

# Bankers' Pay in State-Owned Banks - - How Important Are Governance and Political-Economic Factors?

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The paper focuses on board and executive compensation practices of state-owned banks in Switzerland. We take into account commonly considered firm-specific characteristics (e.g. bank size, performance, risk and growth) as well as corporate governance-specific factors which are all expected to affect board and executive pay. Given our focus on state-owned banks, we additionally integrate a set of political-economic factors related to the compensation practices. Finally, we compare compensation practices in state-owned banks with regional and savings banks in Switzerland in order to gain a better understanding of the specific mechanisms in state-owned banks. Our sample includes all 24 state-owned banks and 17 regional and savings banks in Switzerland over the period from 2004 to 2013, which leads to a total sample size of 363 observations. Our results from GMM estimations suggest that board and executive compensation are governed by different mechanisms. In addition, political-economic factors seem to be important determinants of board and executive pay.

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## 1 Introduction

In recent years, managerial pay has received a lot of attention in both the academic literature as well as in the popular business press.<sup>1</sup> Previous research has focused mainly on the compensation practices used at industrial firms. Few, but an increasing number of studies concentrated on the banking industry. In addition, most of the work on executive compensation focused on US firms, for which disclosure requirements made available information on executive compensation. In Switzerland, the recent implementation of corporate governance regulations, including the disclosure requirements of stock exchanges, has led to a greater transparency of compensation practices in public companies traded on the Swiss stock market. As a result, data on compensation practices at Swiss banks have become more available.

Our paper is a further contribution to literature on compensation in the banking industry. In particular, we study the compensation practices of board members and executives in state-owned banks in Switzerland, the so-called cantonal banks. The focus on state-owned banks in Switzerland is motivated as follows. Looking at banks in Switzerland is particularly interesting for several reasons. In the international context, Switzerland has one of the most important banking sectors in the world. With 9.1% of global assets under management, Switzerland is among the world's leading trio of wealth management center, alongside with the United States and the United Kingdom. It is also the world's leader in off-shore private banking, with a market share of 27%. The country's largest banks, UBS and Credit Suisse, rank among the world's largest wealth management firms.<sup>2</sup> Accordingly, many international clients bring their money to Switzerland in search of security and stability, which are rooted in Switzerland's long tradition of political, economic, fiscal and social stability. Furthermore, the Swiss franc has long been one of the world's most stable currencies and is characterized by traditionally low rates of inflation. Also, thanks to a high savings ratio and a massive influx of foreign money, Switzerland has traditionally had low interest rates and, therefore, lower costs of borrowing. In addition, the Swiss law obliges banks to extend to their clients - both Swiss and foreign - a very high degree of confidentiality. The Swiss banking secrecy, which is based on the banking secrecy act of 1934, is considered a civil right in Switzerland and an essential part of the individual's privacy. Accordingly, clients of Swiss banks, both Swiss and foreigners, can handle their financial affairs in confidence. Note, however, that the federal government can bypass the banking secrecy in case of funds are suspected to originate from criminal activities.

In addition to the importance of Switzerland as banking country, the focus on state-owned banks in Switzerland is motivated as follows: Switzerland's federal political structure offers a large degree

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<sup>1</sup> See Murphy (1999) or Core, Guay, and Larcker (2003) for reviews of the literature.

<sup>2</sup> See also Wealth Management in Switzerland, Swiss Bankers Association, 2014.

of autonomy to its 26 states, which differ in many key aspects from each other. With the states being the major owners of cantonal banks, this heterogeneity across states is also reflected in the governance of state-owned banks. Accordingly, Switzerland offers a fruitful environment to study the behavior of state-owned banks.

Our sample includes 24 cantonal banks as well as 17 regional and savings banks in Switzerland, and presents data covering the years from 2004 to 2013. We use a multivariate regression framework and attempt to explain board and executive compensation by commonly used firm-specific variables such as performance, size, and risk exposure. As additional explanatory variables, we include a set of corporate governance-specific variables related to the election and compensation practices of board members. Finally, we consider political-economic factors related to the cantons, such as the canton's ownership share of the bank, the compensation level of the state governors, the financial power and the political orientation of the cantons. These factors are expected to affect the compensation practices of the banks in our sample.

As the first step in a two-step analysis, we explain the level of board and executive compensation by the firm-specific, corporate governance-specific and canton-specific characteristics mentioned above. We separately look at board and executive compensation, given that these remuneration schemes might be driven by different mechanisms. This separation of board member and executives is possible because board members of state-owned banks in Switzerland are not allowed to have an executive function. In a second step, we compare board compensation practices of state-owned banks with those in regional and savings banks.

The main results of our analysis based on our GMM estimations are as follows: For state-owned banks, board and executive compensation depends not only upon the commonly used firm-specific pay determinants, but also upon corporate governance mechanism and state-specific factors related to the political economic processes. In addition, our analysis reveals that, in addition to some shared factors, the board and executive compensation are partly driven by different factors. As to the specific pay determinants of board members, we find that the bank's performance of the past year has a negative impact on board pay, which is quite surprising. In contrast, bank size has a positive impact on board pay, while changing the bank's exposure to risk does not seem to matter. Interestingly, board members in financially stronger cantons earn less. Finally, the higher the cantons' ownership share of the bank, the less the board members earn, which may be some evidence for the impact of the forces of direct democracy.

Executive compensation, in contrast, does not seem to be positively related to the banks' (past) performance. Bank has a positive and significant impact on executive pay. The number of executives has a negative impact on their pay, so does the presence of a governor on the board. As

to the political-economic factors, executives in wealthier and more politically conservative cantons earn more.

The new aspects of our work are as follows. It is the first paper that investigates board and executive compensation practices in Swiss cantonal banks. While there are a few studies that investigate compensation issues of listed Swiss companies in different industries,<sup>3</sup> our study uniquely focuses on the banking industry. Second, our study considers not only the firm-specific characteristics and corporate governance factors that are commonly related to compensation issues, but it also includes political-economic factors that are likely to affect the remuneration structure in the banks under consideration. Third, while most of the existing papers focus on executive compensation only, our study investigates both board and executive compensation practices. Finally, our paper reveals some recent and interesting information about compensation practices in the Swiss banking industry. Given that banking is a business that values discretion and that the Swiss usually do not talk about their salaries, our paper provides valuable insight into a largely unexplored subject.

The paper is structured as follows. Section 2 provides some basic information about the Swiss banking and state-owned banks in particular. Section 3 reviews the relevant literature, Section 4 describes the pay determinants included in our analysis. The data description is in section 5. The main results of our empirical analysis for state-owned banks can be found in section 6. Section 7 contains the comparative analysis between state-owned and regional and savings banks, and section 8 concludes.

## **2 Understanding the Swiss banking market and state-owned banks in particular**

### **2.1 The Swiss banking market**

The Swiss banking system is based on the concept of universal banking, where all banks can offer all banking services. Nevertheless, many different specialized bank groups have developed. By the end 2014, 275 authorized banks and securities dealers in Switzerland, ranging from the "two big banks" down to small banks serving the needs of a single community or a few special clients were registered in Switzerland.<sup>4</sup> Swiss banks vary in their use of the option to engage in all financial activities. On the one side, there exist truly universal banks. On the other hand, there are institutions specializing either in traditional banking or in asset management. Based on criteria related to the banks' strategic position, the geographic market, and their legal form; the Swiss

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<sup>3</sup> Beiner et al. (2005), for example, investigate the relationship between product market competition, incentive schemes, and firm valuation for 156 Swiss companies listed at the Swiss stock exchange SWX. They find that more intensive product market competition is associated with stronger incentive schemes for managers and a lower firm value.

<sup>4</sup> Bank statistics of the Swiss National Bank (SNB), [www.snb.ch](http://www.snb.ch).

National Bank (SNB) classifies the banking institutes into the categories: *Cantonal Banks*, *Big Banks*, *Regional Banks*, *Raiffeisen Banks*, *Private Banks*, and *Other Banks*. In order to better understand our sample and subsequent empirical work, it is useful to provide a brief description of each type.

The two "*big*" banks - UBS AG and the Credit Suisse Group are the largest and second largest Swiss banks and account together for over 50% of the balance sheet total of all banks in Switzerland. Both banks have extensive branch networks throughout the country and most international centers. UBS is the world's leader in wealth management and Switzerland's leading bank for individual and corporate clients. It is also an important global player in investment banking and the securities business. Credit Suisse is a global acting bank headquartered in Zurich and also an important player in the Swiss market for individual and corporate clients. We include both big banks in our sample as they pursue all lines of financial activities and as they are the key actors in most segments of the domestic commercial banking activities.

*Cantonal banks* are either 100 percent or partially state-owned banks. The majority of their capital is always owned by the cantons, which also guarantee their liabilities. Formerly one to two per canton, there are today 24 Cantonal banks (in Switzerland's 26 cantons and half-cantons). Cantonal banks vary both in size and in their business activities. They are engaged in all banking businesses with an emphasis on lending/deposit business and operate primarily in the market of their home canton. Their objective, according to cantonal law, is to promote the canton's economy. However, Cantonal banks must comply with commercial principles in their business activities. All the Cantonal banks together account for around 30 percent of banking business in Switzerland and have a combined balance sheet total of more than 523 billion Swiss francs.

*Regional and savings banks* are mainly small banks focusing on traditional banking and limited to often very small geographical areas. As a group of banks with the largest branch network in Switzerland, *Raiffeisen banks* with totally 292 banks and 1,004 branches together form Raiffeisen Switzerland. Raiffeisen Switzerland coordinates the group's activities, creates the conditions for the business activities of the local Raiffeisen banks and advises and supports them in many issues. The bank group is organized as a cooperative and has positioned and established itself as the third largest bank group in Switzerland. As one of Switzerland's leading retail banks, Raiffeisen is mainly focusing on mortgage lending. Raiffeisen meanwhile counts 1.9 million Swiss citizens as members of the cooperative and hence co-owners of their Raiffeisen bank. However, the Raiffeisen banks are still legally independent small banks located and active mainly in rural areas.

*Foreign banks* are institutions operating under Swiss banking law, but whose capital is primarily foreign controlled. Foreign-control means that foreigners with qualified interests hold over half of

the company's votes. The origin of these foreign owned banks is predominantly Europe (over 50%) and Japan (around 20%). They differ widely in their size and activities. Some qualify as universal banks, while others focus on asset management. *Private bankers* are among the oldest banks in Switzerland. They are unincorporated firms, active primarily in the field of asset management for private clients. Private bankers are subject to unlimited subsidiary liability with their personal assets. The group "*other banks*" includes banks with various business objectives, such as institutes specializing in the stock exchange, securities and asset management businesses.

## **2.2 The governance structure of state-owned banks in Switzerland**

Cantonal banks as a state-owned enterprises have a specific governance structure that can be divided into four hierarchical levels. The lowest level is the executive committee, who is responsible for the operational management and the external representation of the bank. The second lowest level is the board. The board decides about the bank's strategy and is responsible for the internal and external audit of the bank. The third level is the council of cantonal governors as representative of the bank owners. Major decisions have to be agreed upon by the cantonal governors. Finally, the highest level is the state parliament, who is in charge of supervising the council of state governors.

The board as the highest organ of the bank consists of the president and a number of board members. The total number of board members varies among cantons and ranges from 5 to 15 members, depending on the size of the bank. Depending on the canton, the president and the board members are elected either by the state parliament (in ten cantons), the council of governors (in four cantons), by the assembly of shareholders (in two cantons), or by a combination of the three organs (in eight cantons). For eleven cantonal banks, there exists a time limit of usually eight years for the board members. As to the reelection frequency, the members are usually elected for four years. Finally, the number of board meetings also differs between the cantonal banks. In the majority of cases, the board meets at least once a month.<sup>5</sup> The members of the executive committee are elected by the board. The executive committee counts between 3 and 16 members.

## **3 Review of the literature**

This section gives a review of the literature of compensation in the financial industry and in state-owned firms. While a very large number of papers on executive and board compensation have been published, the literature dealing with the compensation issues in the financial industry and in state-owned firms is much more limited.

The discussion of appropriate incentive levels has accelerated in recent years after the financial crisis because wrongly set compensation incentive schemes were assumed to have promoted

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<sup>5</sup> See also Piazza and Otte (2009).

bankers' excessive risk taking, thereby fostering the emergence of the financial crisis (Tung and Wang 2011). Authors like Bebchuk and Spamann (2009) state that they have identified several key factors, such as the possibility given to managers to sell most of their equity-based incentive remuneration, before the consequences of their management decisions are actually reflected in the value of the firm. These have stimulated managers to take additional risk and focus mainly on short-term goals. They say that these stimulators are not sufficiently accounted for by the current requirements for compensation structures and corporate governance mechanisms. They rather suggest that management compensation should be monitored by the regulators. Additionally, certain types of incentive remunerations are supposed to be banned. Bhagat and Bolton (2013) confirm Bebchuk and Spamann's findings. On the other hand, Fahlenbrach and Stulz (2009) analyse the equity holdings of CEOs before and during the crisis, and their findings do not reveal any indications that CEOs sold their stakes in anticipation of the crisis. They also do not find any proof that banks were having a higher performance during the crisis in cases where manager's and shareholder's interests were found to have a better alignment.

Houston and James (1995) also investigate the relationship between compensation structures and the incentive to take risk before the start of the financial crisis. They only find little evidence that compensation policies in banks foster excessive risk taking. Moreover, they find that bank managers' compensations have a more sensitive pay-for-performance link than compensations paid in other industries. Hence, they say that the use of different compensation structures could be explained by the character of a firm's assets and investment opportunities. John Qian (2003), in contrast, found a weaker pay-for-performance sensitivity in the financial industry than in the manufacturing industry by analysing a data sample between 1992 and 2000.

Finally, Becher, Campbell and Frye (2003) investigated the impact of deregulation on bank directors' incentive compensations on the basis of their sample of US banks from 1992 to 1999. Their results show that an increase in equity-based pay resulted in better performance and higher growth without an equivalent increase in the bank's risk. Also, they find that the banks start to align interests between management and shareholders when their industry was deregulated.

The academic literature on executive compensation in state-owned firms is dominated by evidence from China since Chinese companies are still largely owned by local or municipal government agencies. The discussion on the characteristics and implications of management compensation has been an ongoing topic since the Chinese government is assessing the delegation of control rights to firm managers (Gu, Wang and Xiao 2010). Kato and Long (2004) analyze listed firms in China during five years from 1998 to 2002. Their findings reveal significant relationships between managerial compensation in cash and the shareholder value, which are comparable to the effects

found in other countries such as the US, Japan or Korea. Therefore, they cannot spot any general evidence for inefficient handling of pay-for-performance links in China's state-controlled enterprises. Yet, they find weaker links for top managers, which are interpreted as a potential inefficiency in approaching the agency problem in the companies concerned.

Studies by Mengistae and Xu (2004) who considered commercialized state-owned enterprises in China in the 1980s, find similar results. They investigate the impact of the agency problem on management compensation and find a negative relationship between CEO pay and the variance of the performance measure. These results seem to be similar to the findings in privately owned firms in Europe or the US.

Firth, Fung and Rui (2007) analyse listed non-financial companies in China during 1998 and 2000, and find a positive relationship between CEO pay and the used performance measure (ROA). They further find that government ownership has a significantly negative impact on CEO compensation. If foreign shareholders are invested, the CEO compensation is significantly higher and hence there seems to be evidence that foreign investors push for higher pay-for-performance incentives.

Gu, Wang and Xiao (2010) investigate the topic of government control and compensation incentive schemes by the means of their sample of Chinese-listed companies in state ownership. Their results reveal that government control is substituted for compensation incentive schemes. This means that if the state weakens its monitoring of the firm, the reduction in control is replaced by compensation schemes and higher pay-for-performance incentives for the management. In essence, when state-owned companies under a lower government control are compared to privately owned companies the pay-for-performance sensitivity is not significantly different. If the company is still under strong government control, the sensitivity between pay and performance gets significantly lower. Also, it seems that the reduction of government control, in combination with the instalment of an incentive compensation scheme, has a positive effect on future performance.

Finally, Luo and Jackson (2012) analyze the relationship between executive compensation, ownership structure, and firm performance for publicly listed financial companies in China from 2001 to 2009. Their results reveal no significant relationship between performance, measured by stock return and return on asset, and management compensation. In addition, they find significant negative effects for concentrated ownership. Also, state ownership, in particular, is negatively related to executive compensation, while the existence of a compensation committee has a positive impact. Overall, the results point to salaries at financial institutions, which are beyond normal

payout levels; they also find that the government ownership can be viewed as a substitute for poor corporate governance mechanisms.

Even though previous literature and research has been carried out on the relevance of state ownership and corporate governance mechanism regarding the level and structure of managerial pay, the decisive question is whether high management compensation, from the agency theory's point of view, could be considered a form of rent extraction by the management or rather the result of the overall complexity of this topic, and therefore, could be caused by an omitted variable in the model (Barontini and Bozzi 2011).

Therefore, our study will not only include firm-specific variables, and elements from politics and cantons, but also several management and government characteristics in order to get a full picture of what determines management compensation in the banks under review.

## **4 Pay Determinants in the Banking Industry**

This section describes the main determinants of board and executive pay included in our analysis. The first factors considered in our analysis are firm-specific factors that are commonly used in the literature. The second set of factors refers to the particular governance structure of the cantonal banks. To account for the particular ownership structure of the banking institutions considered in our analysis, we finally consider canton-specific aspects related to the political-economic processes. Table 1 summarizes the descriptions.

### **4.1 Firm-Specific Characteristics**

The first eight factors considered in our analysis are the firm-specific factors commonly included in compensation studies, namely size, efficiency, risk, performance, growth, stock market listing and market share.

#### **Firm size**

Several empirical studies provide evidence for a positive correlation of firm size with compensation.<sup>6</sup> According to Rosen (1982, 1990), the actions of a CEO multiply over the scale of his operations, which allows him to accrue rents in a competitive equilibrium. In a competitive labor market, the more talented senior executives are allocated to the larger firms since the marginal productivity of their actions is magnified across the lower levels of the hierarchy. Similarly, larger companies require more talented personnel in order to cope with the companies' inherent heightened complexities. Highly skilled managers, however, generally ask for higher rewards (Rosen 1982; Weisskopf 2013). Gabaix and Landier (2006), for instance, analyze the

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<sup>6</sup> See Ciscell and Carroll (1980) for a good survey.

constant augmentation in management compensation in the USA and find the explanation in the substantial increase in the firms' sizes. Similar results indicating a positive relationship between firm size and management compensation are found in the samples of van Essen, Otten und Carberry (2015) or Angbazo and Narayanan (1997). In our analysis, we use the natural logarithm of the total assets as main proxy for firm size. The natural logarithm of total loans is used as an alternative size measure.

### **Firm risk**

According to several studies, firm risk is an important determinant of management compensation (e.g. Evans et al., 1997; Knopf and Teall, 1996; Saunders et. al. 1990). The greater the exposure of a firm to risk, the greater the possibility of failure for the firm, which is a disaster for both the firm and its executives. Thus, firms must compensate the executives accordingly, i.e., managers are asking for a higher pay with increased risk in order to be compensated for their job uncertainty, among other factors (Fernandes, Ferreira, Matos und Murphy 2013). However, there have been other results where the relationship between risk and pay has found to be significantly negative (Van Essen, Otten und Carberry 2015). Firm risk is usually measured by the standard deviation of monthly stock returns. Unfortunately, this metric does not work for all the banks in our study because, as mentioned above, not all the banks in our sample are listed at the stock exchange. Fortunately, for banks, there is another way to measure exposure to risk. Given the capital requirements imposed on the banking industry, bank risk is reflected in the capital structure. The higher the risk a bank is facing, the more equity it needs to secure its risky balance sheet positions. Therefore, we measure bank risk by the leverage defined as the ratio of total assets minus equity over equity.

### **Firm performance**

The profitability of the company is supposed to be strongly related to management compensation since managers should receive higher compensations if they manage to increase firm performance. This relationship has been subject to several studies. The principal-agent theory suggests that managerial pay should be related to managerial actions in order to align the insurance motive of the manager with the wealth-maximizing incentive of the shareholders (Jensen, 1986). Therefore, market movements outside the control of managers or board members should be excluded from the performance measures. Although relative performance evaluation might have a significant impact on compensation, we assume that market movements affect the banks in the sample in a similar way. Therefore, our performance measures are based on individual bank returns. Usually, firm performance is measured by the (change in) shareholder value (e.g. Cuñat and Guadalupe, 2005). Given that not all banks in our sample are listed at the stock exchange, we use the return on

assets as main performance indicator. As an alternative performance measure, we include the return on equity before taxes, which is defined as annual profit plus taxes over equity. Our approach is consistent with, e.g., Mengistae and Xu (2004), who use the return on assets or with Capasso et al. (2007), who use the growth rate in EBIT and the return on equity as performance measures.

We use the cost-income-ratio is used as a measure of firm efficiency as alternative performance measure. More efficient companies have lower costs and are seen to be more successful, which indicates that they have the necessary financial abilities to pay higher management compensations. Therefore, a positive relationship between firm efficiency and managerial compensation, or at least the variable component, is expected.

It is calculated by dividing operating expenses by operating income.

In addition to the firm-specific factors, we take into account characteristics of the bank's corporate governance system as well as several canton-specific characteristics related to political-economic factors. The cantons are the major, and, in most cases, the only shareholders of the cantonal banks. Given this ownership structure, the cantons and the responsible government agencies are the dominant principal. By including these canton-specific factors, we take into account the influence of the main owners and their specific characteristics on the decisions taken within the banking institutes.

### **Firm growth**

Firms that find themselves in a growth period are more likely to reinvest the generated returns and therefore get less liquid assets as payout to management (Weisskopf 2013). However, according to the agency theory, the monitoring gap resulting in fewer financial assets to pay management compensation should be compensated by increasing amounts of incentive-based remuneration (Ryan and Wiggins 2001). As is common in the financial industry, we measure firm growth by the yearly increase in deposits.

### **Exchange listing**

An exchange listing is assumed to be positively related to management compensation since banks listed at the stock exchange are assumed to have a more dispersed ownership. Therefore, managers and their payouts are less monitored (Section 2.2.3). On the other hand, companies listed at the exchange are required to fulfil numerous standards and are, for instance, obliged to publish certain information on management compensation, which may lead to lower managerial pay instead.

Accordingly, the overall effect remains an empirical question. If a bank is listed at the Swiss exchange, the dummy variable takes the value of 1, and 0 otherwise.

### **Market share in the local mortgage market**

Finally, we include in our analysis a measure for the intensity of product market competition. According to a small but growing literature in the area of industrial organization, there exist complex interactions between product market competition and executive compensation. From a theoretical point of view, the relationships between competition and compensation are characterized by several opposite effects, and it is largely unresolved whether a higher product market competition has a positive or negative impact on the level of compensation and the performance-pay sensitivity (e.g. Schmidt 1997, Raith 2002; Vives 2004). Scharfstein (1988) states that product competition and its effect on management compensation packages very much depend on managers' preferences. From an empirical point of view, Beiner et al. (2005) provide evidence for a positive impact of the intensity of product market competition on the strength of incentives for executives of listed Swiss firms. Similarly, Cuñat and Guadalupe (2005) investigate the relationship between product market competition and the compensation packages of CEOs, executives, and workers in UK firms. They show that a higher level of product market competition increases the performance pay sensitivity of compensation schemes. In another paper, Cuñat and Guadalupe (2009) analyze a sample of US executives in the financial industry in 1990. Similarly, they provide evidence for a positive relationship between the level of competition and pay-for-performance. They argue that an increase in competition leads to augmented pressure for a company to boost performance. Similarly, Karuna (2007) shows that managerial incentives are set higher if industry competition increases.

## **4.2 Governance-Specific Characteristics**

A second set of explanatory variables refers to the corporate governance mechanisms of state-owned banks. In particular, we include the size of the board and the executive committee, the existence of a compensation committee, the decision power of the state over board compensation, whether there is a governor on the board, whether the board members are elected by the state executives, the existence of a term restriction for board members and finally the existence of a participation program as additional explanatory variables to explain compensation. Note that not all factors are included in the model to explain executive compensation, given that certain factors are expected to have an effect on board compensation only. The respective inclusion of variables is described below.

### **Number of committee members**

The number of directors or executives can be seen as indicator for the independence of the board and the executive committee, respectively, and it is also considered as a determinant of compensation (e.g. Conyon and He (2011)). On the one hand, with a larger number of individuals on the committee, it is more likely that it will be directed by individuals, which might weaken its monitoring duties. In contrast, smaller committees are characterized by closer interaction and coordination activities, and thus might be able to act more independently (Jensen 1993; Angbazo and Narayanan 1997). Looking at the impact of the committee size on compensation issues, the empirical results are mixed. Firth, Fung and Rui (2007) and Andreas, Rapp and Wolff (2010), for instance, find a negative relationship between board size and compensation of the CEO, however, Core, Holthausen and Larcker (1999) as well as Conyon and He (2011) find a positive effect. Angbazo and Narayanan (1997) do not find any significant effect. Therefore, the expected relationship between compensation and the number of members of a committee is not clear from the beginning. We include the number of board members in the model to explain board compensation and the number of executives in the model to explain executive compensation, respectively, in our estimations.

### **Existence of a compensation committee**

A compensation committee is established in order to additionally monitor managerial compensation decisions of the board and to act as supplemental supervisor which is supposed to challenge inadequate remuneration procedures (Ferrarini and Moloney 2005). The role of the compensation committee is to set appropriate and supportable pay programs that are in the bank's best interests and aligned with its business mission and strategy. In particular, its responsibilities may include, among others, the establishment of CEO and executive officer compensation, the development of a compensation philosophy and the oversight of the equity compensation grant policy. Accordingly, compensation schemes are expected to be set more professionally in banks with a compensation committee. The existence of compensation committee is measured by a dummy variable which takes the value of one if the bank has such a committee, and zero else.

### **Decision power of state over board compensation**

Management compensation decisions are generally taken by either the compensation committee or by the board itself. In just one case the compensation is set by the legislative of the canton. However, at five other cantonal banks compensation decisions need to be approved and confirmed by one of the cantonal authorities. Members of the parliament might have a different opinion about the level of board compensation than the board members themselves. Therefore, we expect the

different compensation settings to have an effect on the level of board compensation. Whether the involvement of the cantonal parliament has a positive or a negative effect on the level of board compensation, however, has to be sorted out empirically. The decision power of the state on board compensation is measured by a dummy variable which takes the value of one if the cantonal parliament or another cantonal authority has decision power over board compensation, and zero else.

### **Governor as board member**

Another way for the state to be involved in the management compensation process of cantonal banks is to appoint members of the government as board members. By these means the canton has the possibility to influence management decisions on compensation. The impact of the decision power of the governor on the board over board and executive compensation is à priori unclear and has to be empirically investigated. This additional governance mechanism is again measured by a dummy variable, which takes the value of one if the governor is a board member, and zero else.

### **Board elected by state executive**

In a minority of the cantonal banks, the board is elected by the state executive, namely by the state governors. In all other cantonal banks, the board members are elected either by the legislative or a combination of executive, legislative and the shareholders. With the executive as election authority, the selection process of the board members is expected to be different, given that less people are involved, and this fact might have an effect on the compensation mechanism of board and executives as well. We take into account this governance characteristic by including a dummy variable which takes the value of one in case the board is elected solely by the state executive, and zero in all other cases.

### **Restriction on the term of office for board members**

The time period a person can serve on the board may be limited, usually limited to eight or twelve years. Such a restriction leads to a higher turnover rate of board members and, therefore, to a regular board refreshment which might have an effect on compensation issues as well. This governance mechanism is also measured by a dummy variable, which takes value of one if a bank has such a restriction on their directors' office term, and zero else.

### **Participation program**

The existence of a participation program means that employees obtain shares or options as part of their compensation. Given that shares and options are generally paid on a variable basis, and,

therefore, represent the more risky part of compensation, the existence of a participation program is expected to have a positive effect on total compensation (Core, Holthausen and Larcker 1999).

The dummy variable for the use of a participation program takes the value of 1 if a bank maintains such a program in the form of employee shares or options, and 0 otherwise.

### **4.3 Canton-Specific Characteristics**

Finally, we include canton-specific factors as third set of explanatory variables which are expected to have an effect on board and executive compensation in state-owned banks. In particular, we assume that the compensation of governors, the political orientation of the canton, whether there is an election year, the state's share of the bank and financial power of the canton as pay determinant.

#### **High compensation level of cantonal governors**

As an additional factor, we include the relative compensation level of the cantonal governors in our analysis. We expect a positive relationship between the compensation level of cantonal governors and the bank management because of the following reasons. First, given the ownership structure of the cantonal banks, the governors of the respective canton serve as principals of the board members and executives of the cantonal bank. Intuitively, one would expect similar relative compensation levels of principals and agents across cantons. Also, compensation figures of board and executives of cantonal banks, which are publicly available, are closely watched and sometimes questioned by the legislative, the media as well as the interested public. In the canton of Lucerne, for instance, a member of the state parliament requested a special investigation to see whether it is justified that the president of the board of the cantonal bank earns four times as much as the cantonal governors. Accordingly, we expect a positive impact of the governors' compensation on the remuneration of board and executives of cantonal banks. Unfortunately, data on compensation of governors is available at two points in time only during the time period considered. Therefore, we construct a dummy variable for the relative level of governor compensation, i.e., the dummy variable is constructed in such a way that it takes the value of 1 if the canton pays its governors a salary above the median of all cantons, and 0 otherwise. Also, we use the available data on governor remuneration from 2001 to create the dummy for the first five years of the sample, and the information from xxx for the second half of the sample.<sup>7</sup> The data has been taken from [www.badac.ch](http://www.badac.ch) and from an article of the *Neue Zürcher Zeitung* (NZZ).

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<sup>7</sup> The data has been taken from [www.badac.ch](http://www.badac.ch) and from an article of the *Neue Zürcher Zeitung* (NZZ).

### **Political orientation of canton**

Depending on the canton, the state government has an impact on the board composition and/or compensation issue of the state-owned bank (see also under corporate governance-specific factors included in our analyses). Accordingly, the political ideologies of the parties in control of the cantonal government are expected to have an impact on key decisions taken by the board, which include the determination of board and executive compensation. We capture the political climate by the fraction of seats held in the cantonal parliament by left wing parties.<sup>8</sup> This is a conventional indicator of political orientation (e.g. Feld and Matsusaka, 2003) and should give a good indication of the strength of the left wing interests in the respective cantons.

### **Election year**

Considering the discussed impacts of the state on state-owned bank, election cycles might have an impact as well on decisions related to compensation issues in state-owned banks. Politicians are assumingly more aware of public opinion in order to get re-elected than in non-election years and this might influence their decisions in compensation discussions. We expect a stronger impact on compensation issues in election years (Iannotta, Nocera and Sironi 2013), whether it is positive or negative remains to be investigated empirically. We use a dummy that takes the value of one if the year is an election year, and 0 else.<sup>9</sup> The information on election cycles has been taken from the Federal Statistical Office of Switzerland.

### **State ownership of bank**

According to the agency theory, the stake of ownership significantly impacts management compensation. To take into account the ownership structure of state-owned banks, we include the share of the capital owned by the canton as an additional pay characteristic. Note that the cantonal banks usually represent a significant position in the balance sheet of the respective cantons. Given that cantons are public corporations, where salaries are generally lower than in the private sector<sup>10</sup>, we expect cantonal banks where the canton holds a higher ownership share to pay lower levels of board and executive compensation. Also, a higher state ownership may go together with a weaker impact of the market forces and more governance by the canton. We measure the canton's ownership by the share of the bank capital that belongs to the respective canton.

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<sup>8</sup> The left wing parties are defined to be the Social Democratic Party, the Labor Party, and the Green Party, and the data are taken from the Federal Office of Statistics.

<sup>9</sup> The information on election cycles has been provided by the Federal Office of Statistics.

<sup>10</sup> See also the Swiss Survey of Wages (Schweizerische Lohnstrukturerhebung) of the Federal Office of Statistics, Neuchatel.

### **Financial power of canton**

Finally, we include the financial situation of the canton as a pay determinant in state-owned banks.. We expect a positive impact of a canton's financial power on the level of board and executive compensation because a financially healthier dominant owner may be willing and able to afford to spend more on the compensation of their bank managers. We measure the financial situation of the cantons by the index of financial power. This index, which is provided by the Federal Department of Finance, is used to determine the flows of money among the Swiss cantons. It is based on the revenue of the canton, the relative tax burden, as well as the share of the canton classified as mountain area. Note that the cantons are mostly autonomous in setting their taxes.

## **5 Data and Sample**

This chapter provides a definition of the variables used in the empirical analysis, a description of the banks in the sample, the descriptive statistics of the variables used in the analysis, as well as information on total board compensation and total executive compensation.

### **5.1 Definition of Variables**

In this section, we provide a description of the variables used in the empirical analysis. The compensation data refer to the board as well as to the executive committee. Given that board members are not allowed to carry out executive functions in Swiss state-owned banks, the two groups can be separated completely. Information on board compensation includes total board compensation, average board compensation, which is total board compensation divided by the number of board members, and average variable board compensation, which refers to the average variable share of each board member. For the executives, we have the total executive compensation and the compensation by executive, which is total executive compensation divided by the number of executives, and also the average variable share of compensation of by executive. Note that the average board and executive compensation figures approximate the amounts that are effectively paid to the individual persons. Usually, the members of the board and the executive committee do not receive the same compensation, which reflects that the different members have different tasks and responsibilities with varying time commitments. The definitions of variables included in our regression analyses can be found in Table 1.

The data sources for the bank-specific information, if not noted otherwise, are the annual reports of the banks. The information on the financial power of the cantons is taken from the Federal Department of Finance. Information on the compensation paid to cantonal governors was taken from [www.badac.ch](http://www.badac.ch), an online database of information on the administration of Swiss cantons and cities. The information on the political orientation of the cantons was provided by the Federal

Office of Statistics and Hermann and Leuthold (2003). Finally, the canton-specific Herfindahl-Hirshman indices and the market shares of cantonal banks in the cantonal mortgage markets are taken from Piazza (2006), and for years after 2005 updated accordingly with data from the annual reports.

**Table 1: Definition of variables**

<b>Firm-specific variables</b>	
Total board compensation	Total compensation of all board member (in 1,000)
Board compensation	Average compensation of a board member, defined as total board compensation divided by the number of board members (in 1,000)
Variable board compensation	Average variable compensation of a board member, defined as total variable board compensation divided by the number of board (in 1,000)members
Variable share board compensation	Share of average variable board compensation, defined as Variable board compensation divided by Board compensation (in %)
Total executive compensation	Total compensation of all executives (in 1,000)
Executive compensation	Average compensation of an executive, defined as total executive compensation divided by the number executives (in 1,000)
Variable executive compensation	Average variable compensation of an executive, defined as total variable executive compensation divided by the number of executives (in 1,000)
Variable share executive compensation	Share of average variable executive compensation, defined as Variable exec. compensation divided by Exec. compensation (in %)
Board members	Number of board members
Executive members	Number of executives
Total assets	Size measure: Total assets (in 1,000)
Total loans	Size measure: Total loans (in 1,000)
Leverage	Risk measure: Debt divided by equity (in %)
ROA	Performance measure: Return on assets, defined as ratio of profits before transfers to reserves for general banking risk and before taxes over the total assets (in %)
ROE before taxes	Performance measure: Return on equity before taxes, defined as ratio of profits before transfers to reserves for general banking risk and before taxes over the book value of equity (in %)
Cost-income ratio	Efficiency measure: Operating expenses divided by operating income (in %)
Growth of deposits	Growth measure: Yearly growth rate of deposits (in %)
Growth of loans	Growth measure: Yearly growth rate of loans (in %)
Exchange listing	Dummy variable: Listed on stock exchange=1, 0 else
Market share	Market share in the local mortgage market
<b>Corporate governance-specific variables</b>	
Compensation committee	Dummy variable: takes the value of one if the bank has a compensation committee, and zero else.
Number of board members	Number of members on the board
Number of executives	Number of executives
Compensation committee	Dummy variable that takes the value of one if the bank has a compensation committee, and zero else
Board compensation set by legislative	Dummy variable that takes the value of one if cantonal parliament sets board compensation, and zero else
Governor is board member	Dummy variable: takes the value of one if the governor is a board member, and zero else.
Board elected by executive	Dummy variable: takes the value of one if the board is elected solely by the executive, and zero else.
Term restriction for board	Dummy variable: takes the value of one if there exists a restriction for

	the term of office of board members, and zero else.
Participation program	Dummy variable: Existence of a participation program=1, 0 else
<b>Canton-specific variables</b>	
High compensation of governors	Dummy variable: takes the value of one if the governors' compensation is above the median over all cantons, and zero else
Leftwing share in parliament	Fraction of seats held in cantonal parliament by left wing parties
Political spectrum	Indicator of the political orientation of the canton, ranging from left (smallest value) to right (highest value)
Election year	Dummy variable: takes the value of one if the year is an election year on the cantonal level, and zero else
Ownership share state	Share of bank capital owned by the canton (in %)
Financial power state	Index of financial power of the cantons (average of all cantons = 100)

This table reports the definitions of the variables used to construct the variables included in our regression analyses.

## 5.2 Sample Description and Descriptive Statistics

We target all the 24 cantonal banks in Switzerland. Cantonal banks are defined as banks with a statutory basis under cantonal law, with the canton holding a minimum of one third of the bank's capital and the voting rights. Note that the state guarantee, which was a key attribute of cantonal banks in the past, no longer constitutes an essential characteristic. Cantonal banks may be established either as public institutions or as public limited companies. Eleven out of the 24 cantonal banks are listed at the Swiss stock exchange SWX, whose listed firms are required to publish information on total board compensation, on the highest individual board compensation, as well as on total executive compensation. The other banks in our sample reveal their compensation information on a voluntary basis.

Our data cover the years from 2004 to 2013. Board compensation data are available for 24 out of 24 cantonal banks, although not for all the years under consideration. Executive compensation information is available for up to 20 banking institutions. Again, not all compensation figures are available for all the banks over the entire period, the missing banks are all smaller institutions that are not listed at the stock exchange. Therefore, our panel is unbalanced. Table 2 reports the structure of the compensation data for the state-owned banks included in our sample. Note that the values are deflated and reported in CHF of 2013.

**Table 2: Number of observations for board and executive compensation in state-owned banks by year**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Board compensation	21	23	23	24	22	24	24	24	24	24	235
Executive compensation	15	17	17	19	20	20	20	20	20	20	188

This table shows the number of observations for board and executive compensation in state-owned banks by each year. The data sources are the annual reports of the banks.

Table 3 shows descriptive statistics of the variables used in our analysis. On average, the banks in our sample spend 702,404 CHF on board compensation per year, and each board member receives

about 77,836 CHF on average. As our figures reveal, the average differences between banking institutions are quite large. While the lowest board compensation figure of 10,267 CHF refers to the Cantonal Bank of Appenzell Innerrhoden, which is the second smallest state-owned bank as measured by total assets of 2013, board members of the Banque Cantonale Vaudoise (BCV), the second largest bank, get the highest amount with 327,135 CHF, on average. The variable share of average board compensation is 15.6% on average, with a minimal value of zero % and a maximal value of about 62%.

Looking at executives, the state-owned banks in Switzerland spend, on average, 3.428 Mio CHF on executive compensation, and the average executive obtains 609,739 CHF in compensation. Again, we observe a certain variation, with a maximum average compensation by executive of 1.837 Mio. for the Zürcher Kantonalbank, and the corresponding minimal value of 163,101 CHF for the state-owned bank in the canton of Neuchâtel. Looking at the variable share of executive compensation, this amounts to almost 40% over all banks and years considered, with about 11% as minimum value and almost 60% as maximal value.

Total assets, on average, amount to 16.9 Bio CHF. The debt-to-equity ratio, our risk measure, is 11% on average. The return on assets *ROA* amounts to 0.58% over the time period considered, and the return on equity before taxes is 7.5% on average. The cost-income ratio as commonly used efficiency measure is 49.3% over all banks and years. Growth of deposits is 4.4% for the banks in our sample. Finally, ten out of 24 banks are listed at the stock exchange, and the market share in the local mortgage market amounts to 2.8% on average.

As to the governance-specific variables, an average board has between nine members, but the number varies from five up to 18 persons. The average number of executives is 5, but there exist banks with up to nine executives. Furthermore, roughly every second bank has a compensation committee. As to the influence of the state on compensation issues, in one fifth of the banks considered board compensation is set by the legislative. Furthermore, in about 40% of the banks the governor is serving on the board, and the board is elected by the executive in about one third of the banks considered. 605 of the banks have a term restriction for their board members, and finally in about 38% of the banks the employee owns stock or options of their employer.

The third set of pay determinants refers to political-economic factors of the specific cantons. The leftwing share in the parliament, our main political orientation measure, amounts to 28%, on average. On average, the state, resp. the cantons own 83% of the cantonal banks. The lowest value of 50% refers to the canton of Geneva, and in ten 10 cantons the state owns 100% of the bank. The financial power variable indicates that the cantons in our sample are slightly less affluent than the average over all Swiss cantons, which is normalized to 100. The share of leftwing parties in the

parliament, our main political orientation measure, amounts to 25%, on average. Overall, the descriptive statistics reveal a large variation between the banking institutes with respect to the characteristics considered, despite the fact that all the banks in our sample all belong to the same bank category.

**Table 3: Descriptive statistics for state-owned banks**

Variable	Mean	Median	Std. Dev.	Min.	Max
<b>Firm-specific variables</b>					
Total board compensation	702.404	568.249	503.202	92.804	2289.946
Board compensation	77.836	64.164	57.204	10.267	327.135
Variable share board compensation	15.669	13.201	18.165	0.000	62.361
Total executive compensation	3428.355	3055.082	2190.477	936.322	14040.191
Executive compensation	609.739	602.655	267.771	163.101	1836.823
Variable share executive compensation	39.517	40.840	9.287	11.424	57.854
Total assets	1.69e+07	1.26e+07	2.28e+07	1.78e+06	1.47e+08
Total loans	1.24e+07	9.96e+06	1.33e+07	1.57e+06	8.04e+07
Leverage	11.053	10.755	2.248	6.485	17.057
ROA	0.577	0.525	0.287	-1.763	2.191
ROE before taxes	7.489	6.943	3.706	-26.338	0.189
Cost-income ratio	49.335	47.761	7.827	32.161	71.790
Growth of deposits	4.368	4.082	4.653	-9.787	22.217
Exchange listing	0.409	0.000	-	-	-
Market share	2.766	1.761	3.747	0.237	25.266
<b>Corporate governance-specific variables</b>					
Number of board members	9.047	9.000	2.295	5.000	18.000
Number of executives	5.261	5.000	1.407	3.000	9.000
Compensation committee	0.434	0.000	-	-	-
Board compensation set by legislative	0.217	0.000	-	-	-
Governor is board member	0.391	0.000	-	-	-
Board elected by executive	0.353	0.000	-	-	-
Term restriction for board	0.600	1.000	-	-	-
Participation program	0.374	0.000	0.485	0.000	1.000
<b>Canton-specific variables</b>					
High compensation of governors	0.570	1.000	-	-	-
Leftwing share	28.373	26.500	12.006	10.000	50.000
Political spectrum	0.034	0.306	0.906	-2.014	1.497
Election year	0.243	0.000	-	-	-
Ownership share state	83.186	84.000	17.772	50.000	100.000
Financial power state	96.206	81.600	42.820	30.000	250.100

This table reports the descriptive statistics of the variables used in the regression analyses. The number of observations N= 235, except for the variables related to the compensation of executives, where N=188. The values (except ratios and dummy variables) are expressed in 1000 CHF of 2013. The data sources are the annual reports of the banks, the Federal Department of Finance, the Federal Office of Statistics and the online database [www.badac.ch](http://www.badac.ch). The time period covers the years from 2004 to 2013. The definition of the variables is in Table 1.

## 6 Empirical Analysis

In this section, we investigate the impact of the various determinants of board and executive compensation in Swiss state-owned banks within a multivariate regression framework. We use GMM estimations to cope with the problem of endogeneous regressors and also include time

dummies to control for time effects. We report the results for board compensation and executive compensation in separate subsections, and we consider the average compensation as well as variable share of compensation for each group.

## 6.1 The Empirical Model

Our main interest is to understand which factors determine the level of compensation for the board members and executives of the Swiss state-owned banks. We use the following four compensation measures: (1) the average compensation of board members, which is defined as total board compensation divided by the number of board members, (2) the variable share of average board compensation, which includes the variable part of compensation only, then (3) the average compensation of executives, which is computed by dividing total executive compensation by the number of executives, and finally (4) the variable share of average executive compensation.

According to the existing literature and our earlier explanations in section 4, we take into account bank size, leverage, performance and growth as commonly used pay determinants, and we also include whether the bank is listed as well as its market share in the local mortgage market.<sup>11</sup> In a second specification, we additionally include corporate governance variables related to the compensation setting process and the election process and composition of the board. Finally, we complement the analyses by adding the canton-specific characteristics related to the political economy, such as the compensation level of the governors, the leftwing share in the parliament, whether there is an election year, the share of the bank owned by the state and, the financial power of the canton.

The regression model is summarized by equation (1), i.e.,

$$compensation_{it} = c + \sum_{j=1}^J \beta_j X_{it}^j + \sum_{m=1}^M \beta_m X_{it}^m + \sum_{n=1}^N \beta_n X_{st}^n + \varepsilon_{it} \quad (1)$$

$compensation_{it}$  is the compensation variable of bank  $i$  at time  $t$ , with  $i=1, \dots, N$ ,  $t=1, \dots, T$ ,  $c$  is a constant term  $X_{it}^j$  are the bank-specific variables,  $X_{it}^m$  the corporate governance variables as  $X_{st}^n$  the state-specific characteristic related to the political economy defined as in Table 1, and  $\varepsilon_{it}$  is the disturbance, with  $v_i$  the unobserved bank-specific effect and  $u_{it}$  the idiosyncratic error. This is a one-way error component regression model, where  $v_i \sim (IIN(0, \sigma_v^2))$  is independent of  $u_{it} \sim (IIN(0, \sigma_u^2))$ . We consider the average compensation and the variable share of the average

compensation as our compensation measure, and consider board compensation and executive compensation separately.

A challenge for the estimation of compensation relates to potential endogeneity problems. For example, banks with a higher ROA tend to pay higher compensation. However, the causality could also go in the opposite direction, when banks consciously perform better because board members and executives are better paid and more motivated to work hard.

Following García-Herrero et al. (2009) as well as Delis and Kouretas (2011), we address these problems by employing the Generalized Method of Moments (GMM) for dynamic panel data put forward by Arellano and Bond (1995) and Blundell and Bond (1999). As Delis and Kouretas (2011) outline, the Blundell-Bond estimator is well suited to accommodate the possible endogeneity between our dependent variables and some of the explanatory variables in our models by means of appropriate instruments. In particular, the system GMM estimator uses lagged values of the dependent variable in levels and in differences as instruments, as well as lagged values of other regressors, which could potentially suffer from endogeneity. The latter problem would lead to a correlation between those endogenous variables and the error term and to inconsistent estimates if not properly taken care of.

With respect to the potential endogeneity of our regressors, we have good reasons to believe that at least some of our explanatory variables are endogenous. We follow Hayashi (2000) and Baum et al. (2003, 2007) in order to determine which variables are endogenous and which are exogenous. In concrete terms, we use a modified version of the Durbin-Wu-Hausmann test (Hayashi, 2000, Baum et al., 2003, 2007) and determine which variables have to be treated as endogenous. For those endogenous variables, which appear in italics in the tables with the regression results, we use their lagged values as instruments, as discussed in Arellano and Bover (1995) and Blundel and Bond (1998). The number of lags used are indicated in table legend. Note that the system GMM estimator also controls for unobserved heterogeneity. Overall, this estimator has been found to yield consistent estimations of the parameters (see, e.g., Delis and Kouretas, 2011). All our results are based on the one-step system GMM estimator, using robust standard errors. Even though the two-step estimator is asymptotically more efficient, the two-step estimates of the standard errors tend to be severely downward biased (Arellano and Bond 1991; Blundell and Bond 1998).

## **6.2 Board Compensation**

Table 4 reports the results from regressing the natural logarithm of board compensation on the explanatory variables considered. As mentioned earlier, we successively include more variables in order to understand the effects of the different factors considered. Looking at the first set of the

variables, namely the commonly considered firm-specific pay determinant, we observe that board compensation increases with firm size, which is consistent with our expectations and the existing literature. The statistical significance of this coefficient remains at 1% over all three specifications considered. Usually, larger firms are more difficult to manage, given that they have more business activities, offer more products and are involved in more complex transactions compared to smaller firms. All this increases the demands on the board members. Risk, as measured by the leverage ratio, does seem to have a significantly negative effect on board compensation, except for the first specification. Again, this result seems surprising, given our expectation that risk would have a positive impact on compensation.

The coefficient of return on assets as performance measure is not significant in our first specification. When including factors related to corporate governance and the political economy, however, the performance measure becomes negative, but only at the 5% and 10% significance level, respectively. This outcome contradicts predictions from principal-agent theory, suggesting a positive correlation between pay and performance. Note that we also included the lagged value of performance as alternative variable in order to allow for pay for past performance effects, and the results are robust. Bank growth as captured by the % change in deposits has a positive effect on board pay, but the again the coefficient loses its statistical significance once we include the other set of variables. The same holds true for the dummy variable Exchange listing. Finally, a higher market share in the local mortgage market implies a lower level of board compensation, but this effect is small and becomes again insignificant once we include the other set of independent variables.

From results with the additionally included corporate governance characteristics we observe that the number of board members has a negative effect on average board pay. The existence of a compensation committee does not seem to matter. In contrast, we find empirical evidence for lower board compensation in case board compensation is set or at least affected by legislative. Whether governors are on the board does not seem to matter for board pay, neither do board elections by the executive. Finally, term restrictions do not seem to matter for the level of board pay. One would have expected a positive effect, given that board compensation may be adjusted whenever a bank changes its board, i.e., the pay might be discussed whenever there is a change in the board composition. The existence of a participation program has a positive and significant impact, but the latter seems to disappear once we include the third set of variables.

Let us now consider the third set of pay determinants, namely the canton-specific variables as included in model specification (3). As argued above, the compensation level of governors is expected to have a significant and positive impact on the level of board compensation. Given that both governor and board compensations are subject to the public discussion, it is less difficult to

highly compensate board members of the state-owned bank in case the governors are also well paid. But our estimation results do not provide empirical evidence for our claim. The leftwing share in the parliament does not seem to matter for the level of board pay, neither the existence of an election year. The ownership share of the public entity, in this case the state, reflects the extent of control of the cantonal authorities on the bank, and the more the state owns of the bank, the more can it take influence on its decisions, at least on a strategic level. As expected, the state seems to have a negative and significant effect on the level of board compensation. Interestingly, state-owned banks in financially more powerful cantons pay less to their board members compared to financially weaker cantons. Normally, we would expect banks in richer cantons to pay more to their board members, both because they have the money and because there may be less financial pressure on the cantonal banks in the more affluent environments. However, serving on the board of a cantonal bank is only a part-time occupation, with the exceptions of the state-owned banks in the cantons of Zurich and Vaud, and board members probably derive the greater part of their income from other sources. Thus, it is possible that board member accept the position not merely for the compensation but for the prestige of the position and for enhanced access to the financial and social life of the canton. Most likely, the value of such access is greater in financially stronger cantons and might serve to compensate the board members for the lower remuneration.

Overall, we conclude that the level of board pay is mainly driven by bank size as firm-specific factor and that current or past performance does not seem to matter. As to corporate governance, the number of board members negatively affects the compensation level and the other mechanisms do not seem to matter. Finally, the inclusion of political economic variables shows that the share of the bank in the ownership of the state and the financial power of the canton have both a negative impact on the level of board pay.

In addition, we estimate the model with the variable share of board compensation as explained variable. The results are reported in Table 5. When considering the effects of the first set of firm-specific variables, we observe a positive effect of firm size, which is evidence that larger firms use relatively more shares and options to compensate their board members. Listed state-owned banks, however, use clearly less variable compensation for their board members. Note that size and stock market listing are correlated, but not to a very large extent. Also, banks with more market power seem to use less variable compensation for their board members. When looking at the second model specification with the corporate governance characteristics, banks with compensation committees also use less variable pay. The factors related to the political economy of the cantons do not seem to matter.

**Table 4: Board compensation in state-owned banks**

Dependent variable: Ln(Board compensation)	Firm characteristics	Firm and governance characteristics	Firm, governance and political characteristics
Ln(Total assets)	0.592*** (0.044)	0.515*** (0.097)	0.608*** (0.117)
<i>Leverage</i>	-0.065* (0.035)	-0.046 (0.054)	-0.021 (0.050)
<i>ROA</i>	-0.033 (0.312)	-0.096** (0.040)	-0.082* (0.041)
<i>Growth of deposits</i>	0.012*** (0.005)	-0.002 (0.003)	-0.003 (0.003)
Exchange listing	0.233*** (0.023)	0.053 (0.101)	-0.112 (0.125)
Market share	-0.022*** (0.006)	-0.008 (0.017)	-0.016 (0.016)
Number of board members		-0.090*** (0.015)	-0.089*** (0.017)
Compensation committee		0.043 (0.110)	0.082 (0.090)
Board compensation set by legislative		-0.250**	-0.221***
Governor is board member		(0.104)	(0.062)
Board elected by executive		-0.146 (0.104)	-0.138 (0.109)
Term restriction for board		-0.005 (0.129)	-0.011 (0.122)
Participation program		0.268 (0.210)	0.053 (0.201)
High compensation of governors		0.214* (0.118)	0.044 (0.129)
Leftwing share			-0.062 (0.056)
Election year			0.005 (0.005)
Ownership share state			0.007 (0.015)
Financial power state			-0.011** (0.004)
Constant	-4.839*** (0.387)	-3.009 (1.784)	-3.609* (2.066)
Observations	235	235	235
Number of banks	24	24	24
F-Test	204.24***	963.10***	86.83***
AB test AR(1) (p-Val)	-1.92**	-1.36	-1.94*
AB test AR (2) (p-Val.	0.11	-0.579	-0.16
Sargan test	6.73	2.30	2.93

The table reports results from one-step system GMM estimations of the effects of bank- corporate governance and political characteristics on compensation. The dependent variable is the natural logarithm of average board compensation as calculated and explained above. For the notation of the variables see Table 1. Time dummies included. The period covers the years 2004 to 2013. Variables in italics are instrumented through the GMM procedure following Arellano and Bover (1995), with, *Leverage* lagged at 1, *ROA* lagged at 3, and *Growth Deposits* lagged at 3. Robust standard errors are in brackets. Coefficients that are significantly different from zero at the 1%, 5%, and 10% level are marked with \*\*\*, \*\*, and \* respectively. The Sargan test is the test for over-identifying restrictions in GMM dynamic model estimation. AB test AR(1) and AR(2) refer to the Arellano–Bond test that average autocovariance in residuals of order 1 resp. of order 2 is 0 (H0: no autocorrelation); p-values in brackets.

**Table 5: Variable board compensation in state-owned banks**

Dependent variable: Variable share board compensation	Firm characteristics	Firm and governance characteristics	Firm, governance and political characteristics
Ln(Total assets)	11.206*** (2.637)	8.298** (3.385)	10.792** (4.362)
<i>Leverage</i>	3.508* (2.100)	-1.421 (3.194)	-1.363 (2.779)
<i>ROA</i>	25.158 (18.762)	-1.426 (1.574)	-1.778 (1.466)
<i>Growth of deposits</i>	0.030 (0.276)	-0.047 (0.158)	-0.077 (0.165)
Exchange listing	-3.032** (1.381)	-11.836* (5.776)	-13.710*** (4.842)
Market share	-2.987*** (0.345)	-2.244*** (0.664)	-2.516*** (0.782)
Number of board members		-0.657 (0.410)	-0.959* (0.495)
Compensation committee		-6.078 (3.758)	-5.520 (3.918)
Board compensation set by legislative		-5.471 (4.080)	-6.988 (4.295)
Governor is board member		-6.907 (4.797)	-7.026 (4.853)
Board elected by executive		-5.400 (5.116)	-7.689 (4.834)
Term restriction for board		18.183 (10.945)	15.695 (10.385)
Participation program		17.110*** (3.965)	13.422*** (4.328)
High compensation of governors			-4.585 (5.074)
Leftwing share			0.219 (0.187)
Election year			0.899 (0.784)
Ownership share state			-0.160 (0.169)
Financial power state			0.009 (0.054)
Constant	-214.363*** (23.310)	-99.613* (50.384)	-123.534* (66.860)
Observations	235	235	235
Number of banks	24	24	24
F-Test	463.06***	457.72***	122.05***
AB test AR(1) (p-Val)	-1.57	-0.05	-0.02
AB test AR (2) (p-Val)	-0.39	-0.51	-0.90
Sargan test	2.77	4.27	4.17203

The table reports results from one-step system GMM estimations of the effects of bank-specific corporate governance and political characteristics on compensation. The dependent variable is the variable share of board compensation as calculated and explained above. For the notation of the variables see Table 1. Time dummies included. The period covers the years 2004 to 2013. Variables in italics are instrumented through the GMM procedure following Arellano and Bover (1995), with *Leverage* lagged at 1, *ROA* lagged at 3, and *Growth Deposits* lagged at 3. Robust standard errors are in brackets. Coefficients that are significantly different from zero at the 1%, 5%, and 10% level are marked with \*\*\*, \*\*, and \* respectively. The Sargan test is the test for over-identifying restrictions in GMM dynamic model estimation. AB test AR(1) and AR(2) refer to the Arellano–Bond test that average autocovariance in residuals of order 1 resp. of order 2 is 0 (H0: no autocorrelation); p-values in brackets.

### 6.3 Executive Compensation

Table 5 reports the results from regressing the executive compensation, which is defined as total executive compensation divided by the number of executives, on the set of the explanatory variables considered above. The set of variables is identical to the one used to explain board compensation, given that the factors considered are expected to influence board and executive pay. Bank size, approximated by the natural logarithm of total loans, has a strong and positive impact on executive compensation. This result stands in line with the common expectations of a positive correlation between firm size and executive compensation, which reflects the complexity of management skills. Risk as measured by the leverage does not seem to matter. Similarly to the estimation results for the board compensation, this result stands in contrast to the commonly held belief that a higher risk should be compensated by a higher compensation. Interestingly, we do not find any evidence for a link between pay and performance over all three model specifications. The impact of the exchange listing is not robust over all three specification. We observe a positive effect in the full model, but the coefficient is significant at the 10% level only.

As to the corporate governance-specific variables, we find no significant effect of the existence of a compensation committee on the level of executive compensation. The determination of compensation plans for executives is typically a task of the compensation committee, and banks with compensation committees are expected to have more professionally designed compensation plans. Therefore, we would have expected some effect, even though the direction of the effect on the level of compensation is hard to predict. It is also possible that opposite effects cancel each other out. The other corporate governance variables do not seem to matter neither.

Concerning our canton-specific pay determinants, the relative level of governors compensation the political orientation of the parliament do not seem to affect executive pay. Also, the ownership share of the state does not seem to have a significant impact on the level of executive compensation, which stands in contrast to the result for the level of board compensation. Apparently, any influence of the state as bank owner on compensation issues seems to be limited to the board. The financial power of the canton has a strong and positive impact on executive pay. This result is not surprising and may simply show that a cantonal bank in a financially healthy environment can afford or may be willing to pay more to its executives compared to banking institutes in less affluent areas. Also, given that executive positions are full-time jobs, potential reputation effects as hypothesized for the board compensation do not exist.

Overall, we observe some difference between the pay determinants of board and executive compensation. In particular, the considered corporate governance and political factors seem to affect the compensation of both groups in different ways.

**Table 6: Executive compensation in state-own banks**

Dependent variable: Ln(Executive compensation)	Firm characteristics	Firm and governance characteristics	Firm, governance and political characteristics
Ln(Total assets)	0.398*** (0.019)	0.404*** (0.062)	0.359*** (0.083)
<i>Leverage</i>	-0.014 (0.021)	-0.002 (0.042)	-0.009 (0.042)
<i>ROA</i>	0.039 (0.060)	-0.001 (0.071)	0.014 (0.050)
<i>Growth of deposits</i>	-0.010** (0.004)	-0.001 (0.004)	0.000 (0.003)
Exchange listing	0.081*** (0.020)	0.108 (0.105)	0.157* (0.078)
Market share	0.008 (0.005)	0.021* (0.011)	0.009 (0.011)
Number of executives		-0.090*** (0.025)	-0.081*** (0.021)
Compensation committee		-0.026 (0.093)	-0.021 (0.077)
Board compensation set by legislative		-0.155	-0.312**
Governor is board member		(0.140) 0.079	(0.127) 0.003
Board elected by executive		(0.130) 0.048	(0.115) -0.150
Term restriction for board		(0.138) -0.060	(0.185) 0.151
Participation program		(0.187) 0.053	(0.225) -0.020
High compensation of governors		(0.083)	(0.089) -0.007
Leftwing share			(0.057) 0.000
Election year			(0.002) 0.002
Ownership share state			(0.021) 0.002
Financial power state			(0.004) 0.003***
Constant	-0.185 (0.401)	0.003 (1.116)	0.218 (1.353)
Observations	188	188	188
Number of banks	20	20	20
F-Test	139.02***	121.76***	152.70***
AB test AR(1) (p-Val)	-3.97***	-2.98***	-2.68***
AB test AR (2) (p-Val.	0.90	0.34	-0.44
Sargan test	6.41	7.41	3.02

The table reports results from one-step system GMM estimations of the effects of bank-specific, corporate governance and political characteristics on compensation. The dependent variable is the natural logarithm of average executive compensation as calculated and explained above. For the notation of the variables see Table 1. Time dummies included. The period covers the years 2004 to 2013. Variables in italics are instrumented through the GMM procedure following Arellano and Bover (1995), with *Leverage* lagged at 1, *ROA* lagged at 1, and *Growth Deposits* lagged at 3. Robust standard errors are in brackets. Coefficients that are significantly different from zero at the 1%, 5%, and 10% level are marked with \*\*\*, \*\*, and \* respectively. The Sargan test is the test for over-identifying restrictions in GMM dynamic model estimation. AB test AR(1) and AR(2) refer to the Arellano–Bond test that average autocovariance in residuals of order 1 resp. of order 2 is 0 (H0: no autocorrelation); p-values in brackets.

Looking at the variable share of executive compensation, we find the following results as reported in Table 7. The firm-specific factors do not seem to matter. From the corporate governance factors, a governor on the board seem to positively affect the variable share of executive compensation. Similarly, the variable compensation share is higher in case the board is elected by the executive. Unsurprisingly, the existence of a participation program leads to a higher variable share of executive pay. From the political factors, the leftwing share in the parliament is the only variable that seems to matter, i.e., in cantons with a more leftwards political orientation the variable share of executive compensation is smaller.

**Table 7: Variable executive compensation in state-owned banks**

Dependent variable: Variable share executive compensation	Firm characteristics	Firm and governance characteristics	Firm, governance and political characteristics
Ln(Total assets)	6.073*** (0.478)	5.116* (2.572)	3.376 (2.630)
<i>Leverage</i>	1.506*** (0.538)	1.170 (1.429)	1.028 (1.264)
<i>ROA</i>	1.797 (1.516)	1.019 (2.773)	0.455 (2.821)
<i>Growth of deposits</i>	-0.114 (0.103)	-0.166 (0.106)	-0.167 (0.104)
Exchange listing	-3.075*** (0.503)	-5.012* (2.657)	-5.524 (4.453)
Market share	-0.955*** (0.129)	-0.288 (0.466)	-0.174 (0.387)
Number of executives		-1.050 (1.020)	-0.270 (0.712)
Compensation committee		-1.356 (2.526)	-0.703 (1.766)
Board compensation set by legislative		2.264 (2.924)	1.566 (2.789)
Governor is board member		6.333* (3.557)	5.465* (3.027)
Board elected by executive		7.441** (3.361)	7.693* (4.419)
Term restriction for board		-9.874* (5.430)	-7.142 (5.331)
Participation program		7.327*** (2.449)	9.774*** (3.195)
High compensation of governors			-0.206 (2.762)
Leftwing share			-0.305*** (0.103)
Election year			-0.211 (0.652)
Ownership share state			0.067 (0.156)
Financial power state			0.045 (0.031)
Constant	-78.112*** (10.077)	-53.129 (48.022)	-30.992 (42.065)
Observations	188	188	188
Number of banks	20	20	20
F-Test	52.75***	35.04***	50.15***
AB test AR(1) (p-Val)	-0.56	-0.12	-0.27
AB test AR (2) (p-Val.	-1.34	-0.63	-0.92
Sargan test	2.76	3.98	6.08

The table reports results from one-step system GMM estimations of the effects of bank-specific corporate governance and political characteristics on compensation. The dependent variable is the variable share of executive compensation as calculated and explained above. For the notation of the variables see Table 1. Time dummies included. The period covers the years 2004 to 2013. Variables in italics are instrumented through the GMM procedure following Arellano and Bover (1995), with *Leverage* lagged at 1, *ROA* lagged at 1, and *Growth Deposits* lagged at 3. Robust standard errors are in brackets. Coefficients that are significantly different from zero at the 1%, 5%, and 10% level are marked with \*\*\*, \*\*, and \* respectively. The Sargan test is the test for over-identifying restrictions in GMM dynamic model estimation. AB test AR(1) and AR(2) refer to the Arellano–Bond test that average autocovariance in residuals of order 1 resp. of order 2 is 0 (H0: no autocorrelation); p-values in brackets.

## 6.4 . Robustness Tests

In addition to the results reported above, we carry out a set of sensitivity tests to check the robustness of our results with respect to the included variables and the sampling procedure. We use alternative variables for performance, size, and risk. In particular, we use the return on equity before taxes and the cost-income ratio as a performance measure, total loans as alternative proxy for firm size, and the excess capital ratio as an alternative risk indicator. In addition, the market concentration in mortgage markets instead of the market share in the cantonal mortgage market as competition indicator. The results with the alternative explanatory variables confirm our findings. In addition, we rerun the expressions by excluding each bank from the sample in order to see whether some results are not driven by outliers or specific cantons. As mentioned above in section 6.2, the apparently significant effect of the board compensation set by the legislative is driven by six specific cantons and does not hold for the entire sample. Given that our sample is rather small, we repeat our estimations by applying the bootstrap technique to get bootstrap confidence intervals. The bootstrap involves repeated re-estimation of a parameter using random samples with replacement from the original data. Because the sampling is with replacement, some items in the data set are selected two or more times and other are not selected at all. When this is repeated a hundred or a thousand times, we get pseudo-samples that behave similarly to the underlying distribution of the data. Without reporting the explicit results, the findings reported above are also robust with respect to the sampling procedures.<sup>12</sup>

## 7 Comparing board compensation of state-owned banks with regional and savings banks in Switzerland

In this section, we investigate to what extent state-owned banks differ from other banks in Switzerland with respect to their compensation practices. As outlined in chapter 2.1, there exist about 275 banks in Switzerland that can be categorized into six categories. However, the banks differ from each other in many respects, such as with respect to their size, the offered services, or their strategic position and geographic markets. In order to carry out sensible bank comparisons, we need to carefully choose those banks which are comparable to state-owned banks. For instance, it would not make sense to compare the state-owned banks with the two big banks UBS and Credit Suisse. Not only are UBS and Credit Suisse much larger, but they also offer additional financial services such as investment banking and asset management, and this on an international scale. Similarly, the groups of foreign banks and private banks do not easily compare to the state-owned banks, given the specialization of these financial institutions.

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<sup>12</sup> The results of the robustness tests are available from the authors upon request.

## 7.1 Sample description and descriptive statistics

The group that can be best compared to the state-owned bank are the regional and savings banks. Similarly to the cantonal banks, they focus on traditional banking activities and are often limited to a small geographic area. Also, some of the banks have public entities among their owners. Overall, there are 63 regional and savings banks in Switzerland, but given that most of them are private corporations, they publish their compensation data on a voluntary basis. In fact, we were able to collect data on board compensation from 17 regional and savings banks, but the information are not available for all the years. Unfortunately, data on executive compensation were available for a very small number of institutions only, and therefore, we are forced to limit our comparison analyses to board compensation. Given that regional and savings banks are not affected by the political processes of the states, we only consider firm-specific and corporate governance-specific pay determinant.

Table 8 reports the number of observations by year. Given that the data are not available for all the years, our panel is unbalanced.

**Table 8: Number of observations for board and executive compensation in regional and savings banks by year**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Board compensation	3	4	6	17	14	16	17	17	17	17	128

This table shows the number of observations for board compensation in regional and savings banks by each year. The data sources are the annual reports of the banks.

In order to get a first understanding about potential differences between state-owned and regional and savings banks, we report the mean and means difference tests for the variables included in our regression analyses. These descriptive statistics are in Table 9. The last column of Table 9 contains t-test statistics from a two-sided means difference test, Note that a negative (positive) value of the t-test statistic means a smaller (larger) mean of the respective variable for the regional and savings bank compared to the state-owned bank, and the asterix \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level.

As we can see from Table 9, the regional and savings banks pay significantly less to their board members, and the variable share of board compensation is also significantly lower. The regional and savings banks considered are also relatively smaller. In contrast, they exhibit a higher leverage ratio, which is an issue that should potentially be explored in a separate study. As to performance, regional and savings banks have a significantly lower performance compared to state-owned banks, and this holds for the ROA, the ROE and the cost-income ratio. We do not find any difference with respect to growth. Regional and savings banks are also less likely to be listed at the stock exchange, and they exhibit a lower market share. As to the corporate governance variables, there are less members on boards of regional and savings banks, on average.

Furthermore, these generally smaller banks are also less likely to have a compensation committee, term restrictions for their board members as well as a participation program. Overall, we find significant differences for all but the growth variable between the two bank groups. Accordingly, we expect the banks to be different also in terms of the way board compensation is set. In what follows, we explore this issue within a multivariate regression framework, in which we can control for the different characteristics.

**Table 9: Means-difference tests between state-owned banks and regional and savings banks**

Variable	Mean		Difference of means	T-test (two-sided)
	State-owned banks	Regional and Savings Banks		
Total board compensation	702.404	353.633	348.771	6.663***
Board compensation	77.836	38.901	38.935	6.770***
Variable share board compensation	15.669	11.489	4.179	2.402**
Total assets	1.69e+07	4,428,626	1.25e+07	6.021***
Total loans	1.24e+07	3,852,833	8,520,052	6.8392***
Leverage	11.053	13.589	-2.537	-9.572***
ROA	0.577	0.361	0.216	6.189***
ROE before taxes	7.489	6.312	1.177	2.640***
Cost-income ratio	49.335	59.278	-9.943	-8.247***
Growth of deposits	4.368	5.197	-0.828	-1.644
Exchange listing	0.409	0.266	0.143	2.733***
Market share	2.766	0.601	2.164	6.422***
Number of board members	9.047	8.25	0.797	3.035***
Compensation committee	0.434	0.320	0.114	2.126***
Term restriction for board	0.600	0.383	0.217	4.036***
Participation program	0.374	0.25	0.124	2.421***
Number of observations				

This table reports the means and means difference tests for state-owned banks and regional and savings banks. The number of observations N= 235 for state-owned banks and N=128 for regional and savings banks. The values (except ratios and dummy variables) are expressed in 1000 CHF of 2013. The data sources are the annual reports of the banks, the Federal Department of Finance, the Federal Office of Statistics and the online database [www.badac.ch](http://www.badac.ch). The time period covers the years from 2004 to 2013. The definitions of the variables are in Table 1.

## 7.2 Empirical Analysis

We estimate our main regression model with a selection of variables as above separately for the two subsamples as well as for all the banks together. Table 10 reports the result for the average board compensation, and Table 11 for the variable share of board compensation. Bank size positively affects board compensation in both state-owned banks and regional and savings banks, and the effect on the latter seems to be even stronger. As to the other firm-specific factors included, we do not find any robust differences. Looking at the corporate governance variables, the negative effect of the number of board members on average board compensation only exists for state-owned banks. In contrast, the existence of a compensation committee has a positive and significant effect on board compensation in regional and savings banks, but this does not hold for state-owned banks.

Looking at the results for the variable share of board compensation, as outlined in Table 11, we observe a negative effect of being listed at the stock exchange and the market share on variable board compensation in state-owned banks only. As to the corporate governance variables included in our analysis, the existence of a compensation committee has a negative effect on the variable compensation share in state-owned banks, but a positive impact on this share in regional and

savings banks. Finally, a participation program only positively affects the variable share in state-owned bank, but not in regional and savings banks.

Even though we find some evidence for differences between the two bank groups, the results might at least partly also be driven by the rather small number of observations, especially for the group of regional and savings banks. Therefore, it would be desirable to enlarge the sample for the comparison group in order to gain a better understanding of the underlying mechanisms.

**Table 10: Board compensation of state-owned banks and regional and savings banks**

Dependent variable: Ln(Board compensation)	State-own banks	Regional and savings banks	All	State-own banks	Regional and savings banks	All
	Firm characteristics			Firm and governance characteristics		
Ln(Total assets)	0.592*** (0.044)	0.683*** (0.173)	0.388*** (0.019)	0.543*** (0.099)	0.553*** (0.107)	0.482*** (0.046)
Leverage	-0.065* (0.035)	-0.091 (0.083)	-0.050* (0.027)	-0.023 (0.072)	0.008 (0.032)	0.020 (0.028)
ROA	-0.033 (0.312)	0.739 (0.585)	0.420*** (0.094)	-0.076 (0.053)	0.030 (0.067)	-0.010 (0.041)
Growth of deposits	0.012*** (0.005)	-0.081 (0.065)	0.004 (0.012)	-0.004 (0.004)	-0.003 (0.003)	-0.003* (0.002)
Exchange listing	0.233*** (0.023)	-1.827** (0.632)	0.155*** (0.040)	0.126 (0.105)	-0.915* (0.492)	0.125 (0.138)
Market share	-0.022*** (0.006)	0.420*** (0.142)	0.008 (0.007)	-0.004 (0.019)	0.179 (0.198)	-0.001 (0.011)
Number of board members				-0.091*** (0.018)	-0.072 (0.053)	-0.098*** (0.017)
Compensation committee				-0.020 (0.102)	0.618*** (0.086)	0.050 (0.097)
Term restriction for board				0.159 (0.226)	-0.022 (0.105)	0.085 (0.097)
Participation program				0.219 (0.146)	-0.121 (0.170)	0.139 (0.144)
Constant	-4.839*** (0.387)	-4.872** (1.903)	-1.822*** (0.533)	-3.770** (1.815)	-4.133*** (1.338)	-3.185*** (0.901)
Observations	235	128	363	235	128	363
Number of banks	24	17	41	24	17	41
F-Test	56.7***	70.72***	78.14***	55.53***	190.12***	30.75***
AB test AR(1) (p-Val)	-2.49**	-1.33	-4.03***	-1.39	-1.28	-2.59**
AB test AR (2) (p-Val.	1.11	-0.66	-0.13	-0.23	0.31	-0.30
Sargan test	6.15	1.89	5.33	4.45	3.91	2.71

The table reports results from one-step system GMM estimations of the effects of bank-specific and corporate governance characteristics on compensation. The dependent variable is the natural logarithm of average board compensation as calculated and explained above. For the notation of the variables see Table 1. Time dummies included. The period covers the years 2004 to 2013. Variables in italics are instrumented through the GMM procedure following Arellano and Bover (1995), with *Leverage* lagged at 1, *ROA* lagged at 1, and *Growth Deposits* lagged at 3. Robust standard errors are in brackets. Coefficients that are significantly different from zero at the 1%, 5%, and 10% level are marked with \*\*\*, \*\*, and \* respectively. The Sargan test is the test for over-identifying restrictions in GMM dynamic model estimation. AB test AR(1) and AR(2) refer to the Arellano–Bond test that average autocovariance in residuals of order 1 resp. of order 2 is 0 (H0: no autocorrelation); p-values in brackets.

**Table 11: Variable board compensation of state-owned banks and regional and savings banks**

Dependent variable: Variable share of board compensation	State-own banks	Regional&savings banks	All	State-own banks	Regional&savings banks	All
	Firm characteristics			Firm and corporate governance characteristics		
Ln(Total assets)	11.206*** (2.637)	8.090*** (0.609)	5.787*** (0.726)	9.763** (4.037)	3.894 (2.866)	4.120** (2.037)
Leverage	3.508* (2.100)	-2.126*** (0.366)	1.350 (1.035)	-1.915 (3.583)	0.364 (0.928)	0.553 (0.934)
ROA	25.158 (18.762)	9.201*** (1.655)	10.921*** (3.637)	-1.562 (1.565)	-0.845 (1.873)	-0.046 (1.244)
Growth of deposits	0.030 (0.276)	-0.136 (0.363)	-1.024** (0.449)	-0.080 (0.163)	0.114 (0.118)	-0.042 (0.065)
Exchange listing	-3.032** (1.381)	2.221 (2.529)	-1.706 (1.540)	-10.938* (5.682)	5.731 (11.663)	-9.339** (4.359)
Market share	-2.987*** (0.345)	-7.189*** (0.565)	-1.640*** (0.275)	-1.983** (0.831)	-7.439 (4.437)	-1.643*** (0.429)
Number of board members				-0.444 (0.495)	1.412 (1.057)	-0.024 (0.683)
Compensation committee				-8.198* (4.143)	8.692* (4.544)	-3.906 (3.837)
Term restriction for board				16.284 (11.467)	2.886 (4.293)	6.653* (3.606)
Participation program				18.778*** (4.409)	-6.605 (3.958)	19.088*** (4.898)
Constant	-214.363*** (23.310)	-75.346*** (7.687)	-90.748*** (20.563)	-124.360* (67.372)	-61.257* (32.650)	-60.732* (31.702)
Observations	235	128	363	235	128	363
Number of banks	24	17	41	24	17	41
F-Test	56.7***	70.72***	78.41***	55.53***	190.12***	30.75***
AB test AR(1) (p-Val)	-2.49**	-1.33	-4.03***	-1.39	-1.28	-2.59***
AB test AR (2) (p-Val.	1.11	-0.66	-0.13	-0.23	0.31	-0.30
Sargan test	4.15	1.89	5.33	2.12	3.91	2.71

The table reports results from one-step system GMM estimations of the effects of bank-specific and corporate governance characteristics on compensation. The dependent variable is the variable share of average board compensation as calculated and explained above. For the notation of the variables see Table 1. Time dummies included. The period covers the years 2004 to 2013. Variables in italics are instrumented through the GMM procedure following Arellano and Bover (1995), with *Leverage* lagged at 1, *ROA* lagged at 1, and *Growth Deposits* lagged at 3. Robust standard errors are in brackets. Coefficients that are significantly different from zero at the 1%, 5%, and 10% level are marked with \*\*\*, \*\*, and \* respectively. The Sargan test is the test for over-identifying restrictions in GMM dynamic model estimation. AB test AR(1) and AR(2) refer to the Arellano–Bond test that average autocovariance in residuals of order 1 resp. of order 2 is 0 (H0: no autocorrelation); p-values in brackets.

## 8 Conclusions

Our paper provides a recent overview of board and executive compensation practices in state-owned banks in Switzerland over the period from 2004 to 2013. We use a multivariate regression framework to explain board and executive compensation as a function of (i) commonly used firm-specific factors, namely bank size, risk, performance, growth, stock exchange listing and market share, (ii) a set of corporate governance-specific characteristics related to the election and compensation practices of board members, and finally (iii) as an important new aspect of the paper, we additionally consider canton-specific factors related to the political economic factors, which have a measurable impact on board and executive compensation in state-owned banks in Switzerland. As another new aspect, we compare board compensation practices of state-owned banks with those of regional and savings banks.

Our sample includes 24 state-owned and 17 regional and savings banks over the period from 2004 to 2013. On average, a board member of a Swiss cantonal bank earns 77,836 CHF per year, and the yearly compensation of an executive amounts to 609,739 CHF. There are, however, large differences among the state-owned banks with respect to the compensation of their directors and executives. Board members of regional and savings banks, in contrast, receive an average compensation of 38,901 CHF only. Our regression analyses further show that the state-specific factors related to the political economic processes, in addition to the commonly used firm-specific and corporate governance-specific pay determinants, are important for explaining board and executive compensation in state-owned banks. In addition, board and executive compensation are driven partly by different factors. Finally, our results also show that influence of certain corporate governance factors have a different effect on the compensation levels of both bank types considered.

We believe that our study reveals some potentially interesting aspects of compensation practices in state-owned banks in Switzerland. However, our results are limited from several points of view. First, our sample includes all 24 existing cantonal banks, but only 17 out of totally 63 regional and savings banks in Switzerland. This is because some of the banks that should be included in our analysis do not report their compensation figures. In addition, the banks in our sample have published compensation data since 2002 only, and we were able to obtain data for a large enough group from 2004 onwards only. Furthermore, it would be interesting to have more information about the compensation figures, such as details on the structure of the compensation, i.e., cash vs. non-cash, equity vs. non-equity based, or on equity holdings of managers and board members.

The objective of our work is to better understand compensation practices in state-owned banks, and to which extent these banks differ from other comparable financial institutions. Such issues seem even more important in the light of the last financial crises, which taught us, among other things, about the importance of adequate compensation schemes in the financial services industries and the disastrous effects of wrong incentive schemes. Accordingly, this information could not only be important to financial analysts and the business press; but most importantly also to the bank regulators, who take increasingly influence on compensation issues as well.

## References

- Arellano, M., Bond, S., 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies* 58, 277–297.
- Arellano, M., Bover, O., 1995. Another look at the instrumental-variable estimation of error-components models. *Journal of Econometrics* 68 (1), 29-52.
- Barontini Roberto/Bozzi Stefano (2011), Board Compensation and ownership structure: empirical evidence for Italian listed companies, in: *Journal of Management & Governance*, Vol. 15 No. 1 2011, pp. 59-89.
- Barro, J.R., and R.J. Barro (1990), Pay, performance and turnover of bank CEOs, *Journal of Labor Economics*, 8, 448 – 481.
- Baum, C.F., Schaffer, M.E., Stillman S., 2003. Instrumental Variables and GMM: Estimation and Testing, *Stata Journal* 3, 1-31.
- Baum, C.F., Schaffer, M.E., Stillman S., 2007. Enhanced routines for instrumental variables/generalized method of moments estimation and testing, *Stata Journal* 4, 465-506.
- Bebchuk Lucian A./Spamann Holger (2009), Regulating Bankers' Pay, Discussion Paper No. 641 6/2009, Cambridge 2009, <<http://ssrn.com/abstract=1410072>> (last visited on 19th Feb 15).
- Becher David A./Campbell II Terry L./Frye Melissa B. (2005), Incentive compensation for bank directors: The impact of deregulation, in: *The Journal of Business*, Vol. 78(5), pp. 1753 – 1778.
- Beiner, S., M.M. Schmid, and G. Wanzenried (2011), Product Market Competition, Managerial Incentives and Firm Valuation, *European Financial Management*, 17(2), 331-366, 2011.
- Blundell, R.W., Bond, S.R., 1998. Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics* 87 (1), 115-143.
- Capasso, A., M. Rossi, and B. Simonetti (2007), Ownership structure, heterogeneity and performance: a comparison between listed and unlisted companies, *Sinergie Rivista di studi e ricerche, Rapporto di ricerca n 26*, Aprile 2007, Cueim Comunicazione, pp. 89-99.
- Ciscell D.H., and T.M. Carroll (1980), The determinants of executive salaries: An econometric survey. *Review of Economics and Statistics*, 62, 7 – 13.
- Cuñat V., and M. Guadalupe (2005) How does product market competition shape incentive contracts?, *Journal of the European Economic Association*, 3, 1058 – 1082.
- Core, J.E., R.G. Wayne, and D.F. Larcker (2003), Executive Equity Compensation and Incentives: A Survey. *Federal Reserve Bank of New York Economic Policy Review* 9, no. 1 (April), 27-50.
- Delis M.D, Kouretas, G.O., 2011, Interest rates and bank risk-taking, *Journal of Banking and Finance* 35 (4), 840-855.
- Evans, J., T.H. Noe, and J.H. Thornton Jr. (1997), Regulatory Distortion of Management Compensation: The Case of Golden Parachutes for Bank Managers, *Journal of Banking and Finance*, 21, 825 – 848.
- Fahlenbrach Rüdiger/Stulz René M. (2009), Bank CEO Incentives and the Credit Crisis, *Journal of Financial Economics* Vol. 99(1), pp. 11 – 26.

- Feld L.P., and J.G. Matsusaka (2003), Budget Referendums and Government Spending: Evidence from Swiss Cantons, *Journal of Public Economics*, 87, 2703 – 2724.
- Firth Michael Arthur/Lin Chen/Wong Sonia M.L. (2008), Leverage and investment under a state-owned bank lending environment: evidence from China, in: *Journal of Corporate Finance*, Vol. 15 No. 5 2008, pp. 642 – 653.
- García-Herrero, A., Gavilá, S., Santabárbara, D., 2009. What explains the low profitability of Chinese banks? *Journal of Banking and Finance* 33 (11), 2080-2092.
- Gu Zhaoyang/Wang Kun/Xiao Xing (2010), Government Control and Executive Compensation: Evidence from China, Working Paper, University of Minnesota and Tsinghua University.
- Hayashi, F. (2000). *Econometrics*. Princeton University Press.
- Hermann M., and H. Leuthold (2002), The Consequences of Gentrification and Marginalization on Political Behavior. In: *Proceedings to the Conference «Upward Neighbourhood Trajectories: Gentrification in a New Century»*. 26. & 27. September 2002, Department of Urban Studies, University of Glasgow.
- Hermann M., and H. Leuthold (2003), *Atlas der politischen Landschaften*, vdf Hochschulverlag, Zürich.
- Houston Joel F./James Christopher (1995), CEO compensation and bank risk, Is compensation in banking structured to promote risk taking?, in: *Journal of Monetary Economics* 36 1995, pp. 405 – 431.
- Hubbard R.G., and D. Palia (1995), Executive pay and performance Evidence from the U.S. banking industry. *Journal of Financial Economics*, 39, 105-130.
- Jensen, M.C. (1986), Agency costs of free cash flow, corporate finance and takeovers, *American Economic Review*, 76, 323 – 329.
- Jensen, M.C., and K.J. Murphy (1990), Performance, pay and top-management incentives. *Journal of Political Economy*, 98, 225 – 264.
- John Kose/Qian Yiming (2003), Incentive Features in CEO Compensation in the Banking Industry, in: *FRBNY Economic Policy Review*, April 2003, pp. 109 – 121.
- John, K., and Y. Qian (2003), Incentive Features in CEO Compensation in the Banking Industry, *Federal Reserve Bank of New York Economic Policy Review* 9, no. 1 (April), 109-121.
- Kato Takao/Long Cheryl (2004), Executive Compensation, Firm Performance, and State Ownership in China: Evidence from New Panel Data, *William Davidson Institute Working Paper No. 690* 2004.
- Knopf, J.D., and J.L. Teall (1996), Risk-Taking Behaviour in the U.S. Thrift Industry: Ownership Structure and Regulation Changes, *Journal of Banking and Finance*, 20, 1329 – 1350.
- Luo Yongli/Jackson Dave O. (2012), Executive Compensation, Ownership Structure and Firm Performance in Chinese Financial Corporations, in: *Global Business and Finance Review*, Vol. 17 (1) 2012, pp. 56 – 74.
- Mengistae, T., and Lixin Colin Xu (2004), Agency Theory and Executive Compensation: The Case of Chinese State-Owned Enterprises, *Journal of Labor Economics*, 22, 615-638.

- Murphy, K.J. (1985), Corporate performance and managerial remuneration, *Journal of Accounting and Economics*, 7, 11 – 42.
- Murphy, K.J. (1986), Incentives, learning and compensation: A theoretical and empirical investigation of managerial labor contracts, *Rand Journal of Economics*, 17, 59 - 76.
- Murphy, K., (1999), Executive Compensation, in: Orley Ashenfelter and David Card, eds., *Handbook of Labor Economics*, Vol. 3. Amsterdam, North-Holland.
- Pedergrana M., and D. Piazza (2004), *Kantonalbanken im Vergleich 2004*, Schriften aus dem IFZ Institut für Finanzdienstleistungen Zug, Band 9, Verlag IFZ, HSW Luzern.
- Piazza D. (2007), *IFZ Hypo-Monitoring 2002-2006*, Working Paper, IFZ Zug.
- Piazza D. , and M. Otte (2009), *Governance bei Kantonalbanken*, IFZ – Hochschule Luzern.
- Raith, M., (2003), Competition, Risk and Managerial Incentives, *American Economic Review*, 93, 1425 – 1436.
- Rosen, S., (1990), Contracts and the market for executives, NBER working paper no. 3542.
- Saunders, A., E. Strock, and N. Travlos (1990), Ownership Structure, Deregulation and Bank Risk-Taking, *Journal of Finance*, 45, 643 – 654.
- Schmidt, K.M., (1997), Managerial Incentives and Product Market Competition, *Review of Economic Studies*, 64, 191 – 213.
- Schweizerische Nationalbank (2005), *Die Banken in der Schweiz 2005*.
- Swiss Bankers Organization (2009), *Wealth Management in Switzerland*, Basel.
- Swiss Bankers Organization, <http://www.swissbanking.org/en/home/home.htm>, Oct. 27th 2005.
- Tung Frederick/Wang Xue (2011), *Bank CEOs, Inside Debt Compensation, and the Global Financial Crisis*, Boston University School of Law Working Paper No. 11-49 October 2011.
- U.S. Department of Justice and the Federal Trade Commission (1997), *Horizontal Merger Guidelines*, Issued: April 2, 1992. Revised: April 8, 1997.
- Vives, X., (2004), Innovation and Competitive Pressure, CEPR Discussion Paper No. 4369.