parties are more likely to join firms in the finance sector directly after their tenure. Additionally, left-leaning governments seem to be more inclined to appoint more conservative policymakers who aim for financial sector jobs after their time in office. This conforms to existing research arguing that leftist governments may use strategic appointments of policymakers in order to gain the confidence of capital markets and reassure investors (Hallerberg and Wehner, 2017).

One potential explanation for these differences between governors and finance ministers could be that most central bankers might be perceived to be generally more conservative in their policy preferences than finance ministers whose political backgrounds and constituencies vary substantially. After Rogoff's (1985) endorsement of a credibly conservative and independent central banker as a solution to the inflationary bias of monetary policy (Kydland and Prescott, 1977; Barro and Gordon, 1983), central bank independence and monetary conservatism soon became the conventional wisdom of central banking around the globe (McNamara, 1998). Indeed, leading central bankers between the 1980s and mid-2000s, such as Paul Volcker or Alan Greenspan, had a strong image of anti-inflationary conservatism, while their predecessors were widely known for their liberal economic beliefs (Romer and Romer, 2004). In the context of this general perception, the signalling effect of deregulatory policy might be smaller in the case of

[10] I repeated the analysis with different specifications of the graduate institution variable, where I included: (i) all US universities; (ii) both US and UK high-ranking schools; and (iii) all Anglo-American institutions. For all specifications, the effect on deregulation diminished substantially and remained significant only for US universities. The estimated coefficient of the main variable of interest, $Financeprior_{i,c,t}$, remained largely unchanged.

central bankers as preferences between governors and financial entities appear to be already closely aligned. Hence, during most of the sample period, financial markets might not have relied on policy decisions of central bankers to assess their suitability for future leadership positions. The following additional analysis tries to shed some more light on this idea of differences in the credibility of policy signals.

Table 3: Regression models for career concerns, main results
Linear probability model

	H2a: Governors			H2b: Finance ministers		
	(1)	(2)	(3)	(4)	(5)	(6)
Deregulation ($\sum$reform)	-0.089	-0.145	0.150	0.692**	0.594**	0.715**
	(0.327)	(0.385)	(0.548)	(0.280)	(0.299)	(0.299)
Years in office		0.004	-0.001		0.010	0.004
		(0.010)	(0.012)		(0.010)	(0.010)
Finance before office			0.084			0.128*
			(0.137)			(0.076)
Econ degree			0.149			-0.035
			(0.125)			(0.052)
Ivy League			-0.043			0.038
			(0.220)			(0.106)
Left-right party appointing PM			-0.168			-0.341**
			(0.355)			(0.156)
Left-right party FM						0.376**
						(0.155)
Observations	133	133	104	304	304	245
R^2	0.41	0.41	0.50	0.25	0.25	0.30

Sources: See appendix Table A9.

Note: Linear probability OLS regressions with country and decade fixed effects (not reported); all models include a constant. FM and PM stand for finance minister and prime minister, respectively. Dependent variable: $Directfinanceafter_{i,c,t}$. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

4.3 Further analysis: costly signals and post-government employment

If the explanation for the ineffectiveness of governors' policy signals towards financial markets indeed points in the right direction, we should also expect to find that the credibility of deregulatory policy signals by finance ministers depends on their pre-disposed ideological preferences. While a strong liberalisation of financial markets by a right-leaning finance minister may simply be perceived as partisan, measures such as the abolition of interest rate ceilings or credit controls coming from leftist ministers are likely to signal strong commitment to pro-market policies. By enacting policies that are costly and stand in contrast to the direct interest of their constituents, left-wing finance ministers may provide more credible information to financial markets about their intentions and career motivations (Cukierman and Tommasi,

1998; Tavares, 2004). Hence, the linkage between deregulatory reforms and post-government employment in the financial sector should be stronger for finance ministers from left-leaning parties than for conservative policymakers.

Table 4: Further analysis, career concerns and partisanship
Linear probability model

	(1)	(2)	(3)
Deregulation ($\sum$reform)	1.349	1.282	1.576*
	(0.834)	(0.834)	(0.836)
Left-right party FM	0.203	0.202	0.463***
	(0.129)	(0.130)	(0.171)
Deregulation*Left-right party FM	-1.161	-1.159	-1.706
	(1.498)	(1.491)	(1.408)
Years in office		0.006	0.005
		(0.010)	(0.009)
Finance before office			0.121
			(0.074)
Econ degree FM			-0.039
			(0.051)
Ivy League FM			0.053
			(0.103)
Left-right appointing PM			-0.328**
			(0.159)
Observations	267	267	245
Adjusted R^2	0.27	0.27	0.31

Sources: See appendix Table A9.

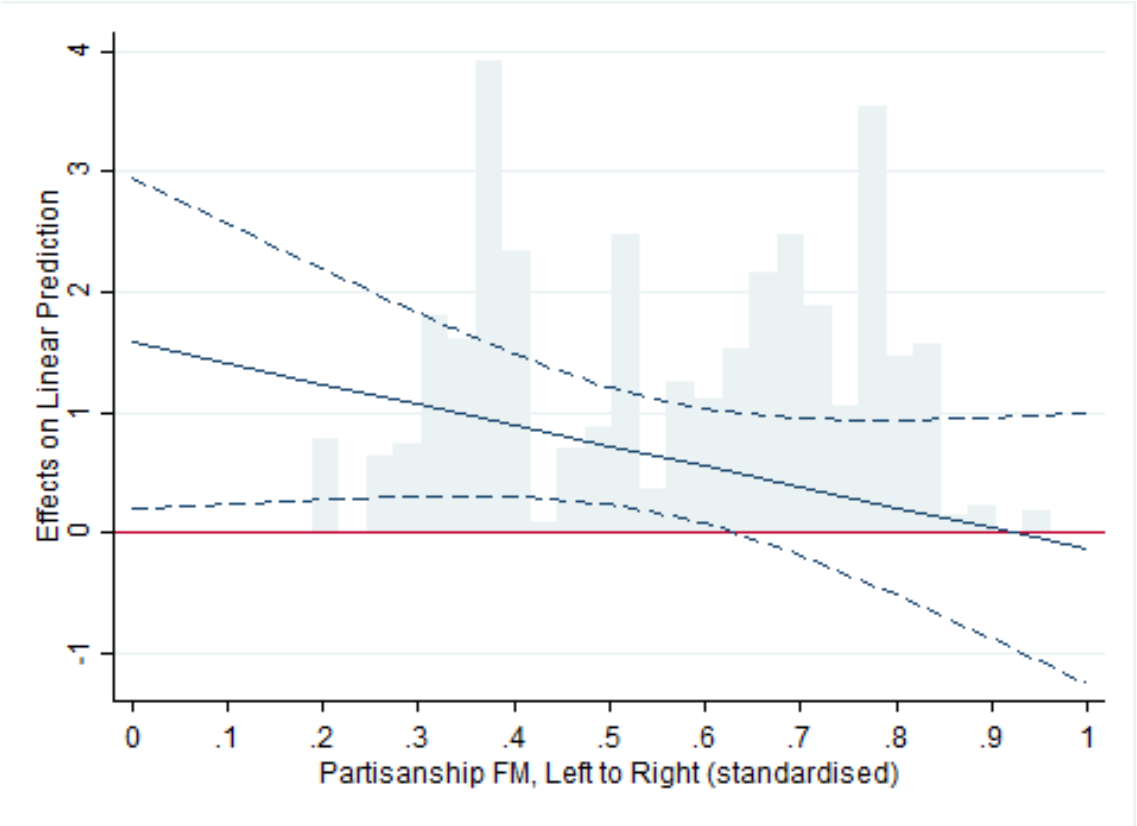
Note: Linear probability OLS regressions with country and decade fixed effects (not reported); all models include a constant. FM and PM stand for finance minister and prime minister, respectively. Dependent variable: $Directfinanceafter_{i,c,t}$. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

To test this, I repeat the analysis of the linear probability model above, adding an interaction term between the deregulation variable and the measure of a minister's partisanship. The results are reported in Table 4. While the interaction effect is indeed negative as expected, it does not reach significance. Nevertheless, plotting the marginal effect of *Deregulation* conditional on finance ministers' partisanship from the model in column 3 yields some interesting patterns (see Figure 2). While the effect of deregulation remains ambiguous for right-wing parties, it is clearly positive and significant for finance ministers from the left of the spectrum. This suggests that the signalling effect of deregulatory reforms for all finance ministers – reported in Table 3 – is mainly driven by left-leaning policymakers whose parties have a historical aversion to such policies.[11] Hence, this provides some tentative evidence for the idea that the credibility of policy signals is conditional on a policymaker's predisposed preferences. Yet, this can only indicate

[11] Similarly, when the sample is split between left-wing and right-wing finance ministers and the LPM including all controls is fitted to both of these sub-samples separately, the effect of deregulation on post-government

some general tendencies and more extensive analyses with larger samples would be necessary to thoroughly test these conjectures.

Figure 2: Marginal effects plot of *Deregulation* conditional on partisanship
With 90% CIs



Source: Author's calculations from model 3 of Table 4.
Note: Depicted are marginal effects of deregulatory reforms for finance ministers conditional on their partisanship together with the density histogram.

4.4 Robustness checks

I carry out various tests to examine the robustness of the main results. First of all, I rerun the models assigning the first governor and finance minister to every country-year observation. This yields a panel dataset of 153 central bank governors and 321 finance ministers for the sample period. Overall, there are 61 country-year observations and 145 observations in which the selected governor and finance minister differ, respectively. Concerning the results for the career socialisation mechanism, the effect sizes of $Financeprior_{i,c,t}$ for central bank governors shrink and no longer reach statistical significance at conventional levels for some models (p=.120 and p=.130 in models 1 and 2 of Table A3, respectively). For finance ministers, the respective coefficients turn negative in several models but are still far from being statistically significant.

employment in the financial sector is estimated as 1.107 (p=0.033; N=98) for leftist ministers and -0.007 (p=.985; N=147) for right-leaning individuals.

Similarly, the coefficients of $Deregulation_{i,c,t}$ in the LPM diminish slightly (Table A4). In light of these results, I further exclude years in which the governor and finance minister differ between the two samples (for a similar approach, see Moessinger (2014)). Reassuringly, the effects again approximate the main results presented above,[12] which suggests that selecting the first governor and finance minister in each year adds considerable noise to the data.

Second, I repeat the analysis of the career concerns mechanism using conditional logistic regressions. As indicated above, fixed effects logistic regressions exclude a significant amount of data if variation in the dependent variable is clustered among specific units and the fixed effects perfectly predict failure or success in the binary outcome. Nevertheless, despite the smaller sample, the results remain robust to this alternative specification: while no statistically significant effect can be shown for central bankers, there is clear evidence for the assumption that finance ministers increase their chances of gaining lucrative financial sector employment following their tenure by pursuing deregulatory policies (Table A5).

Lastly, I check whether the results presented above fail to capture more dynamic aspects of the revolving door mechanisms. Since the development and implementation of regulatory reforms generally require a considerable amount of time, the influence of governors' and ministers' background on financial policy might only appear with a significant delay. To test this, I use up to five leads of a country's financial sector reform rather than the contemporaneous changes in financial deregulation as the dependent variable in the CCM. The lead of the dependent variable rather than the lag of the characteristics of governors and finance ministers was taken in order to avoid post-treatment bias that occurs if individuals' earlier policies, which are correlated with their background, influence control variables, such as banking crises or reforms in neighbouring countries. As shown in Table A6 and Table A7, I do not find any delayed impact of officials' finance background on financial reforms. The estimated effects are not only far from being significant – which might also be due to the reduced sample sizes in lead regressions – but also much smaller in size. Although it is more difficult to effectively control for contemporaneous confounders such as macro-economic conditions and political environment at the time of reform in these lead regressions, this analysis still indicates that the immediate association of officials' characteristics and financial regulation is most important. Similarly, *quid pro quo* exchanges between officials and financial markets might not be based on governors' and ministers' overall deregulatory reforms but could be driven by their behaviour during specific years of their tenure. I therefore also examine whether markets pay greater attention to deregulatory reforms in an incumbent's first and last year.[13] Yet, I do not find that governors and finance ministers can boost their employment prospects in the financial sector if they deregulate more during their first or last year in office (Table A8).

Overall, these robustness checks lend further support to the specification used in this study and the inferences about the revolving door mechanisms in financial regulation that are derived from the models.

[12] The estimated coefficients for $Financeprior_{i,c,t}$ in models 1-6 of the CCM then are 0.011 (p=.070), 0.013 (p=.065), 0.015 (p=.054), 0.001 (p=.805), 0.000 (p=.978) and -0.003 (p=.610), respectively.

[13] Note that the observations for the regression for the first year is smaller for both governors and finance ministers because the beginning of each country panel does not coincide with the first year of the acting governor and finance minister in that country in most cases.

5 Conclusion and discussion

President Donald Trump's nomination of Randal Quarles, a Wall Street veteran and former Treasury official, for Federal Reserve Vice Chair of Regulation spurred strong criticism among Democrats and progressives in Washington, with Senator Elizabeth Warren leading the way. In a hearing following the nomination, she openly attacked Quarles: '[T]he number one thing we need from the Fed's vice chair for supervision is a demonstrated willingness to stand up to the interests of the big banks that threaten the financial institutions. But when I look at your 30 year career spinning through the revolving door in the private sector Mr. Quarles, I just don't see it.' (Elizabeth Warren, cited in Nicolaci da Costa, 2017, para.5)

This study empirically addresses this revolving door between government officials and financial business interests and explores whether career paths and career concerns of senior government insiders indeed affect financial market policy. While several findings are consistent with the theoretical concept of the revolving door, there are notable differences between administration officials. Deregulatory reforms are found to be significantly higher when central bank governors have a professional background in the financial services industry (H1a). In contrast, the results do not show that prior financial sector experience of finance ministers is associated with countries' reforms in financial regulation (H1b). Yet, while governors' financial policy is not demonstrated to have an impact on their post-government employability in the financial sector (H2a), the results suggest that finance ministers are much more likely to gain lucrative positions in the industry if they are known for strong deregulatory reforms during their tenure (H2b). The latter effect is mostly sustained by left-leaning ministers whose partisan preferences are perceived to stand in contrast to such policies. So while the revolving door from private banking towards government offices seems to have a stronger impact for central bank governors, the "outbound" version of the phenomenon appears to be more important for finance ministers.

Overall, these findings help reconcile and expand two growing branches in the political economy literature. First, this study shows that revolving door mechanisms are relevant for policymakers and public policy – above and beyond their impact on employees of regulatory agencies (Cohen, 1986; Grace and Phillips, 2008; Cornaggia et al., 2016). Additionally, the results contribute to existing studies showing that political leaders have a considerable impact on countries' economic policies and performance (Dreher et al., 2009; Besley et al., 2011; Adolph, 2013; Moessinger, 2014; Hayo and Neumeier, 2016; Mishra and Reshef, 2017). To be sure, political institutions and interests of other political actors, especially in developed countries, certainly matter for policy outcomes in the area of financial regulation. Yet, any muting impact of other actors in the political system on regulatory reforms should make it more difficult to find my results. On the contrary, the analysis suggests that simply "deducing officials' preferences from the attributes of their agencies, without considering how preferences develop informally and over time" (Schneider, 1993, p.333) bears the risk of neglecting the power of shadow principals, such as the financial sector, to shape political agents' ideas and incentives (Adolph, 2013).

Nevertheless, several limitations of the analysis deserve some closer attention. Due to data restrictions concerning policymakers' motivations and preferences, this study could only examine indirect implications of the revolving door concept, especially for the career concerns

mechanism. This not only impedes causal interpretation of the results but also gives rise to potential problems of simultaneity bias. The theoretical framework indeed suggests that policymakers shape regulatory policy with their next career step in mind. Hence, the prospects of being rewarded for lenient policy by the financial sector may induce policymakers to deregulate in the first place. Nevertheless, the concern might be somewhat dampened by the fact that reverse causality in the LPM would imply that policymakers can perfectly anticipate their employment by the sector in several years' time. While the results of this study should be interpreted with these caveats in mind, future research might aim at further teasing out the direct intent of policymakers. Additionally, the analysis was restricted to periods before the Great Recession. Based on the results of this study, it might be of interest to investigate whether distinct "types" of politicians reacted differently to the shock of the financial crisis and how their professional backgrounds shaped the controversial policy responses in its aftermath, such as bank bailouts and reinforcements of financial regulation. I leave these questions for future research.

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A Analysis appendix

Table A1: Summary statistics, estimation sample
Conditional change model

Variables	N	Mean	Std. Dev.	Min	Max
Reform (Index)	840	0.0215	0.0494	-0.167	0.333
Financeprior CB	838	0.333	0.472	0	1
Financeprior FM	836	0.152	0.359	0	1
Index (lag)	840	0.669	0.261	0	1
Econ degree CB	839	0.652	0.477	0	1
Ivy League CB	756	0.0648	0.246	0	1
Econ degree FM	837	0.389	0.488	0	1
Ivy League FM	778	0.0656	0.248	0	1
Left-right party FM	759	0.565	0.185	0.188	0.962
Left-right party PM	769	0.558	0.177	0.179	0.962
Banking crisis (lag)	837	0.0681	0.252	0	1
Reform in geogr. neighbours	804	0.0179	0.017	-0.074	0.136
IMF programme	840	0.143	0.35	0	1
EU membership	840	0.429	0.495	0	1

Sources: See appendix Table A9.

Note: Statistics include democratic periods only (indicated by a positive Polity IV score). CB, FM and PM stand for central banker, finance minister and prime minister, respectively.

Table A2: Summary statistics, estimation sample
Linear probability model

Variables	N	Mean	Std. Dev.	Min	Max
Central bank governors					
Directfinanceafter CB	133	0.286	0.453	0	1
Deregulation CB	133	0.124	0.151	-0.0556	0.611
Years in office CB	133	6.338	4.183	1	30
Finance before office CB	133	0.308	0.464	0	1
Econ degree CB	133	0.632	0.484	0	1
Ivy League CB	121	0.0661	0.25	0	1
Left-right party appointing PM	115	0.564	0.174	0.188	0.962
Finance ministers					
Directfinanceafter FM	304	0.125	0.331	0	1
Deregulation FM	304	0.0581	0.0916	-0.111	0.5
Years in office FM	304	2.816	2.328	1	21
Finance before office FM	304	0.164	0.371	0	1
Econ degree FM	303	0.406	0.492	0	1
Ivy League FM	285	0.0596	0.237	0	1
Left-right party appointing PM	279	0.562	0.179	0.179	0.962
Left-right party FM	267	0.568	0.183	0.188	0.962

Sources: See appendix Table A9.

Note: Statistics include democratic periods only (indicated by a positive Polity IV score). CB, FM and PM stand for central banker, finance minister and prime minister, respectively.

Table A3: Regression models for career socialisation, first policymaker
Conditional change model

	H1a: Governors			H1b: Finance ministers			H1a, H1b
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Finance before office CB	0.009	0.010	0.013*				0.011*
	(0.006)	(0.007)	(0.007)				(0.007)
Finance before office FM				0.002	-0.003	-0.005	-0.006
				(0.005)	(0.006)	(0.006)	(0.006)
Reform index (lag)	-0.132***	-0.142***	-0.139***	-0.129***	-0.111***	-0.109***	-0.138***
	(0.021)	(0.021)	(0.021)	(0.022)	(0.021)	(0.023)	(0.025)
Econ degree CB		0.006	0.008				0.007
		(0.005)	(0.005)				(0.005)
Ivy League CB		0.027**	0.031***				0.032***
		(0.011)	(0.01)				(0.011)
Econ degree FM					0.001	0.001	0.001
					(0.005)	(0.005)	(0.005)
Ivy League FM					-0.002	0.005	0.006
					(0.011)	(0.013)	(0.013)
Left-right party FM					0.003	0.021	0.025*
					(0.012)	(0.013)	(0.013)
Banking crisis (lag)			-0.014			-0.027**	-0.025*
			(0.009)			(0.013)	(0.013)
Left-right party PM			0.004			-0.023*	-0.016
			(0.011)			(0.012)	(0.012)
Reform in geogr. neighbours			-0.240			-0.300*	-0.247
			(0.169)			(0.168)	(0.171)
IMF programme			-0.009			-0.004	-0.015**
			(0.007)			(0.009)	(0.007)
EU membership			0.021**			0.022	0.029**
			(0.01)			(0.013)	(0.01)
Observations	834	752	658	836	696	662	597
Number of countries	32	32	30	32	30	30	29
R^2	0.19	0.21	0.22	0.19	0.18	0.20	0.24

Sources: See appendix Table A9.
Note: Panel OLS regression with country and year fixed effects (not reported); all models include a constant. CB, FM and PM stand for central banker, finance minister and prime minister, respectively. Dependent variable: $Reform_{c,t}$. Clustered standard errors by country in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A4: Regression models for career concerns, first policymaker
Linear probability model

	H2a: Governors			H2b: Finance ministers		
	(1)	(2)	(3)	(4)	(5)	(6)
Deregulation ($\sum$reform)	-0.408	-0.412	-0.167	0.638**	0.582**	0.622**
	(0.317)	(0.373)	(0.548)	(0.250)	(0.266)	(0.291)
Years in office		0.000	-0.000		0.005	0.001
		(0.010)	(0.012)		(0.010)	(0.010)
Finance before office			0.126			0.123
			(0.137)			(0.080)
Econ degree			0.128			-0.026
			(0.120)			(0.048)
Ivy League			0.142			0.017
			(0.256)			(0.107)
Left-right party appointing PM			-0.134			-0.280*
			(0.353)			(0.163)
Left-right party FM						0.341**
						(0.162)
Observations	136	136	106	316	316	249
R^2	0.40	0.40	0.48	0.25	0.25	0.28

Sources: See appendix Table A9.

Note: Linear probability OLS regressions with country and decade fixed effects (not reported); all models include a constant. FM and PM stand for finance minister and prime minister, respectively. Dependent variable: $Directfinanceafter_{i,c,t}$. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A5: Regression models for career concerns
Conditional logistic regressions

	H2a: Governors			H2b: Finance ministers		
	(1)	(2)	(3)	(4)	(5)	(6)
Deregulation ($\sum$reform)	-1.250	-2.191	-1.370	5.933***	4.785**	8.531**
	(2.138)	(2.533)	(4.138)	(2.146)	(2.388)	(4.196)
Years in office		0.065	0.060		0.103	0.080
		(0.091)	(0.109)		(0.097)	(0.161)
Finance before office			0.396			0.894
			(0.911)			(0.747)
Econ degree			1.336			-0.986
			(1.023)			(0.954)
Ivy League			-0.017			-0.627
			(2.159)			(1.374)
Left-right party appointing PM			-2.121			-13.128*
			(2.332)			(6.944)
Left-right party FM						15.671**
						(6.998)
Observations	80	80	56	181	181	101
Pseudo R^2	0.17	0.18	0.22	0.20	0.20	0.34

Sources: See appendix Table A9.

Note: Conditional fixed effects logistic regression with country and decade fixed effects (not reported); all models include a constant. FM and PM stand for finance minister and prime minister, respectively. Dependent variable: $Directfinanceafter_{i,c,t}$. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A6: Regression models for career socialisation, leaded reforms (CB)
Conditional change model

	t	t+1	t+2	t+3	t+4	t+5
	(1)	(2)	(3)	(4)	(5)	(6)
Finance before office CB	0.013*	0.008	0.006	0.005	0.003	0.003
	(0.007)	(0.007)	(0.006)	(0.006)	(0.007)	(0.006)
Reform index (lag)	-0.125***	-0.131***	-0.129***	-0.108***	-0.103***	-0.082***
	(0.018)	(0.023)	(0.023)	(0.020)	(0.016)	(0.019)
Econ degree CB	0.010	0.002	0.003	-0.002	-0.000	-0.007
	(0.006)	(0.006)	(0.006)	(0.005)	(0.005)	(0.005)
Ivy League CB	0.029**	0.018*	0.008	0.004	-0.009	-0.007
	(0.012)	(0.009)	(0.009)	(0.003)	(0.012)	(0.015)
Banking crisis (lag)	-0.016	0.006	0.010	0.001	0.005	-0.005
	(0.010)	(0.007)	(0.008)	(0.006)	(0.007)	(0.007)
Left-right party PM	0.002	-0.011	-0.011	0.004	0.009	0.017
	(0.011)	(0.013)	(0.011)	(0.009)	(0.011)	(0.011)
Reform in geogr. neighbours	-0.274	-0.074	0.279**	-0.194	0.188	0.045
	(0.162)	(0.171)	(0.117)	(0.203)	(0.158)	(0.118)
IMF programme	-0.006	-0.003	0.005	0.001	0.009	0.017**
	(0.007)	(0.011)	(0.010)	(0.012)	(0.012)	(0.008)
EU membership	0.020*	0.012	0.008	0.006	0.012	0.012
	(0.010)	(0.008)	(0.007)	(0.007)	(0.010)	(0.010)
Observations	659	659	630	601	572	543
Number of countries	30	30	30	30	30	29
R^2	0.21	0.21	0.22	0.20	0.19	0.17

Sources: See appendix Table A9.
Note: Panel OLS regression with country and year fixed effects (not reported); all models include a constant. CB and PM stand for central banker and prime minister, respectively. Dependent variable: $Reform_{c,t}$. Clustered standard errors by country in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A7: Regression models for career socialisation, leaded reforms (FM)
Conditional change model

	t	t+1	t+2	t+3	t+4	t+5
	(1)	(2)	(3)	(4)	(5)	(6)
Finance before office FM	0.000	0.004	-0.003	-0.006	-0.009	-0.006
	(0.006)	(0.005)	(0.004)	(0.006)	(0.006)	(0.007)
Reform index (lag)	-0.114***	-0.114***	-0.115***	-0.095***	-0.096***	-0.088***
	(0.022)	(0.023)	(0.025)	(0.018)	(0.015)	(0.015)
Econ degree FM	0.000	0.003	0.003	0.004	0.004	0.002
	(0.005)	(0.005)	(0.005)	(0.006)	(0.004)	(0.003)
Ivy League FM	0.013	-0.005	0.006	0.009	-0.007	-0.004
	(0.013)	(0.011)	(0.009)	(0.008)	(0.005)	(0.010)
Left-right party FM	0.016	0.016*	0.005	-0.009	0.014	0.013
	(0.010)	(0.009)	(0.013)	(0.018)	(0.011)	(0.014)
Banking crisis (lag)	-0.018	-0.001	0.003	-0.005	0.010	-0.006
	(0.011)	(0.007)	(0.008)	(0.006)	(0.008)	(0.008)
Left-right party PM	-0.022*	-0.032**	-0.025**	0.003	-0.003	0.017
	(0.011)	(0.015)	(0.011)	(0.015)	(0.007)	(0.012)
Reform in geogr. neighbours	-0.317*	-0.020	0.348***	-0.229	0.152	0.117
	(0.175)	(0.170)	(0.108)	(0.193)	(0.181)	(0.120)
IMF programme	-0.006	0.007	0.007	0.005	0.004	0.012*
	(0.007)	(0.007)	(0.007)	(0.012)	(0.011)	(0.007)
EU membership	0.023	0.013	0.003	0.003	0.007	0.016
	(0.014)	(0.010)	(0.008)	(0.010)	(0.010)	(0.010)
Observations	661	661	634	609	582	555
Number of countries	30	30	30	30	29	29
R^2	0.21	0.20	0.20	0.19	0.20	0.18

Sources: See appendix Table A9.
Note: Panel OLS regression with country and year fixed effects (not reported); all models include a constant. FM and PM stand for finance minister and prime minister, respectively. Dependent variable: $Reform_{c,t}$. Clustered standard errors by country in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A8: Regression models for career concerns, first/last year
Linear probability model

	Governors		Finance ministers	
	First year	Last year	First year	Last year
	(1)	(2)	(3)	(4)
Deregulation (yearly)	1.358	0.738	0.465	0.192
	(1.286)	(0.851)	(0.398)	(0.391)
Finance before office	0.090	0.077	0.131	0.143*
	(0.137)	(0.129)	(0.080)	(0.080)
Econ degree	0.132	0.150	-0.068	-0.043
	(0.144)	(0.123)	(0.050)	(0.052)
Ivy League	-0.088	-0.057	0.033	0.045
	(0.291)	(0.215)	(0.106)	(0.103)
Left-right party appointing PM	-0.360	-0.217	-0.335*	-0.398**
	(0.358)	(0.340)	(0.182)	(0.168)
Left-right party FM			0.416**	0.408**
			(0.173)	(0.161)
Observations	92	104	237	245
R^2	0.51	0.50	0.30	0.27

Sources: See appendix Table A9.
Note: Linear probability OLS regressions with country and decade fixed effects (not reported); all models include a constant. FM and PM stand for finance minister and prime minister, respectively. Dependent variable: $Directfinanceafter_{i,c,t}$. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

B Data appendix

Table A9: Description of data sources and coding of variables

Variable	Variable name in dataset	Description	Source
Main variables			
Reform	*reform*	Annual change in the index of financial deregulation ($\Delta Index_{c,t}$); $Index_{c,t}$ captures a country's level of deregulation (0=very low deregulation, 1=very high deregulation)	Giuliano et al. (2013); variable: *reform_index* in the dataset finaldata_regressions.dta in online appendix
Deregulation	*overallreformcb/ overallreformfm*	Sum of the variable *Reform* over a central bank governor's/finance minister's term in office (for democratic periods only)	Giuliano et al. (2013); variable: sum of Δ*reform_index* over a governor's/minister's tenure
Finance before office CB/Finance before office FM	*financepriorcb/ financepriorfm*	Dummy variable for whether the central bank governor's/finance minister's past professional experiences include working in a commercial bank or the financial sector more broadly	Hallerberg and Wehner (2017); variable: *privatefinancecb/ privatefinancefm*
Finance after office CB/ Finance after office FM	*directfinanceaftercb/ directfinanceafterfm*	Dummy variable for whether the central bank governor/finance minister gained employment in the private sector within 2 years after leaving office	Various sources (see below)
Controls			
Years in office	*yearscb/ yearsfm*	Number of a central bank governor's/finance minister's years in office at the time of leaving office	Own calculations
Econ degree	*econdegree2cb/ econdegree2fm*	Dummy variable indicating whether a central bank governor/finance minister has a masters and/or PhD in economics	Hallerberg and Wehner (2017); variable: *econdegreecb2/ econdegreefm2*
Ivy League	*ivyleaguecb/ ivyleaguefm*	Dummy variable indicating whether a central bank governor/finance minister has a masters and/or PhD degree from an Ivy League university	Hallerberg and Wehner (2017); variable: *graduateinstitutioncb/ graduateinstitutionfm*

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Variable	Variable name in dataset	Description	Source
Left-right party FM	*lrpartyfm_s*	Standardised score of ideological position of the political party of the finance minister; theoretical range from 0 = left to 1 = right	Hallerberg and Wehner (2017); variable: *lrpartyfm_s*, adapted from Benoit and Laver (2006)
Left-right party PM	*lrpartypmfirst_s*	Standardised score of ideological position of the political party of the prime minister or president; theoretical range from 0 = left to 1 = right; to aggregate information on a yearly basis, the first party in every year was taken	Hallerberg and Wehner (2017); variable: *lrpartypm_s*, adapted from Benoit and Laver (2006)
Left-right party appointing PM	*lrpartyappointcb_s/ lrpartyappointfm_s*	Standardised score of ideological position of the political party of the appointing prime minister or president for central bank governor/finance minister; theoretical range from 0 = left to 1 = right	Hallerberg and Wehner (2017); adaptations of variable *lrpartypm_s*
Banking crisis	*crisisyearly*	Dummy variable for whether a country experiences a banking crisis, yearly information	Hallerberg and Wehner (2017); variable: *lvbankingall* (aggregated on yearly basis), adapted from Laeven and Valencia (2012)
Reform in geogr. neighbours	*geoneighbor*	Average of reforms in neighbouring countries, weighted by geographical distance	Giuliano et al. (2013); variable: Δ*geo_neighbor*
IMF programme	*IMF_Program*	Dummy variable of whether country is subject to an IMF programme or not	Giuliano et al. (2013); variable: *IMF_Program*
EU membership	*EU*	Dummy variable of whether country is EU member or not	Hallerberg and Wehner (2017); variable: *EU*

Data collection and coding procedure for variable *Directfinanceafter*

The primary sources for the data on each policymaker's post-government employment were:

- BoardEx (https://www.boardex.com/),
- World Who's Who Online (www.worldwhoswho.com.gate2.library.lse.ac.uk/) and
- Munzinger (https://www.munzinger.de/search/start.jsp).

These biographical databases were supplemented by various online sources including Bloomberg (https://www.bloomberg.com/europe), Britannica (https://www.britannica.com/) as well as central bank and finance ministry websites, personal websites of policymakers, websites of official institutions such as national parliaments and the European Parliament, national encyclopedias and newspaper reports.