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Citation for published version (APA):

Vorage, M. W. (2011). The politics of entry Amsterdam: Thela Thesis

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The Politics of Entry

Marcel Vorage

Politicians' capability to direct market access puts them at the heart of a struggle between entrepreneurs for preferential access to a protected market. Using a single political economy framework we study how interest groups are formed to jointly offer political contributions in exchange for such preferential access. The effectiveness of these offers depends on the political influence of consumers who suffer from reduced production. In three chapters we closely examine differences in group formation under lobbying or bribing, the effects of bank ownership on the level of entry and financial stability, and the possibility that politicians favour entry of core constituents independent of their efficiency. -

Marcel Vorage went to school in the Netherlands, Luxembourg, Germany and Belgium before completing a Bachelor at Erasmus University Rotterdam. Not having suffered (signaled his skills) enough he graduated in Tinbergen Institute's MPhil programme in 2006. During the following four years as a PhD-student at the University of Amsterdam he learned, taught, travelled, presented and enjoyed himself a lot. Finally he finished this PhD-Thesis. After having been amongst the youngest amongst peers in, he is now amongst the oldest in the Bachelor in Biology at the University of Salzburg.

Dear reader, please do not throw me out if you can give me to someone who might be interested in reading me (too). Thank you!

The Politics of Entry

ISBN 978 90 3610 223 0

Cover design: Crasborn Graphic Designers bno, Valkenburg a.d. Geul

This book is no. 491 of the Tinbergen Institute Research Series, established through cooperation between Thela Thesis and the Tinbergen Institute. A list of books which already appeared in the series can be found in the back.

The Politics of Entry

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad doctor
aan de Universiteit van Amsterdam,
op gezag van de rector magnificus
prof. dr. D.C. van den Boom,

ten overstaan van een door het college voor promotie ingestelde
commissie, in het openbaar te verdedigen in de Agnietenkapel
op vrijdag 25 maart 2011, te 14.00 uur

door

Marcel Wilhelmus Vorage

geboren te Heerlen

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grazie mille Enrico

Happy days

Enrico, thank you for so many good moments in Amsterdam and at many conferences abroad, being surrounded by great academics and wonderful friends! When we met I had no passing grade for statistics, no topic for a thesis and no plan for the future. With your help, advice and support I passed statistics and wrote this thesis. Luckily a plan for the future does still not exist. Thank you for having confidence in me and for the freedom!

When working on the papers in this thesis I have received advice and support from excellent colleagues from all over the world, and especially Ana Babus, Bruno Biais, Denis Gromb and Giacomo Ponzetto. Very useful feedback was also provided by the members of my PhD-committee: Brian Burgoon, Robert Dur, Guido Friebel, Randall Morck and Randolph Sloof.

Lots of love to my parents who have continuously supported me from Geel, Shanghai, Lake Hopatcong or Leonding...and always created a home to return to during holidays! In my brothers I admire Peter's independence and practical look on the world and Andre's flexibility and enthusiasm. Many fun phonecalls with grandma motivated me to be more assertive and thoughtful.

And now some random thoughts about those people that have made my life so much fun over these last few years...!

My first year at Tinbergen Institute would have been even tougher without the help from Jonneke, Freek and Tse-Chun, who always answered the phone. Without Ronald's help I would not have understood a single page from Mass-Collell. Chen helped me with the homework based on the same book, such that there was time to play football at Erasmus. Dion, thanks for the econometric advice and the male-chauvinist jokes in E4.37. A special thank you to Nora at the Tinbergen Institute and Yolanda at the Finance Group, who have made my life even easier.

Tibor and Drahuska took me on an epic journey to Slovakia and invited me countless times to stay overnight, providing a very nice end to a long working day in Amsterdam! It was fun to watch Friends and drink Yoki with Gerard and Feliciano, who made the Vogelstraat a true home. Andrei, let's keep on sailing together as after many years I still do not get many of your Russian jokes! And Txo, a Palmke to biology, het ballonnetje, and Rapidshare. Annora, Kiu-Yan and Nick, thank you for having me stay at your home in London on all these occasions, it was a pleasure. Due to Razvan and Carmen I now believe that life can be good even when 'married with children', a real accomplishment. My first ever remark to him was an insult, and now one of my best friends: to Thomas, a great cook and terrible Bridge-player :) Hessel and Martin, thanks for your patience, with me being equally bad at bridge and a far worse cook! Enrico, who plays guitar well, plays Due better and serves the best pasta and wine (after all you did come to Amsterdam for the food and weather, right?). Jerzy, would you like to be my guru dude? Marcel not only organised the tastiest barbecues but also took me on a magnificent trip to Brazil...Saudade... Stephen showed (off) how to ski and taught me to never lose my 'bout de pain', great fun! Cheers to you Amanda, to your marvelous sense of humor. Luc and Ruxi, where do we meet the next time round, Alsace or Retezat? Worries melt upon Lygia's warm and enthusiastic greetings every time we meet (the one exception being when you were moving). And Aspasia, I want my money back too:) Liebe Grüße to those making Salzburg such a nice place to live. Sumedha and Kasia, wish you happiness from your special corner in my heart.

Peter, Pieter, Timo and Vincent, there is only one conclusion... 'Poh!'

Hug,

Marcel

*"It's not the people who vote that count, it's the people who count the votes."
Josef Stalin (?)*

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Introduction and summary

Entry is an underresearched topic in economics. In this thesis we investigate how politics, defined as political preferences and executive constraints, shape the level and composition of entry. The number and identity of entrepreneurs is influenced by political choices over licenses, subsidies or the distribution of loans. This capability to direct market access puts politicians at the heart of a struggle between citizens for preferential market access to a protected market. Interest groups form to enable citizens to jointly offer political contributions in exchange for preferential access. The effectiveness of these offers depends on the political influence of consumers who suffer from reduced production. Their political influence is determined by the level of political accountability, reflecting the ability of citizens to question and challenge government policy. This thesis studies three distinct cases of this struggle using a single political economy framework. Before summarising the three main chapters, we shortly review evidence showing that politicians influence market access to their advantage.

1.1 The link between politics and entry

Politicians affect entry by with-holding licenses or by drafting more general legislation that impedes entry (De Soto, 1990). The public interest view argues that the government may screen entrants and effectively restrict entry to correct market failures such as low quality products, negative externalities, duplicated effort or instability stemming from low profit margins and/or herding. By correcting market failures, stricter regulation of entry induces greater social welfare. Alternatively, regulation may be acquired by industry. Here, stricter regulation of entry keeps competitors at bay and protects incumbents' rents. It may also be the case that government officials set up a 'tollbooth' by erecting high official entry barriers to be bribed by those trying to overcome these barriers. For example, potential entrants may bribe the official not to screen or to conceal the information gained (Guriev, 2004). These dealings between industry and politicians are described by the private interest view that argues that stricter regulation generates rents for industry and political leaders, and damages social welfare. Empirical evidence strongly supports the private interest view. Countries in which government faces greater democratic control, and thus serves the voters' interest better, have lower barriers to entry. For example, countries with more democratic and limited governments have lighter regulation of entry comprising the number of procedures, official time, and official start-up costs before a business can operate legally (Djankov, La Porta, Lopez-de-Silanes and Shleifer, 2002). When citizens have greater democratic rights competition is more fierce (Benmelech and Moskowitz, 2008) and firms are younger and more innovative (Acemoglu, Aghion and Zilibotti, 2006). A more efficient, independent and trusted legal system also constrains the executive and enhances growth and access to finance by small firms (Frye and Shleifer, 1997; Beck, Demirgüç-Kunt, Laeven and Levine, 2008). In general, regulatory capture is deeper when a small elite enjoys

weak competition (Engerman and Sokoloff, 2002; Acemoglu, Johnson and Mitton, 2007).

An important way for politicians to control entry is by influencing access to finance. Such political influence on lending may be direct through state banks or indirect through regulation of private banks. State banks favour politically connected firms which receive larger loans and pay comparable interest rates to non-connected firms, even though they are less likely to repay (Khwaja and Mian, 2005; Faccio, 2006 ; Claessens, Feijen and Laeven 2007). In addition, interest rates on Italian state bank lending are lower for larger firms and in areas where the political party affiliated to the bank is strong (Sapienza, 2004). Privatization of banks reduces political interference (Shleifer and Vishny, 1994; Bennedsen, 2000; Martimort, 2005), yet the privatization decision itself is an endogenous political choice. When banks are privately owned, politicians still influence access to finance and stability indirectly through regulatory choices. Special interests lobby to for regulation that limits competition, allows captured access to finance and undermines newcomers (Kroszner and Strahan, 1999; Rajan and Zingales, 2003). Insiders may also lobby to weaken minority investor rights to protect private benefits (Bebchuk and Neeman, 2009), which has the effect of reducing access to finance for other firms. In line with the evidence on entry regulation, a highly accountable democracy with diffused media circulation stimulates financial access and entry (Perotti and Volpin, 2007). In addition, a remarkable panel study of United States states shows that regulation favorable to access to finance and entry is strongly associated with stronger political and suffrage rights (Benmelech and Moskowitz, 2007). Finally, former high-ranking politicians are more likely to become bank directors in countries with more powerful but less accountable governments. When more of such connections exist, bank regulation tends to be more pro-banker (Braun and Raddatz, 2010).

The abuse of political control over entry is more intense when the executive is

relatively unconstrained. In Burundi licensing and access to finance were manipulated by politicians to favour core constituents (Ngaruko and Nkurunziza , 2002). In Mali the executive created rents through political case-by-case control of entry in both the industrial and trading sector, which was only reduced due to public protests leading to regime change and a freer press (Daubrée and Stavasage, 1998).

1.2 Modeling Institutions

A government should seek to maximise social welfare. Even if the social welfare is clearly defined and there is agreement on how to maximise it, governments do not always pursue this social obligation. Schumpeter (1950) already states that "It does not follow that the social meaning of a type of activity will necessarily provide the motive power". In more recent years the well-known public interest view has been proven wrong on many occasions, such as for the regulation of entry in Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002). Politicians' fulfillment of their social obligation only comes as a 'by-product' of serving their own interests such as income, power and the status attained by being in office, see Downs (1957). Therefore, by controlling access to income, power and office citizens can incentivise politicians to serve their interest. To gain such control citizens need to be able to solve their collective action problem via mass protest, the media or elections. We capture the overall ability of citizens to observe and direct political decisions towards social welfare in a single variable, political accountability. In this thesis a country's level of political accountability is the exogenous institution driving many of the results. When modeling it formally, accountability is defined as the weight politicians puts on citizens' welfare relative to his own.¹ This means that when accountability is zero politicians maximize their own consumption, while higher

¹The specific functional form is irrelevant, as long as the politician cares more for social welfare relative to his own as accountability goes up.

accountability forces politicians to take consumption of citizens into account too. So, as accountability increases politicians are more sensitive to public opinion; they need to provide higher social welfare to stay in power. Analysing how accountability is determined is outside the scope of this thesis. The focus is on the political incentives that different levels of accountability generate. Using the reduced form allows us to rank countries along single aggregate measures and to perform relatively simple tests for the models' predictions. Crucial for this approach is that accountability can neither be reduced to zero by politicians nor increased to the maximum by citizens. It is reassuring that countries today span a wide range from low to high accountability and that accountability is (somewhat) persistent. Next to political accountability we introduce judicial independence (legality) in chapter two and polarisation in chapter four as distinct institutional variables. Legality constrains the executive in breaking the law, in our case accepting bribes. It refers to the willingness and ability of the judiciary to prosecute and condemn politicians for accepting bribes. Polarisation refers to the leadership's valuation of the utility from their community's members relative to the utility of other citizens. It thus represents the depth of existing social divisions. When modeling we assume that legality and polarisation are deeprooted institutions that remain unaffected by politicians and citizens.² So, in this setup institutions affect political preferences and thus political action while political action does not affect institutions.

1.3 The model's assumptions

Throughout this thesis we use the same setup which we shortly describe in the next paragraph. Here we emphasize the simplifying assumptions we make which help us to reduce complexity and focus on interest group formation, entry and stability. The

²Countries may have high legality and low political accountability such as Singapore and the reverse such as the Philippines. Countries may also have high polarisation and high political accountability such as Belgium and the reverse such as North Korea

tailoring of the chosen setup to specific questions is presented in modeling sections of the corresponding chapters.

We study *a single politician* holding the power to regulate entry into a market for final goods. A unit mass of citizens consumes this final good while *every citizen has sufficient disposable income to buy the optimal amount of final goods*. In pursuit of noncompetitive profits each citizen tries to convince the politician to grant him exclusive market access. Access to the protected market enables any citizen to start *a firm producing a single unit of final good*, and to generate profits. To influence the politician more effectively *citizens may join a single interest group* offering political contributions to the politician under the assumption that *interest groups can commit to paying contributions after the politician has delivered upon the agreed policy*. We abstract from collective action problems within interest groups, as *contributions are shared equally by the winning group's members*. The politician compares the offers, meaning that *the politician treats all contributions equally, irrespective of their form or origin*³. The politician then sets entry optimally and those citizens satisfying the political entry requirements start a firm, produce, sell the final good and pay political contributions.

1.4 Thesis overview

This thesis contains three self-contained chapters which can be read independently, each with its own introduction, analysis and conclusions. A full list of variables and references can be found at the end of the thesis. Although all chapters discuss political influence over entry using the same basic theoretical framework, each has a distinct focus. Chapter two and three were written with my supervisor, Enrico Perotti. All remaining errors are mine.

³As will become clear, the politician may receive bribes or lobbying contributions in chapter two, may be paid for direct provision of loans or a bank charter in chapter three and receives contributions from different segments of the population in chapter four.

We investigate differences in interest group formation under bribing and lobbying in chapter two, bank control, access to finance and financial stability in chapter three and discriminatory entry in a divided society in chapter four.

1.4.1 To be bribed or lobbied

Chapter two focuses on the choice of a politician to not enforce any rule, control entry directly and collect illegal bribes *or* commit to a rule, control entry indirectly via this rule and be legally lobbied. Ours is the first paper investigating the effects of either acquiring an individual exception to a rule (bribing) and changing a rule applicable to everyone (lobbying) on the formation of interest groups. We show how controlling entry directly generates lower entry rates and grants politicians more bargaining power, as no interest group has a strategic advantage in the lobbying game. Using a rule namely creates a cut-off creating a free riding advantage for citizens with characteristics favoured by the rule. By forming a separate interest group 'the strongest' citizens are able to reduce competition from other groups, which is impossible when the entry rule is not enforced. Despite generating lower rents, the illegality of bribes induces politicians to switch to regulation when political accountability is high. As a result, countries with weak accountability are characterised by bribing and relatively low entry while countries with strong accountability exhibit lobbying and higher entry rates. We demonstrate empirically that additional executive constraints result in fewer and faster procedures to set up a new business, facilitating entry.

1.4.2 Bank ownership and financial stability

In chapter three we study another political choice between state, captured private or diffusely held private banks. Under state-ownership citizens pay the politician for exclusive access to loans. When banks are private, citizens pay the politician for a

bank charter. Under both ownership types the party in control decides on whom to grant a loan and on the intensity of monitoring, which determines how much of the loan is repaid. This paper's contribution is to endogenously model such bank control and to investigate its effects on financial stability and entry in the product market. We show that when accountability is low, politicians prefer state control to maximize their rents. As state banks are less efficient, there is a shift to private control for higher accountability. This transition leads to higher risk taking, as private banks do not internalize the social costs of bank failure. To discourage private risk taking more effectively, the politician leaves more rents to private banks which then have more to lose in case of default. We conclude with some suggestive data linking bank control to accountability, complementing existing evidence that financial instability is highest when banks are private and captured by a small interest group.

1.4.3 Partisan entry

In countries where the population is segmented by ethnic, language or other ex ante traits politicians may cater to core constituents by favouring their entry independent of their efficiency. Chapter four investigates how political accountability and polarisation between communities affect such targeted entry. It provides a framework rationalising the observation that inequality and conflict are often prevalent in (transition) countries with intermediate accountability. The model shows that ownership is most targeted when polarisation is high and when political accountability is *intermediate*. To get an intuition for the second result consider two extremes: zero and perfect political accountability. When accountability is zero the politician seeks to maximise total firm profits to enlarge political contributions by allowing entry to a small but efficient set of entrepreneurs. When accountability is perfect the politician maximises production by allowing free and therefore efficient entry. Hence, entry is nondiscriminatory in both extremes. Only when accountability is intermediate and

efficiency considerations do not dominate the politician's decisions, entry is limited and biased. We also show that a more polarised society induces discriminatory entry and inefficient production, resulting in lower total entry.

2

To be bribed or lobbied

2.1 Introduction

We explicitly model a politician's choice between committing to a rule to indirectly control market access under the influence of lobbying, and not committing to such a rule to directly control access in a bribing context. Essentially, the politician sets a rule and decides whether or not to enforce it. A specific motivation for politicians to abandon direct control is to avoid the risk of legal action associated with bribes, a risk which increase with political accountability. Direct control of market access may be divested from the state in order to be legally lobbied, e.g. on regulation surrounding entry.

Both bribing and lobbying are often treated as equivalent. However, recent research documents important differences. Firstly, government officials can often use lobbying income for political campaigns only, offering an electoral gain (Baron, 1994; Grossman and Helpman, 1996). Secondly, lobbying is aimed at policy-makers or politicians, whereas bribing is aimed at policy-enforcers or bureaucrats. Alesina and Tabellini (2008) point to the difference between lobbied politicians' worrying about reelection and bribed bureaucrats seeking a career. Campos and Giovanni (2008)

argue that lobbying involves high-level politicians while bribing involves relatively nonaccountable bureaucrats, and suggest an internal conflict. Thirdly, lobbying seeks to change policy whereas bribing seeks to circumvent existing policy' leading Harstad and Svensson 2006) to argue that lobbying is a more 'permanent ' form of influence. Finally, bribing is illegal whereas lobbying is legal in most countries (Harstad and Svensson, 2006).

Our paper focusses on another difference: the formation of special interest groups is different under bribing and lobbying. Consider the case when a politician sets an entry rule, but may ignore the rule in exchange for illegal bribes, or be legally lobbied about a binding rule. Critically, a politician can freely favour individual citizens by accepting their bribe. In contrast, under lobbying the politician drafts a rule favouring some based on only their characteristics. In other words, under bribing the politician grants individual circumventions to an overly restrictive rule while under lobbying the politician alters the restrictiveness a rule which is then enforced. In a setting with special interests competing for preferential entry into a profitable sector, we show that this difference in 'selection technology' affects competition between interest groups, sequential interest group formation, political contributions and the level of entry.

As characteristics do not matter under bribing, politicians can create 'perfect competition' between interest groups to breach a rule in their favour, maximising political rent extraction. Lobbying instead defines a cut-off for entry which will be more easily satisfied by some individuals (say, own capital in a bank entry game). Those individuals with 'strong' characteristics can unite in an interest group and win the lobbying game by outbidding any counteroffer in equilibrium, retaining some rents. This free-riding advantage exists because no rule can exclude entry by the strong group while allowing entry by a competing group (with weaker members). Therefore being bribed over entry allows the politician to extract larger political

contributions than being lobbied for enforced rules. Interestingly, by admitting a next weakest individual the strong group can effectively deprive its fiercest rival of its strongest member. Such strategic enlargement and the relatively low political contributions under lobbying result in entry rates being higher than under bribing.

In summary, the political decision on the allocation of control substantially affects the formation of interest groups. We offer here a novel result that having direct control over market access and being bribed leads to greater political rents and lower entry rates than controlling access indirectly via regulation and being lobbied. The reason is that any rule chosen to regulate access create a free riding advantage for specific interest groups, reducing competition in the lobbying game. In the case of direct political control, the state can assign access directly, so it can force more competition among different interest groups and ultimately extract more rents. Only when political accountability is high enough will the the politician relinquish direct control to avoid legal sanctions associated with bribing.

2.2 Related literature

Grossman and Helpman (1994) model exogenous interest groups seeking to influence trade policy. Mitra (1999) endogenises the appearance of interest groups with industry-specific preferences. In a paper on entry, Perotti and Volpin (2007) endogenise the size of the interest group lobbying for preferential access to production in a single sector.^{1,2} We use a similar setup but allow for the endogenous formation of multiple competing interest groups. We also adopt the sharp distinction between illegal bribing and legal lobbying, although we do not distinguish between bureaucrats

¹Bliss and Di Tella (1997) model a single agent demanding a fixed graft per firm. For a given distribution of firm-specific overhead costs the agent trades off higher entry and lower rents per firm. They show that, depending on the overhead costs of the marginal firm, more similar costs can both increase and decrease graft.

²For a great overview on political economy models (in trade) and their assumptions, see Nelson (2007).

and legislators. In our model the politician chooses to control entry directly and be illegally bribed or regulate entry using a general rule and be legally lobbied, whereas Harstad and Svensson (2006) model firms choosing whether to bribe or lobby the government. Lobbying by special interests, in itself a legal activity, is constrained by political institutions such as elections, and informal ones such as scrutiny by the media (Besley, Burgess and Prat, 2006).³ Based on responses from the Executive Opinion Survey from the World Economic Forum over 2004 and 2005, bribing seems more common when accountability is low and lobbying when accountability is high (Kaufmann and Vicente, 2005).⁴ In addition, firms seem to lobby more and bribe less when laws are undertaken by a more trusted legislature (Bennedsen, Feldmann and Lassen, 2009). Bribing is additionally constrained by legal institutions such as an independent judiciary, also in case of preferential access to state bank lending (La Porta, Lopez-de-Silanes and Shleifer, 2006). Throughout the paper we separate strong legal institutions that restrain the executive from breaking the law, and political institutions that constrain choices which favour special interests over the public at large.

The misuse of public office for private gain is constrained by political, economic and legal institutions (Svensson, 2005). Interestingly, competition is more limited when citizens have fewer democratic rights (Benmelech and Moskowitz, 2008) and when wealth is more unevenly distributed (Rajan and Ramcharan, 2007). Small firms enjoy higher growth with a more efficient, independent and trusted legal

³Public accountability is higher with a well-informed electorate and free and regular elections (Adserà, Boix and Payne, 2003). Research on Brazil shows that the possibility of re-election and the availability of a local judge and local media increase public accountability (Ferraz and Finan, 2007). A newspaper campaign in Uganda to reduce capture of public educational funds greatly reduced corruption (Reinikka and Svensson, 2005).

⁴This result is not emphasized in the paper, but is clear from the regressions. The responses used from the survey measuring bribes are 'financial honesty of politicians' (Q4.02), 'frequency of illegal contributions' (Q4.13), 'frequency of diversion of public funds due to corruption' (Q5.11), 'frequency of bribes in procurement' (Q5.12E) and 'frequency of state capture' (Q5.12F). The ones used for lobbying are 'favouratism in policy and procurement' (Q4.14), 'frequency of legal political contributions' (Q4.14) and 'influence in laws and regulations' (Q5.14D).

system, which enhances their access to finance (Frye and Shleifer, 1997; Beck, Demirgüç-Kunt, Laeven and Levine, 2008). Moreover, when a small elite enjoys limited competition, regulatory capture is more profound (Engerman and Sokoloff, 2002; Acemoglu, Johnson and Mitton, 2007). To the extent that greater accountability supports capital accumulation, our analysis has similar empirical implications as in Harstad and Svensson (2006). In their analysis of private agents' preferences for bribing versus lobbying, lobbying is preferred once enough capital has been invested.

Corrupt officials can limit entry by issuing or with-holding licenses or by drafting more general legislation that impedes entrepreneurs to set up new businesses (De Soto, 1990). In Uganda for example, a one percent increase in bribery associates with a three percent reduction in firm growth (Fisman and Svensson, 2007). Also at a macro-economic level, corruption reduces investment and growth (Mauro, 1995).⁵ There is evidence that in Mali rent-creation through political case-by-case control of entry in both the industrial and trading sector was strongly reduced due to broad political changes (Daubrée and Stavasage, 1998).⁶

2.3 Model setup

A single politician chooses between setting an enforced entry rule under the influence of lobbying or selectively applying a prohibitive rule under the influence of bribing. To lobby or bribe effectively citizens may form (competing) interest groups seeking preferential entry to the politically protected market. Concretely, the politician accepts the offer of one of the interest groups in exchange for allowing each of its members to produce one unit of final good. Ultimately every citizen i is either an

⁵Work establishing a causal link between good institutions and growth includes Hall and Jones (1999), Acemoglu, Johnson and Robinson (2001), Easterly and Levine (2003) and Rodrik, Subramanian and Trebbi (2004).

⁶In Mali, public protests in 1991 led to regime change allowing liberalisation. As the previously protected merchants were allies of the ousted government and the press became more free, corruption became less appealing to government officials.

entrepreneur e making a profit $\pi_e \geq 0$ or a consumer c making zero profits $\pi_c = 0$. Citizens seek to create firms as long as they have positive net value $\pi_e > 0$. We define m as the entry level for which $\pi_e = 0$. As citizens only start a firm as long as $\pi_e > 0$ entry is bounded from above by m . For consumers to remain the majority of the population we assume that $m \leq \frac{1}{2}$.

The politician thus either commits to enforce a rule and be legally lobbied, denoted by L , or not to commit and be illegally bribed, denoted by (B) . We now give an overview of the set of governance structures $G = \{B, L\}$.

Table 2.1: Bribing versus lobbying

<i>Governance structure (G)</i>	Enforcement of rule	Selection technology	Legality
<i>Bribing (B)</i>	No	Choosing individuals	Illegal
<i>Lobbying (L)</i>	Yes	Setting the rule	Legal

2.3.1 Different regulatory barriers to entry

Some (regulatory) barriers to entry can be overcome by additional investment. One can think of technological standards, safety requirements or accounting and taxation rules. In that case citizens' access to finance is the only determinant of entry. On the other hand, a minimum level of education, a minimum age or requirements on personal health may not be overcome with wealth. These barriers are very different, but we now argue that our model treats financial and individual barriers in the same framework.

2.3.1.1 Financial barriers

Consider a unit mass of citizens indexed by i differing in wealth w_i , uniformly distributed on the interval $[0, 1]$. Suppose that any citizen can start a firm that produces a single unit of final good by making an investment of one, so that agent i needs external finance of $1 - w_i$ to start a firm. Under bribing B the politician directly

lends or provides (formal or informal) guarantees to the citizens of his choice, allowing them to produce irrespective of their wealth w_i . Under lobbying L the politician sets the level of investor protection $\delta \in [0, 1]$, enabling lenders to salvage share δ when repossessing the investment of one. Being able to credibly commit to repay δ , this is exactly what citizens can borrow. Therefore only citizens with wealth $w_i \geq 1 - \delta$ can become entrepreneur.⁷ Although available capital may be endogenous to political or legal institutions we assume that banks can raise the required amount of capital at zero interest.

2.3.1.2 Individual barriers

Consider the same unit mass of citizens indexed by i differing in individual characteristic w_i , such as eyesight or reaction speed when trying to become a pilot. Under bribing B the politician picks the individual entrants irrespective of w_i , whereas under lobbying L the politician sets rule δ and allows only those with $w_i \geq \delta \in [0, 1]$ to enter. As with financing the choice of δ results in share $1 - \delta$ being able to satisfy entry requirements.

2.3.1.3 Entry

In general the politician chooses the level of entry under both B and L , in the first case by directly choosing the set of entrants, in the second by setting rule δ . The crucial difference is that the politician can freely choose the identity of entrants under B , while under L the set of entrants for a given δ depends on individual characteristic w_i . The number of entrants is denoted by n_B under B and by $n_L = \min\{1 - \delta, m\}$ under L . In either case $G = \{B, L\}$ the endogenous share of entrepreneurs is n_G , while the remaining $1 - n_G$ citizens only consume their disposable income which we call ω .

⁷One might be concerned that financial rules are drafted by unaccountable regulators, even in the most democratic countries. However, Barth, Caprio and Levine (2005) argue that those regulators abuse powers bestowed upon them unless kept in line by (accountable) politicians.

The reduction of rules to an observable one-dimensional characteristic is a simplification. Although in practice rules may be multi-faceted, the one-dimensional case does fit financial barriers. Moreover we believe it is useful to describe the two extreme cases being fully free selection (bribing) and selection on a single criterion (lobbying). Qualitatively, a multi-faceted rule is an intermediate case.

2.3.2 Timeline

At $t = 0$ the politician chooses to commit to enforce a rule and be legally lobbied (L) or not to commit and be illegally bribed (B), $G = \{B, L\}$.

At $t = 1$ representatives sequentially form coalitions of citizens. After forming a coalition, each representative (proposer) makes an irreversible offer to the politician (responder) to set entry at equilibrium levels n_B or $n_L(\delta)$ in exchange for political contributions denoted by respectively k_B and k_L . Coalitions are formed until there are no further gains from forming a additional group. Each citizen is represented by at most one representative.

At $t = 2$ the politician chooses the offer that maximises his utility, or simply allows free entry m . Citizens receiving finance set up a firm and produce one unit of final good. Under B representatives seek to illegally bribe the politician in exchange for entry of their coalition's members and under L representatives legally lobby for a favourable set of rules.

At $t = 3$ the market for the final good is open and its price, denoted by f , is determined. Consumers buy the final goods and political contributions are paid.

We do not take a stand on whether setting up either governance system $G = \{B, L\}$ is more costly. Both systems require implementation of the entry choice by the politician. Under B the identity of entrants needs to be controlled while under L the entry rule needs to be enforced. Moreover, in both cases loyalty of civil servants needs to be ensured, either through kickbacks or fear of punishment. Intuitively,

one can imagine that a larger and more costly bureaucracy is required under L to check compliance with the entry rule, but that assuring civil servants' loyalty is more costly under B . In the model we abstract from costs of running either B or L .

2.3.3 Citizens

Every citizen consumes both numeraire and final goods, and has utility from consumption

$$U_i = x_i + ay_i - \frac{1}{2}y_i^2 \quad (2.1)$$

where x_i and y_i are respectively the consumption of a numeraire and the final good produced by entrepreneurs.⁸ Here a scales the utility from consuming the final good. We assume that $a > 1$ such that there is demand for the final good and some entry is profitable. Individual income equals a constant endowment ω plus any firm profits π_i , which depend on entry n_G . We assume that disposable income is high enough to pay for the desired consumption of the final goods, which requires $\omega \geq \frac{1}{4}a^2$.⁹ The aggregate amount spent on the numeraire good is $x_i = \omega + \pi_i - y_i f$, with f the price of the final good. As entry is n_G , average profit is $E[\pi_i] = n_G \pi_e$.

Social welfare equals the total utility of consumption, defined as

$$s(n_G) = \sum^i U_i + k(n_G) \quad (2.2)$$

where $k(n)$ are the contributions paid to the politician by entrepreneurs. This social welfare function is free of distributional concerns and simply sums the utility of consumption of all agents, including the politician.¹⁰

⁸This utility function is widely used in the literature as it greatly simplifies the analysis. Krugman (1992) derives it in a political economy model in a general equilibrium framework.

⁹The individual income ω can not be used to start a firm, for example because it is received after firm creation.

¹⁰Whether or not we include political contributions in the definition of social welfare does not

A citizen i in the interest group of representative j makes profits of

$$\pi_i = \begin{cases} f - 1 - \frac{k_G}{q_j} & \text{if } i = e \text{ and } j \text{ wins} \\ f - 1 & \text{if } i = e \text{ while free-riding on competing offer} \\ 0 & \text{if } i = c \end{cases} \quad (2.3)$$

where we subtract the investment. We thus abstract from coordination problems by assuming that each group member in group j of size q_j pays an equal share of the contributions k_G . We now turn to the objective of representatives and then describe interest group formation in section 2.3.6.

2.3.4 Representatives

Under both B and L , each representative j forms a coalition of citizens q_j and offers the politician contributions $k_{G,j}$ in return for entry $n_{G,j}$. The representatives charge an (infinitesimal) fraction of the total profits of its coalition's members and thus maximise the expected sum of profits of their coalition's members

$$\Pi_j = \begin{cases} q_j(f - 1) - k_G & \text{if } j \text{ wins} \\ 0 & \text{otherwise} \end{cases} \quad (2.4)$$

We assume that each representative j can commit to paying political contributions after the politician has delivered the agreed upon policy.

change the paper's main results given that $\frac{\partial U_i}{\partial n_G} > 0$ and $\frac{\partial k}{\partial n_G} < 0$. For computational simplicity we use the Utilitarian social welfare by summing every citizen's consumption utility, thus including the politician.

2.3.5 Politician

The politician's utility is a weighted average of social welfare (with weight β) and political contributions (with weight $1 - \beta$) minus any legal cost. The parameter $\beta \in [0, 1]$ measures public accountability, as it scales up the political cost of opportunistic decisions which reduce social welfare. It is increasing in the ability of citizens to identify and challenge bad policies, for instance by reducing the chance of re-election. When there are no legal costs, namely under L , the politician maximises

$$U_p(n_L) = \beta s(n_L) + (1 - \beta)k(n_L) \quad (2.5)$$

In the case of direct control B , allocating loans to a coalition in exchange for a bribe also creates a legal risk of detection. The chance of detection and punishment is scaled by $\phi \in [0, 1]$ which denotes the strength of legal institutions which challenge illegal behaviour of politicians. We will refer to ϕ as a measure of legality. The politician is only legally liable if he is directly involved in setting entry.

We assume that the chance of detection and punishment increases in accountability and legality. Let $\beta\phi$ be the chance that the corrupt politician is exposed and sanctioned, in which case its payoff is zero.¹¹ So under B the politician maximises

$$U_p(n_B) = (1 - \beta\phi)[\beta s(n_B) + (1 - \beta)k(n_B)] \quad (2.6)$$

Our foundation for the reduced form legal costs $\beta\phi$ is as follows. Accountability β incorporates citizens' ability to both gather objective information about policies and sanction politicians taking welfare-reducing decisions. Legality ϕ is a measure of judicial independence and competence. Higher accountability β increases the likelihood that bribes are exposed in the first place while higher legality ϕ increases

¹¹Losses due to incurred legal punishment are not included in the definition of social welfare.

the chance of effective enforcement. Although some have argued that legality is also a political choice, we hold the view that it is a persistent institution that can be more or less independent from the executive. This independence is represented by ϕ .

2.3.6 Group formation

Under both mechanisms B and L , representatives $j \in 1, 2, \dots, J$ enter sequentially. Each representative j forms a different group (or coalition) containing a subset n_j of potential entrepreneurs. New representatives form groups as long as the group has a chance to receive preferential entry and generate positive profits, i.e. $\Pi_j > 0$. An equilibrium coalition structure is $Q = (q_1, q_2, \dots, q_J)$.¹²

Every group j offers political contributions $k_j(n_j) \geq 0$ in exchange for entry n_j leading to the contingent entry structure $N = (n_1, n_2, \dots, n_J)$ and contribution structure $K = (k_1, k_2, \dots, k_J)$. Therefore the offers made are represented by (N, K) .

The equilibrium coalition structure Q and offer structure (N, K) must be individually rational

$$\Pi_j \geq 0 \forall j \tag{2.7}$$

Additionally, Q is chosen anticipating (N, K) , and is incentive compatible

$$\max_{q_j} \Pi_j | q_l \forall l > j \tag{2.8}$$

because groups are formed sequentially. Offers (N, K) are also incentive compatible, such that

$$\max_{n_j, k_j} \Pi_j | n_l, k_l \forall l \neq j \tag{2.9}$$

¹²Our model thus allows for competing interest groups whereas Grossman and Helpman (1994), Mitra (1999) and Perotti and Volpin (2007) have only a single representative representing all entrepreneurs in a given industry. In our model every entrepreneur also has only one representative, but different representatives form disjoint interest groups and compete for the politician's support.

The offer of group j is chosen by the politician if it is individually rational (better than allowing free entry)

$$U_p(n_j) \geq U_p(m) \tag{2.10}$$

and incentive compatible (better than the offer of any other group)¹³

$$U_p(n_j) > U_p(n_l) \forall l \neq j \tag{2.11}$$

The equilibrium choice of entry and political contributions (n_B, k_B) or (n_L, k_L) for B and L respectively satisfies (2.10) and (2.11) given Q , which satisfies (2.8) and (2.9).

In words: to influence the politician more effectively *citizens may join a single interest group* offering political contributions in exchange for preferential market access for all of its members. These *interest groups are set up sequentially to maximise group profits*, anticipating subsequent group formation, intergroup competition and the resulting number and distribution of entrants. After reviewing the interest groups' offers, *the politician accepts the offer of a single interest group (or rejects all offers)* and implements the according policy.

2.4 Model solution

We solve using backward induction starting from the product market equilibrium, the group formation and accompanying offers under both direct control and regulation, and the initial political choice between direct control and regulation.

¹³For simplicity, we assume that the politician prefers the offer with the largest political contributions in case two offers result in equal utility. If two offers are exactly equal the politician randomly picks one.

2.4.1 Product market equilibrium

By maximising (2.1) with respect to x_i and y_i we find price $f(n_G) = a - n_G$ and $\pi(n_G) = m - n_G$. Entrepreneurs' income is

$$n_G(m - n_G) \tag{2.12}$$

which is maximised by limiting entry at $n_G = (1/2)m$. From (2.2) it follows that

$$s(n_G) = \omega + n_G(m - n_G) + \frac{1}{2}n_G^2 \tag{2.13}$$

which is maximised by allowing full entry $n_G = m$. Higher production leads to higher per citizen consumption at a lower unit price, an effect which outweighs lower firm profits. Politicians thus have to trade off higher social welfare and potentially higher private benefits.

2.4.2 Bribing B

With bribing, representatives try to bribe the politician to gain direct entry for members of their group. When accepting a bribe, the politician incurs legal costs.

Proposition 1. *Under bribing:*

- (a) *Representatives form groups of equal size containing citizens with any characteristic w_i .*
- (b) *All groups have an equal chance of entering.*

Proof. The politician chooses entrants irrespective of w_i , such that all citizens are equal in their search for preferential entry. As a result of this 'perfect competition', representatives maximise the politician's utility as long as $\Pi_j \geq 0$ to have a positive chance of winning. Note that because $m \leq \frac{1}{2} : \exists q_j, q_h \in Q : q_j \cap q_h = 0$. For

these disjoint groups j and h it holds that if $n_B = n_j : \pi_{e \in q_h} = 0$. As a result, representative h is willing to spend any potential profits on bribes to convince the politician. The reverse holds for representative j if $n_B = q_h$.

Thus, any group $l = j, h$ tries to outbid the other by maximising (2.6) subject to (2.7) by pledging all future profits as contributions to the politician.

Maximising U_p from (2.6) given (2.7) over n yields:

$$\max_{n_B} U_p(n_B) \text{ s.t. } \pi_e \geq 0 \tag{2.14}$$

resulting in

$$n_B = \frac{m}{2 - \beta} \tag{2.15}$$

with $\frac{\partial n_B}{\partial \beta} = \frac{m}{(2 - \beta)^2} > 0$.

The politician's and the representatives' individual rationality and incentive compatibility constraints are satisfied. Therefore the equilibrium level of entry is

$$n_B = n_j = \frac{m}{2 - \beta} \tag{2.16}$$

Given that all the groups' offers are exactly equal, the politician randomly picks one. □

Under bribing the politician can choose entrants independent of their characteristics. Because $n \leq m \leq \frac{1}{2}$, a minimum of two equally powerful groups are formed. Naturally the profits of a given group are zero if another group wins. To maximise their chance of winning, all groups have the same size q_j and offer the same pair (n_j, k_j) to maximise U_p as in (2.6). In equilibrium all the different groups have an equal chance of winning by offering all their profits to the politician as rents.

It is easy to see that the higher public accountability β , the higher entry n_B is, coming closer to the social optimum $n_B = m$. The utility difference from accepting

the bribe instead of implementing the social optimum, $U_B - \beta s(m)$, is decreasing in both β and ϕ .

2.4.3 Lobbying L

Under regulation representatives influence the politician's decision on investor protection δ . Given δ , only citizens with characteristics $w_i = 1 - \delta$ can become entrepreneur. As w_i is uniformly distributed entry is δm .

Proposition 2. *Under lobbying:*

(a) *Each entering representative seeks to attract the citizens with highest w_i not yet associated with an established group. Citizens with comparable w_i end up in the same group, because this reduces free-riding.*

(b) *The first representative always wins by forming a coalition of size n_L with those citizens with highest w_i , chosen such that all other groups can be outbid.*

Proof. Suppose that the first lobby, or strong lobby, contains the q_1 citizens with highest w_i and offers (n_1, k_1) . The second lobby, or the counterlobby, contains an optimal share of the remaining $m - q_1$ citizens and offers (n_2, k_2) with $n_2 = q_1 + q_2$ (as the second lobby can not block entry by q_1). From (2.11), the strong lobby needs to offer

$$k_1 = k_2 + \frac{\beta}{1 - \beta} [s(n_2) - s(n_1)] \quad (2.17)$$

to outbid the counterlobby.

If equilibrium outcome $n_L = n_1 \vee n_L = m$, then $\pi_{e \in q_2} = 0$. Therefore, the counterlobby offers all its potential profits to the politician, i.e. $k_2 = (n_2 - n_1)(m - n_2)$. To maximise the RHS of (2.17), $n_2 = \frac{m+n_1(1-\beta)}{2-\beta}$. Then, $\max_{n_1} \Pi_{q_1}$ as in (2.4) subject to (2.17) yields entry of

$$n_1 = n_L = \frac{1 + (2 - \beta)(1 - \beta)}{1 + 2(2 - \beta)(1 - \beta)} m \quad (2.18)$$

To show that this is the equilibrium we now prove that (i) the counterlobby is the biggest threat to the strong lobby, (ii) the strong lobby prefers to outbid the counterlobby instead of free-riding on its offer, (iii) entrepreneurs earn nonnegative profits and (iv) the politician prefers accepting lobbying contributions over implementing the social optimum.

(i) the counterlobby is the biggest threat to the strong lobby:

$$U_p(n_2) \geq U_p(m) \text{ and } U_p(n_2) \geq U_p(n_j) \forall j > 2$$

For the politician, $U_p(n_2) \geq U_p(m)$ if

$$\beta s(n_2) + (1 - \beta)k_2 \geq \beta s(m) \tag{2.19}$$

$$\Leftrightarrow 1 + \frac{(1 - \beta)^4(2 - \beta)}{[1 + 2(2 - \beta)(1 - \beta)]^2} \geq 1 \text{ for all } \beta \in [0, 1]$$

The counterlobby thus makes an offer superior to the social optimum.

The politician's utility from offer (n_j, k_j) with $k_j = n_j(m - n_j)$ is

$$U_p(n_j) = \beta s(n_j) + (1 - \beta)n_j(m - n_j) \tag{2.20}$$

Taking a derivative yields $\frac{\partial U_p(n_j)}{\partial n_j} = m - (2 - \beta)n_j \leq 0 \Leftrightarrow n_j \geq \frac{m}{2 - \beta}$. This condition is satisfied for $n_j \geq n_1 \geq \frac{m}{2 - \beta}$. Therefore, $U_p(n_2) \geq U_p(n_j) \forall j > 2$, i.e. representatives $j > 2$ never win.

Hence, by beating the counterlobby the IR-constraint in (2.10) and the IC-constraint in (2.11) are satisfied. Moreover, lobby groups $j > 2$ are 'irrelevant'.

(ii) the strong lobby prefers to outbid the counterlobby instead of free-riding on the counterlobby's offer:

$$[\pi_{e \in q_1} | n_L = n_1, k_1 > 0] > [\pi_{e \in q_1} | n_L = n_2, k_1 = 0]$$

which is necessary for the IR-constraint in (2.8).

We start this proof from the third lobby, then treat the counterlobby and finally

reach the strong lobby. The reason is that if the strong lobby free-rides the counterlobby needs to outbid the third lobby, its fiercest competitor. This third lobby has zero profits when not outbidding the counterlobby and is thus willing to spend all potential profits on lobbying. It maximises the threat to the counterlobby:

$$\max_{n_3} k(n_2) = (n_3 - n_2)(m - n_3) + \frac{\beta}{1 - \beta} [s(n_3) - s(n_2)] \quad (2.21)$$

yielding $n_3 = \frac{m + (1 - \beta)n_2}{2 - \beta}$.

Then, the counterlobby is formed by

$$\max_{n_2} (n_2 - n_1)(m - n_2) - k(n_2 | n_3) \quad (2.22)$$

resulting in $n_2 = \frac{3(1 - \beta + \beta^2)m + (1 - \beta)(2 - \beta)n_1}{1 + 2(1 - \beta)(2 - \beta)}$.

The strong lobby's size is determined to maximise its income

$$\max_{n_1} n_1(m - n_2) \quad (2.23)$$

which gives $n_1 = \frac{1}{2}m \Rightarrow n_2 = \frac{1}{2} \frac{2 + 3(1 - \beta)(2 - \beta)}{1 + 2(1 - \beta)(2 - \beta)} m \wedge n = \frac{2 + 3(1 - \beta)(2 - \beta)}{1 + 2(1 - \beta)(2 - \beta)} m$ such that $n_1 < n_2 \leq n_3 \leq m$.

When the strong lobby free-rides, it has profits of $\Pi_1 = n_1(m - n_2) = \frac{1}{4} \frac{(1 - \beta)(2 - \beta)}{1 + 2(1 - \beta)(2 - \beta)} m^2$.

This is smaller than the profits of the strong lobby by optimally outbidding the counterlobby, which are $\Pi_1 = \frac{1}{2} \frac{(1 - \beta)(2 - \beta)}{1 + 2(1 - \beta)(2 - \beta)} m^2$, thus twice as high.

This implies that the credible threat of the counterlobby to enter and lobby is sufficient for the first lobby to make an unbeatable offer to the politician.

(iii) entrepreneurs earn nonnegative profits:

From the calculations above we know that $\Pi_1 \geq 0$ such that also $[\pi_e(n_L = n_1)] \geq 0$ and the IR-constraint in (2.7) is satisfied.

(iv) the politician prefers accepting lobbying contributions over implementing

the social optimum, conform (2.10).

$$U_p(n_L) - U_p(m) = \beta s(n_L) + (1 - \beta)k(n_L) - \beta s(m) \quad (2.24)$$

$$\Leftrightarrow U_p(n_L) - U_p(m) = \frac{1}{2} \frac{(1 - \beta)^4(2 - \beta)}{[1 + 2(1 - \beta)(2 - \beta)]^2} m_2$$

Taking a derivative yields $\frac{\partial[U_p(n_L) - U_p(m)]}{\partial \beta} = -\frac{(1 - \beta)^3(21 - 27\beta + 12\beta^2 - 2\beta^3)}{[1 + 2(1 - \beta)(2 - \beta)]^3} m^2 < 0$. \square

Under lobbying the strongest citizens (highest w_i) join forces in the 'strong lobby', seeking the highest possible δ to block entry by their weaker counterparts to protect their profits. The strong lobby's members can enter under the rule d requested by any competing coalition (strong citizens can enter while excluding weak ones, while the reverse is impossible). The first representative chooses to represent the 'strongest' citizens and anticipates the best possible counteroffer, also during group formation. By admitting an additional, weaker citizen the strong lobby automatically deprives the counterlobby of its strongest potential member. In equilibrium the strong lobby marginally outbids the strongest counteroffer and wins the lobbying game, gaining exclusive entry for its members.¹⁴

As under B , higher accountability β aligns the politician's preferences more with social welfare such that entry n_L increases in β . The politician comes closer to the social optimum when β increases, as also shown by $\frac{\partial[U_p(n_L) - U_p(m)]}{\partial \beta} < 0$.

2.4.4 Comparing bribing and lobbying

This section compares entry n_G and the politician's utility $U_p(n_G)$ under the two bank governance systems B and L .

For $\beta \in [0, 1)$ we find that entry, or the size of the winning group, is lower under bribing B than under lobbying L . As a result of lower entry, firms' total

¹⁴Despite losing the lobbying game, the existence of the counterlobby indirectly increases the consumption of its members by inducing a larger strong lobby, greater entry and a lower price of the final good.

revenues are higher under B . In principle the politician prefers B to L , because larger discretion in choosing entrants under B allows extraction of larger political contributions. However, higher public accountability β and/or legality ϕ increases legal costs, and beyond some threshold induces a shift to regulation. Dashed lines refer to B and solid lines refer to L . Bold line segments are part of the equilibrium.

2.4.4.1 Entry

Proposition 3. *Entry is lower under bribing than under lobbying for $\beta \in [0, 1)$.*

Proof. $n_B = \frac{m}{2-\beta} \leq \frac{1+(2-\beta)(1-\beta)}{1+2(2-\beta)(1-\beta)}m = n_L \Leftrightarrow \beta \leq 1$, which holds. \square

2.4.4.2 Politician's utility

Ex ante, the politician chooses the governance system that results in the highest excess utility $U_p(n_G) - \beta s(m)$.¹⁵

Proposition 4. *The political rents appropriated by the politician are higher under B than under L for $\beta < 1$.*

Proof. For $\beta < 1$: $k(n_B) = n_B(m - n_B) > n_L(m - n_L) > k(n_L)$. The first inequality follows from $\frac{1}{2}m < n_B < n_L < m \Leftrightarrow \beta(2 - \beta) < 1$ for $\beta \in [0, 1)$. The second inequality readily follows from part (ii) of proof 2.4.3 lobbying. \square

Proposition 5. *Lobbying becomes more likely the higher public accountability β and legality ϕ .*

Proof. $U_p(n_B) > U_p(n_L) \Leftrightarrow \frac{1-\beta\phi}{2-\beta} - \beta > \frac{(1-\beta)^4(2-\beta)}{[1+2(2-\beta)(1-\beta)]^2}$
 $\Leftrightarrow \phi < \frac{1}{\beta} \left(1 - \beta(2 - \beta) - \frac{(1-\beta)^4(2-\beta)^2}{[1+2(2-\beta)(1-\beta)]^2} \right) = \phi^*$ with $\frac{\partial \phi^*}{\partial \beta} < 0$ \square

Figure 2.1: Excess utility for $m = \frac{1}{2}$ and $\phi = \frac{2}{3}$

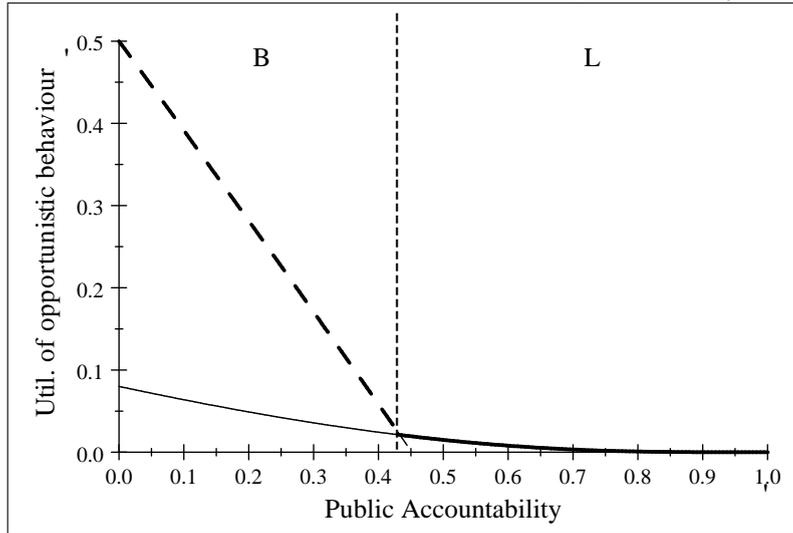


Figure 2.2: Excess utility for $m = \frac{1}{2}$ and $\phi = \frac{1}{4}$

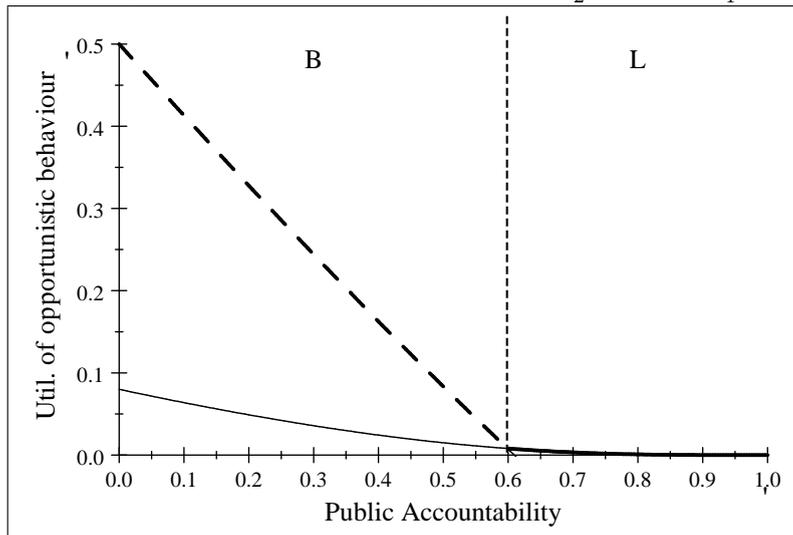
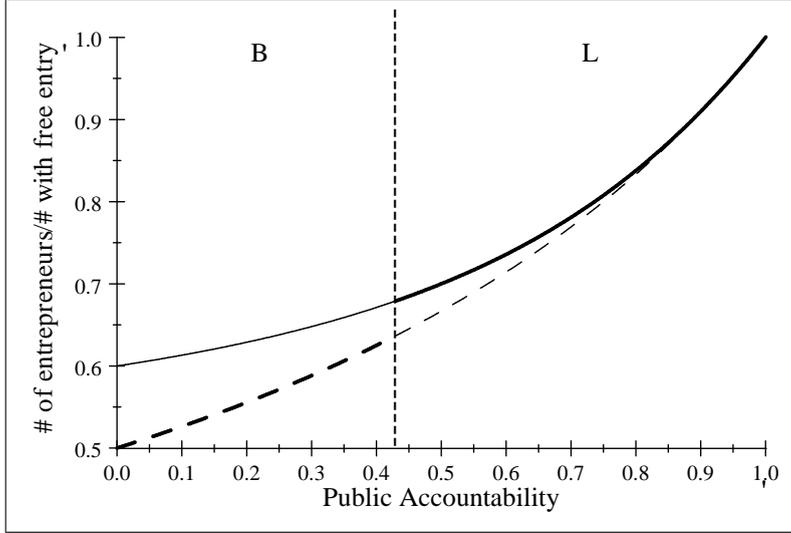


Figure 2.3: Entry in the basic model for $\phi = \frac{2}{3}$



2.4.4.3 Explanation

As shown in Figures 1 and 2, the politician prefers direct control for low public accountability β and legality ϕ . Greater β and ϕ raise legal costs until a threshold after which politicians prefer to be legally lobbied.

Depicting entry shares $((n_B)/m)$ and $((n_L)/m)$ as function of β for $\phi = \frac{2}{3}$ yields Figure 3. As shown before, entry n_G increases in β under both B and L . It lies between $n_B = \frac{1}{2}m$ for $\beta = 0$ where total firm income is maximised, and $n_B = n_L = m$ for $\beta = 1$ where the social optimum is implemented. Because the strong lobby weakens competition from other groups by increasing its size under L , the winning group is larger and entry is higher under L than under B .

¹⁵Note that $U_p(n_G) - \beta s(m)$ is an affine transformation of U_p because $\beta s(m)$ is independent of n .

2.5 Empirical illustration

Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002) argue that government officials erect high official entry barriers not to protect consumer welfare, but to be able to extract bribes from those trying to overcome these barriers. Their tollbooth argument is supported by the positive correlation between a country's entry barriers and a more unconstrained and independent executive, a less effective legislature or a more autocratic government.

This section uses the same data, dependent, explanatory and control variables as Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002). We simply strengthen their findings by reporting more results and adding instrumental variable regressions in an attempt to address potential reverse causality and the possibility that both entry barriers and institutions were determined at a country's creation (especially in case of ex-colonies).

The overview of all variables can be found in table 1. In short, the dependent variables are *the number of different procedures to follow, the time spent and the official costs* that a prospective entrepreneur officially needed to make to obtain a legal status for a start-up in 1999. Two measures proxy for political accountability β by measuring the ability of the executive to undertake action independently: *the executive de facto independence* and *the effectiveness of the legislature*. The last explanatory variable, *constraints on executive power*, measures a combination of political accountability β and legality ϕ , which we use as proxy for the costs of bribery $\beta\phi$. We control for *legal origin* or *GDP per capita in 1999*.

We use the following instruments:

- (i) *settler mortality*¹⁶, *latitude of the country's capital city* and *the country's*

¹⁶Depending on whether colonisers could comfortably survive in a colony's environment they either created institutions to 'mimic' home (Neo-Europes) or institutions that allowed for maximum extraction of resources with a limited number of people (extractive institutions). In non-colonised countries institutions were shaped by local inhabitants used to the local environment. In such

resource dependence as measures of the country's geographical features,

(ii) *ethnic, linguistic and religious fractionalisation of the population*,

(iii) *UN-diplomats' parking violations* and *social trust* as measures of culture.

These instrumental variables have been shown to affect political institutions (Acemoglu, Johnson and Robinson, 2001; Alesina, Devleeschauwer, Bjørnskov, 2008; Easterly, Kurlat and Wacziarg, 2003; Fisman and Miguel, 2008), but are unlikely to affect entry barriers directly. Therefore they address the issue of reverse causality. To rule out the possibility that entry barriers and institutions were jointly determined at a country's creation, we seek instruments that are independent of the European power that colonised a given country. The geographical features in (i) clearly satisfy this condition. Admittedly all colonisers did bring an additional ethnicity, language, religion and thus culture to their colonies, such that the instruments in (ii) and (iii) can be questioned. However, we believe that these measures have influenced political institutions mainly after independence. To mitigate such concerns we show that results are very similar for regressions using (i) and (ii) or (i) and (iii) as instruments. Finally, entry barriers might be affected by our instruments through (institutional) factors other than those incorporated here. However, because the creation or dismantlement of entry barriers is a political choice it seems natural to focus on insitutional variables that measure constraints on the political executive.

Table 2 contains descriptive statistics for all variables. Because we lack some data for settler mortality and social trust our sample is reduced in the IV-regressions. For each variable we report the descriptive statistics for both the largest and smallest sample used in the regressions. We find it reassuring that these samples do not differ significantly along any variable, except for a lower number of countries with

countries in- and outside Europe we set settler mortality to zero. The results remain the same if we set it to 15 per 1000 per year, based on mortality of British troops in Britain (Acemoglu, Johnson and Robinson, 2001).

Socialist legal origin in the small sample (significant at 8.1

Tables 3 and 4 show the results from OLS-regressions controlling for respectively legal origin and GDP per capita, partially redoing the work by Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002) in specification (1). Looking at both tables we conclude that there is a strong negative correlation between the number of procedures and the time it takes to open a business, and our variables for political accountability and legality. When investigating the official cost of opening a business in US-dollars and control for GDP per capita we do not find the same relation, due positive correlation between political institutions and GDP per capita.

In tables 5 and 6 we run the same regressions, now instrumenting our political/legal variables. These IV-regressions confirm the relationship between entry barriers one the one hand and political accountability and legality on the other. Greater political accountability and legality result in a smaller number of procedures and a smaller amount of time required to register a business. Using the Durbin-Wu-Hausman test of endogeneity reveals that the IV-regressions are warranted in these specifications. Again we do not have clear results for the cost of opening a business, with the instrumental variables approach mostly being rejected by the DWH-test. If anything, regression (6) in Table 6 indicates that official costs also decrease when political and legal institutions improve. As expected, countries with English legal origin have fewer procedures and require less time to set up a business. French and German legal origin are associated with a higher number of procedures. The official costs of opening a business are positively correlated with GDP per capita.

For the number of procedures and the time to open a business we perform robustness checks in tables 7, 8 and 9. In table 7 we truncate our sample from below, as both the number of procedures and the time spent are naturally bound at zero. In tables 8 and 9 we impute missing values using chained equations and rerun the OLS and IV regressions from tables 3 to 6. We only lose significance for the effectiveness

of the legislature and constraints on the executive in regressions (4) from table 9. All other results remain unchanged.

Our empirical illustration shows that higher political accountability and legality cause lower barriers to entry. The effects are always significant for the number of procedures and the time required to open a business. For the official costs to open a business results are much weaker.

2.6 Conclusion

This paper models the political choice between directly controlling entry to a market and setting up a rule that governs entry. In the former the politician freely selects entrants in exchange for illegal bribes, independent of people's characteristics. In the latter the politician drafts a rule in exchange for legal lobbying contributions, allowing everyone having characteristics above a certain threshold to enter. We show that being bribed over entry allows for greater extraction of political rents than being lobbied for strict rules. The reason is that rules regulating access create a free riding advantage for interest groups containing citizens with 'strong' characteristics. Such free-riding reduces competition among interest groups relative to the bribing case. In equilibrium, the politician prefers to be bribed and set relatively low entry for sufficiently low accountability and legality. Beyond a certain threshold, the illegality of bribes induces the politician to regulate entry and be legally lobbied, leading to a higher entry rate. We provide empirical support for our findings by showing that lower political accountability or legality leads to higher official entry barriers. These high entry barriers enable government officials to collect bribes from those wanting to circumvent them. In terms of our model, there is direct control of entry when accountability and legality are low. The model can be extended in many ways. It does not address issues like the differences between politicians and bureaucrats, entrepreneurs' unobservable characteristics, international competition

and attributes of specific markets. For example, in the next chapter we use a similar model to explain bank control, the distribution of bank finance and the stability of the banking sector.

2.7 Tables

<i>Table 1. Variable Description</i>			
	<i>Variable</i>	<i>Source</i>	<i>Description</i>
Panel A. Dependent Variables			
1	Number of procedures	Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002)	The number of different procedures that a start-up has to comply with in order to obtain a legal status, i.e., to start operating as a legal entity.
2	Time	Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002)	The time it takes to obtain legal status to operate a firm, in business days. A week has five business days and a month has twenty-two.
3	Cost as percentage of GDP per capita	Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002)	The cost of obtaining legal status to operate a firm as share of per capita GDP in 1999. It includes all identifiable official expenses (fees, costs of procedures and forms, photocopies, fiscal stamps, legal and notary charges, etc.). The company is assumed to have a start-up capital of ten times per capita GDP in 1999.

Panel B. Main Explanatory Variables			
4	Executive de facto independence	Jagers and Marshall (2000)	Index of 'operation (de facto) independence of chief executive'. Descending from 1 to 7 (1 = pure individual; 2 = intermediate category; 3 = slight to moderate limitations; 4 = intermediate category; 5 = substantial limitations; 6 = intermediate category; 7 = executive parity or subordination). Average of the years 1945 through 1998.
5	Effectiveness of legislature	The Cross-National Time-Series Data Archive www.databanks.siteshosting.net /www/main.htm	Index of the effectiveness of the legislature. Ascending scale from 1 to 4 (1 = no legislature; 2 = largely ineffective; 3 = partly effective; 4 = effective). Average of the years 1945 through 1998.
6	Constraints on executive power	Henisz (2001)	Index of constraints on the executive power based on the number of effective veto points in a country. Veto points include (1) an effective legislature (represents two veto points in the case of bicameral systems); (2) an independent judiciary; and (3) a strong federal system. Average of the years 1945 through 1998.
Panel C. Control Variables			
7	GDP Per capita	World Bank	Gross domestic product per capita in current U. S. dollars in 1999.
8	Legal Origin	La Porta, Lopez-de-Silanes, Shleifer and Vishny (1999)	Division of countries in English, French, German, Scandinavian and Socialist legal origin.

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Panel D. Instrumental Variables			
9	Settler Mortality	Acemoglu, Johnson and Robinson (2001)	Annual mortality rates of soldiers, bishops, and sailors stationed in the colonies between the 17th and 19th centuries per 1000 men (largely based on work of historian Philip Curtin).
10	Resource dependence	World Development Indicators	The product of unit resource rents and the physical quantities of energy (crude oil, natural gas, and coal), minerals (bauxite, copper, iron, lead, nickel, phosphate, tin, gold, and silver) and wood (in excess of natural growth).
11	Latitude	CIA Factbook	Latitude of a country's capital city.
12	Ethnic, Language and Religious Fractionalisation	Alesina, Devleeschauwer, Easterly, Kurlat and Wacziarg (2003)	The fractionalisation score in a country j is $1 - \sum s_{i,j}$ where $s_{i,j}$ is the share of a given group i in country j , that is one minus the Herfindahl index.
13	Parking Violations	Fisman and Miguel (2008)	Parking violations per UN-diplomat from Nov. 1997 till Nov. 2002, when stricter rules were introduced.
14	Social Trust	Bjornskov (2008)	Data on trust between individuals in a given country. Compiled using World Values Survey, the AfroBarometer, LatinoBarometre, the Asian and East Asian Barometers and the Danish Social Capital Project. The data are fully listed and described in Bjornskov (2008).

<i>Table 2. Descriptive Statistics</i>							
Our sample contains 85 countries from Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002). We report summary statistics for both the largest sample (N) in OLS-regressions and the smallest sample in IV-regressions. For the instruments we show summary statistics for the largest and smallest sample in IV-regressions. There is only a significant difference between the large and small sample for Socialist legal origin, which is more common in the large sample							
		<i>N</i>	<i>Mean</i>	<i>Median</i>	<i>Stand. dev.</i>	<i>Mini- mum</i>	<i>Maxi- mum</i>
Panel A. Bank Control Indexes							
1	Number of procedures	84	10.55	10.00	4.35	2.00	21.00
		60	10.48	10.00	4.47	2.00	20.00
2	Time	84	47.77	42.00	30.77	2.00	152.00
		60	46.62	40.50	31.29	2.00	152.00
3	Costs in US-dollar	83	1319.26	583.82	1673.14	11.59	7085.35
		60	1547.15	785.55	1766.88	11.59	7085.35
Panel B. Political Accountability							
4	Executive independence	84	4.32	3.64	1.78	1.57	7.00
		60	4.66	3.75	1.79	1.92	7.00
5	Effectiveness legislat ure	73	1.75	1.60	0.90	0.00	3.00
		60	1.78	1.59	0.93	0.00	3.00
6	Constraints exec. power	84	4.31	3.55	1.85	1.20	7.00
		60	4.62	3.75	1.90	1.59	7.00

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Panel C. Control Variables							
7	GDP/capita	84	8044.28	2760.00	10357.58	190.00	38530.00
	in \$ in 2001	60	9881.51	4180.00	11043.45	240.00	38530.00
8	English	84	0.27	0.00	0.45	0.00	1.00
	legal origin	60	0.28	0.00	0.45	0.00	1.00
9	French	84	0.38	0.00	0.49	0.00	1.00
	legal origin	60	0.43	0.00	0.50	0.00	1.00
10	Socialist	84	0.23	0.00	0.42	0.00	1.00
	legal origin	60	0.13*	0.00	0.42	0.00	1.00
11	Scandinavian	84	0.05	0.00	0.21	0.00	1.00
	legal origin	60	0.07	0.00	0.25	0.00	1.00
12	German	84	0.07	0.00	0.26	0.00	1.00
	legal origin	60	0.08	0.00	0.28	0.00	1.00

Panel E. Instrumental Variables							
13	Settler	78	116.31	0.00	406.90	0.00	2004.00
	mortality	60	95.41	8.55	278.35	0.00	2004.00
14	Latitude	78	0.36	0.39	0.20	0.01	0.71
		60	0.35	0.36	0.21	0.01	0.71
15	Resource	78	2.48	0.60	4.91	0.00	29.30
	dependence	60	2.60	0.65	4.89	0.00	29.30
16	Ethnic	78	0.40	0.40	0.25	0.00	0.93
	fractionalis.	60	0.40	0.39	0.27	0.00	0.93
17	Language	78	0.32	0.23	0.28	0.00	0.92
	fractionalis.	60	0.32	0.22	0.29	0.00	0.92
18	Religious	78	0.42	0.43	0.24	0.00	0.86
	fractionalis.	60	0.40	0.37	0.24	0.00	0.86
19	Parking	71	13.08	3.50	25.77	0.00	139.60
	violations	60	13.89	3.40	27.67	0.00	139.60
20	Social	71	27.92	24.68	13.90	5.77	64.27
	trust	60	28.96	26.26	14.83	5.77	64.27

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Table 3. Accountability, Legality and Entry Regulation: OLS

The dependent variables are the Log of number of procedures, the Log of time to open a business and the Log of cost to open a business (in US-dollar). We control for the legal origin with the omitted category being German legal origin.

<i>Accountability and Legality</i>		<i>Log number of procedures</i>	<i>Log time to open business</i>	<i>Cost over GDP/capita</i>
		(1)	(2)	(3)
Executive independence	Coefficient	-0.106***	-0.192***	0.270***
	P-Value	(0.000)	(0.001)	(0.002)
	R-squared	0.554	0.441	0.363
	Observations	84	84	83
Effectiveness legislature	Coefficient	-0.267***	-0.453***	0.518***
	P-Value	(0.000)	(0.000)	(0.005)
	R-squared	0.604	0.477	0.376
	Observations	73	73	72
Constraints on executive power	Coefficient	-0.093***	-0.173***	0.239***
	P-Value	(0.001)	(0.001)	(0.003)
	R-squared	0.541	0.433	0.354
	Observations	84	84	83
Controls for legal origin	English	Negative	Negative	Negative
	French	Insignificant	Insignificant	Insignificant
	Omitted: Socialist	Insignificant	Insignificant	Negative
	German LO Scandinavian	Negative	Insignificant	Negative

<i>Table 4. Accountability, Legality and Entry Regulation: OLS</i>				
The dependent variables are the Log of number of procedures, the Log of time to open a business and the Log of cost to open a business (in US-dollar). We control for Log GDP per capita in 1999.				
<i>Accountability and Legality</i>		<i>Log number of procedures</i>	<i>Log time to open business</i>	<i>Cost over GDP/capita</i>
		(1)	(2)	(3)
Executive independence	Coefficient	-0.125***	-0.191***	-0.149
	P-Value	(0.000)	(0.002)	(0.106)
	R-squared	0.318	0.321	0.399
	Observations	84	84	83
Effectiveness legislature	Coefficient	-0.330***	-0.438***	-0.437**
	P-Value	(0.000)	(0.002)	(0.044)
	R-squared	0.342	0.333	0.412
	Observations	73	73	72
Constraints on executive power	Coefficient	-0.105***	-0.164***	-0.135
	P-Value	(0.002)	(0.003)	(0.120)
	R-squared	0.297	0.309	0.398
	Observations	84	84	83
Control	GDP/capita	Negative	Negative	Negative

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Table 5. Accountability, Legality and Entry Regulation: IV

The dependent variables are the Log of number of procedures, the Log of time to open a business and the Log of cost to open a business (in US-dollar). We control for legal origin with the omitted category being German legal origin. The 'F-stat 1st' refers to the F-statistic of the first stage regression and the 'DWH' to the P-Value of the Durbin-Wu-Hausmann test of endogeneity of instrumented variables. The significance levels for the F-stat refer to a two-sided α of 1, 5 and 10 percent.

Panel A. Instrumenting for settler mortality, latitude, resource dependence and ethnic, language and religious fractionalisation.

<i>Accountability and Legality</i>		<i>Log number of procedures</i>	<i>Log time to open business</i>	<i>Cost over GDP/capita</i>
		(1)	(2)	(3)
Executive independence	Coefficient	-0.224***	-0.406***	0.328**
	P-Value	(0.000)	(0.000)	(0.027)
	Sargan stat.	0.926	0.480	0.218
	F-stat 1st	9.98*	9.98*	10.28*
	DWH	0.003***	0.002***	0.393
	Observations	78	78	77
Effectiveness legislature	Coefficient	-0.385***	-0.700***	0.548**
	P-Value	(0.000)	(0.000)	(0.025)
	Sargan stat.	0.911	0.406	0.111
	F-stat 1st	10.06*	10.06*	11.10*
	DWH	0.059*	0.024**	0.543
	Observations	67	67	66

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Constraints on executive power	Coefficient	-0.216***	-0.395***	0.292**
	P-Value	(0.000)	(0.000)	(0.037)
	Sargan stat.	0.763	0.464	0.190
	F-stat 1st	8.18*	8.18*	8.68*
	DWH	0.002***	0.002***	0.387
	Observations	78	78	77
Controls for legal origin	English	Negative	Negative	Negative
	French	Insignificant	Insignificant	Insignificant
Omitted:	Socialist	Negative	Insignificant	Negative
German LO	Scandinavian	Negative	Insignificant	Negative
Panel B. Instrumenting for settler mortality, latitude, resource dependence, social trust and UN-diplomats' parking violations				
<i>Accountability and Legality</i>		<i>Log number of procedures</i>	<i>Log time to open business</i>	<i>Cost over GDP/capita</i>
		(4)	(5)	(6)
Executive independence	Coefficient	-0.208***	-0.358***	0.260*
	P-Value	(0.000)	(0.000)	(0.057)
	Sargan stat.	0.641	0.685	0.459
	F-stat 1st	11.96**	11.96**	12.29**
	DWH	0.017**	0.009***	0.915
	Observations	71	71	70

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Effectiveness legislature	Coefficient	-0.370***	-0.636***	0.457*
	P-Value	(0.000)	(0.000)	(0.060)
	Sargan stat.	0.541	0.626	0.629
	F-stat 1st	11.26**	11.26**	11.72**
	DWH	0.084*	0.055*	0.801
	Observations	61	61	60
Constraints on executive power	Coefficient	-0.187***	-0.326***	0.238*
	P-Value	(0.000)	(0.000)	(0.069)
	Sargan stat.	0.317	0.427	0.551
	F-stat 1st	10.13*	10.13*	10.66*
	DWH	0.018**	0.015**	0.811
	Observations	71	71	70
Controls for legal origin Omitted: German LO	English	Negative	Negative	Negative
	French	Insignificant	Insignificant	Insignificant
	Socialist	Negative	Insignificant	Negative
	Scandinavian	Negative	Insignificant	Negative

Table 6. *Accountability, Legality and Entry Regulation: IV*

The dependent variables are the Log of number of procedures, the Log of time to open a business and the Log of cost to open a business (in US-dollar). We control for Log GDP per capita in 1999. The 'F-stat 1st' refers to the F-statistic of the first stage regression and the 'DWH' to the P-Value of the Durbin-Wu-Hausmann test of endogeneity of instrumented variables.

Panel A. Instrumenting for settler mortality, latitude, resource dependence and ethnic, language and religious fractionalisation.

<i>Accountability and Legality</i>		<i>Log number of procedures</i>	<i>Log time to open business</i>	<i>Cost over GDP/capita</i>
		(1)	(2)	(3)
Executive independence	Coefficient	-0.491**	-0.819**	-0.299
	P-Value	(0.028)	(0.036)	(0.446)
	Sargan stat.	0.898	0.708	0.193
	F-stat 1st	10.59	10.59	10.02
	DWH	0.011**	0.017**	0.713
	Observations	78	78	77
Effectiveness legislature	Coefficient	-1.127**	-1.662**	-1.321
	P-Value	(0.020)	(0.042)	(0.145)
	Sargan stat.	0.939	0.589	0.232
	F-stat 1st	15.17	15.17	14.36
	DWH	0.012**	0.039**	0.254
	Observations	67	67	66
Constraints on executive power	Coefficient	-0.498**	-0.849*	-0.512
	P-Value	(0.047)	(0.053)	(0.243)
	Sargan stat.	0.913	0.782	0.374
	F-stat 1st	9.43	9.43	8.89
	DWH	0.009***	0.013**	0.346
	Observations	78	78	77

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Control	GDP/capita	Insignificant	Insignificant	Positive
Panel B. Instrumenting for settler mortality, latitude, resource dependence, social trust and UN-diplomats' parking violations				
<i>Accountability and Legality</i>		<i>Log number of procedures</i>	<i>Log time to open business</i>	<i>Cost over GDP/capita</i>
		(4)	(5)	(6)
Executive independence	Coefficient	-0.379***	-0.557**	-0.543*
	P-Value	(0.008)	(0.021)	(0.088)
	Sargan stat.	0.909	0.642	0.294
	F-stat 1st	15.21	15.21	14.38
	DWH	0.025**	0.062*	0.139
	Observations	71	71	70
Effectiveness legislature	Coefficient	-0.896***	-1.210**	-1.294*
	P-Value	(0.012)	(0.041)	(0.083)
	Sargan stat.	0.869	0.866	0.472
	F-stat 1st	19.34	19.34	18.27
	DWH	0.030**	0.099*	0.144
	Observations	61	61	60
Constraints on executive power	Coefficient	-0.306**	-0.448**	-0.535*
	P-Value	(0.017)	(0.039)	(0.069)
	Sargan stat.	0.585	0.612	0.370
	F-stat 1st	13.47	13.47	12.81
	DWH	0.054*	0.119	0.098*
	Observations	71	71	70
Control	GDP/capita	Insignificant	Insignificant	Positive

<i>Table 7. Accountability, Legality and Entry Reg.: Truncated Log Pseudo-likelihood</i>					
The dependent variables are the Log of number of procedures and the Log of time to open a business, truncated at $\ln(0) = 1$. We control for the legal origin with the omitted category being German legal origin or for Log GDP per capita.					
<i>Accountability and Legality</i>		<i>Log number of procedures</i>		<i>Log time to open business</i>	
		<i>Control for LO</i>	<i>Control for GDP</i>	<i>Control for LO</i>	<i>Control for GDP</i>
		(1)	(2)	(3)	(4)
Executive independence	Coefficient	-0.083***	-0.105***	-0.144***	-0.150***
	P-Value	(0.001)	(0.001)	(0.002)	0.005
	Wald Stat.	74.02	22.70	36.76	20.38
	Observations	82	82	82	82
Effectiveness legislature	Coefficient	-0.217***	-0.287***	-0.347***	-0.348***
	P-Value	(0.000)	(0.000)	(0.001)	(0.004)
	Wald Stat.	86.89	25.54	37.03	19.40
	Observations	71	71	71	71
Constraints on executive power	Coefficient	-0.072***	-0.087***	-0.129***	-0.128***
	P-Value	(0.002)	(0.004)	(0.004)	(0.008)
	Wald Stat.	72.04	20.95	36.67	19.64
	Observations	82	82	82	82
Controls for legal origin Omitted: German LO	English	Negative		Negative	
	French	Insignificant		Positive	
	Socialist	Insignificant		Insignificant	
	Scandinavian	Negative		Negative	
Control	GDP/cap		Negative		Negative

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*Table 8. Accountability, Legality and Entry Regulation: OLS
Missing Values Imputed by Chained Equations*

The dependent variables are the Log of number of procedures and the Log of time to open a business. We control for the legal origin with the omitted category being German legal origin or for Log GDP per capita.

<i>Accountability and Legality</i>		<i>Log number of procedures</i>		<i>Log time to open business</i>	
		<i>Control for LO</i>	<i>Control for GDP</i>	<i>Control for LO</i>	<i>Control for GDP</i>
		(1)	(2)	(3)	(4)
Executive independence	Coefficient	-0.107***	-0.124***	-0.193***	-0.189***
	P-Value	(0.000)	(0.000)	(0.001)	0.002
	R-squared	0.560	0.324	0.447	0.327
	Observations	85	85	85	85
Effectiveness legislature	Coefficient	-0.241***	-0.245***	-0.398***	-0.335***
	P-Value	(0.000)	(0.002)	(0.001)	(0.007)
	R-squared	0.585	0.313	0.452	0.305
	Observations	85	85	85	85
Constraints on executive power	Coefficient	-0.094***	-0.104***	-0.173***	-0.163***
	P-Value	(0.001)	(0.002)	(0.001)	(0.004)
	R-squared	0.548	0.304	0.439	0.315
	Observations	85	85	85	85
Controls for legal origin Omitted: German LO	English	Negative		Negative	
	French	Insignificant		Insignificant	
	Socialist	Insignificant		Insignificant	
	Scandinavian	Negative		Insignificant	
Control	GDP/cap		Negative		Negative

Table 9. Accountability, Legality and Entry Regulation: IV
Missing Values Imputed by Chained Equations

The dependent variables are the Log of number of procedures, the Log of time to open a business and the Log of cost to open a business (in US-dollar). We control for legal origin with the omitted category being German legal origin. The 'F-stat 1st' refers to the F-statistic of the first stage regression and the 'DWH' to the P-Value of the Durbin-Wu-Hausmann test of endogeneity of instrumented variables. The significance levels for the F-stat refer to a two-sided α of 1, 5 and 10 percent.

Panel A. Instrumenting for settler mortality, latitude, resource dependence and ethnic, language and religious fractionalisation.

<i>Accountability and Legality</i>		<i>Log number of procedures</i>		<i>Log time to open business</i>	
		<i>Control for LO</i>	<i>Control for GDP</i>	<i>Control for LO</i>	<i>Control for GDP</i>
		(1)	(2)	(3)	(4)
Executive independence	Coefficient	-0.190***	-0.665*	-0.353***	-1.035*
	P-Value	(0.000)	(0.051)	(0.000)	(0.060)
	Sargan stat.	0.271	0.845	0.274	0.756
	F-stat 1st	9.46*	10.94*	9.46*	10.94*
	DWH	0.008***	0.002***	0.009***	0.005***
	Observations	85	85	85	85
Effectiveness legislature	Coefficient	-0.354***	-2.131	-0.656***	-3.085
	P-Value	(0.000)	(0.209)	(0.000)	0.224
	Sargan stat.	0.275	0.965	0.295	0.895
	F-stat 1st	12.06**	12.07**	12.06**	12.07**
	DWH	0.030**	0.001***	0.130	0.007***
	Observations	85	85	85	85

CHAPTER 2. TO BE BRIBED OR LOBBIED

Constraints on executive power	Coefficient	-0.186***	-0.757*	-0.348***	-1.221
	P-Value	(0.000)	(0.098)	(0.000)	(0.104)
	Sargan stat.	0.301	0.948	0.304	0.930
	F-stat 1st	7.76*	9.66*	7.76*	9.66*
	DWH	0.004***	0.001***	0.005***	0.002***
	Observations	85	85	85	85
Controls for legal origin	English	Negative		Negative	
	French	Insignificant		Insignificant	
	Omitted: Socialist	Negative		Insignificant	
	German LO Scandinavian	Negative		Insignificant	
Control	GDP/cap		Insignificant		Insignificant
Panel B. Instrumenting for settler mortality, latitude, resource dependence, social trust and UN-diplomats' parking violations					
<i>Accountability and Legality</i>		<i>Log number of procedures</i>		<i>Log time to open business</i>	
		<i>Control for LO</i>	<i>Control for GDP</i>	<i>Control for LO</i>	<i>Control for GDP</i>
		(1)	(2)	(3)	(4)
Executive independence	Coefficient	-0.193***	-0.350***	-0.369***	-0.524***
	P-Value	(0.000)	(0.004)	(0.000)	(0.009)
	Sargan stat.	0.110	0.338	0.418	0.513
	F-stat 1st	12.17**	15.48**	12.17**	15.48**
	DWH	0.003***	0.014**	0.002***	0.038**
	Observations	85	85	85	85

2.7. TABLES

Effectiveness legislature	Coefficient	-0.355***	-0.705***	-0.689***	-1.091**
	P-Value	(0.000)	(0.007)	(0.000)	(0.015)
	Sargan stat.	0.047**	0.212	0.360	0.466
	F-stat 1st	14.71**	17.43**	14.71**	17.43**
	DWH	0.021**	0.024**	0.003***	0.034**
	Observations	85	85	85	85
Constraints on executive power	Coefficient	-0.179***	-0.327**	-0.351***	-0.515**
	P-Value	(0.000)	(0.010)	(0.000)	0.016
	Sargan stat.	0.062*	0.220	0.344	0.468
	F-stat 1st	10.20*	13.50**	10.20*	13.50**
	DWH	0.003***	0.022**	0.001***	0.037**
	Observations	85	85	85	85
Controls for legal origin Omitted: German LO	English	Negative		Negative	
	French	Insignificant		Insignificant	
	Socialist	Negative		Insignificant	
	Scandinavian	Negative		Insignificant	
Control	GDP/cap		Insignificant		Insignificant

3

Bank ownership and financial stability

3.1 Introduction

We study how political structure influence financial stability. Until recently, systemic crises were seen mostly as a risk for emerging countries, undermined by weak private and public governance. The credit crisis of 2007-08 has altered this view, highlighting how the role of perverse incentives shaped by regulation need to be considered next to novel doubts on market rationality. Many observers concluded that political capture has led regulation to tolerate excess risk taking by intermediaries.¹

In our model the politicians control the allocation of decision rights over bank lending, in a context when regulatory oversight is ineffective and deposit insurance reduces market discipline. Whoever controls the bank thus has full discretion to assign loans and to set their terms. The assignment of control is the outcome of an explicit lobbying model, which offers predictions on state versus private bank control, the dispersion of private ownership and financial instability. These depend

¹Lobbying by industry has been cited as critical to weaken capital requirements under the Basel II regulatory process. Political pressure supported the massive expansion of subprime lending in the US (Igan, Mishra and Tressel, 2010; Rajan, 2010).

critically on political structure, and specifically political accountability.²

Our most interesting result is that instability does not decrease with improved political accountability, offering a complex view of institutional determinants of financial instability. The relationship is made complex by the shift of incentives in the transition to private bank ownership, and by the ability of special interests to lobby to limit competition, seeking to influence access to finance (Kroszner and Strahan, 1999; Rajan and Zingales, 2003).

Since crises are disruptive, greater accountability should induce politicians to contain instability more. The model shows why this may not happen. First, social welfare include bank efficiency, so when banks become more efficient they may be allowed to be riskier. Second, compressing risk taking incentives is hard in a context where regulation is weak. When social welfare includes entry, accountability increases entry and weakens solvency incentives.

In the basic model, credit is scarce and constrains entry, allowing entrepreneurs to earn rents. A single politician choose whether to allow private bank ownership, or to control lending directly through a (less efficient) state bank.³ Interest groups next lobby either to be assigned bank control, or to gain access to state bank loans. Bankers, whether private or state officials, assign loans and decide loan terms. In turn, loan terms determine how much collateral may be privately appropriated during production, and thus bank vulnerability in case of exogenous aggregate shocks. Bank distress disrupt production, damaging social welfare.

In summary, the politician faces the following choice: either incur inefficiency costs by directly controlling the banking sector and its stability, or reduce inefficiency by ceding bank control to an interest group, but losing direct influence over bank

²Accountability may be interpreted as the degree to which politicians need to satisfy citizen interests to remain in power. In a simple reduced form, it is the relative preference of politicians for social welfare over bribes, shaped by political institutions. Indeed, lobbying influence is constrained by electoral concerns and media scrutiny (Besley, Burgess and Prat, 2006; Perotti and Volpin, 2007).

³State bank inefficiencies are paid for by citizens through taxes and may arise due to for example overemployment (Cornett, Guo, Khaksari and Tehranian, 2009).

stability. The trade off is between private bank efficiency and greater risk taking, as captured private lending does not fully internalize the social costs of bank failure.

The politician prefers state banks when accountability is low, so that they can capture all profits as private benefits. He internalises instability more as accountability increases, so funnelling chosen by the state bank decreases with accountability. For intermediate accountability the politician chooses private bank control to reduce inefficiency costs. This leads to a jump in bank default risk, as private loans allow connected borrowers to benefit from funneling in the solvent state. As accountability increases further, the politician may contain funneling only by leaving more rents to the private sector. Private sector rents over political rents increase monotonically with accountability.

Our main result is that instability jumps discretely at the endogenous transition to private bank control. In an economy where political accountability is steadily rising over time, privatization will take place at a level of intermediate accountability. The politicians allows such a jump in risk taking because social welfare jumps reflecting the gain in efficiency by private ownership. In other words, in the political choice the benefit of increased efficiency allows politicians to get away with more instability at the transition point. The implication is that a higher incidence of banking crises should be observed in countries at the point where the state withdraws from direct control. Privatisation occurs *endogenously* at an institutional stage when regulation is quite vulnerable to capture by special interests.

An extension examines the choice over access to finance, endogenising the optimal size of lobbies. At the transition points, a small lobby secure control over the bank. As accountability rises, politicians seek larger lobbies to ensure higher entry, lower prices and higher social welfare, and bank ownership becomes more diffused. However, lower profits from higher entry increase risk incentives, a result reflected in the banking literature on charter value and risk taking. Interestingly, a high

accountability regime which produce broad access to finance also builds up its own cause of instability.

Our approach has clear limitations. To emphasize control issues, we rule out risk-controlling regulation. The assumption is stark, though in practice bankers enjoy broad discretion in lending choices. A specific feature of the model is its focus on bank default arising from aggregate financial shocks, rather than firm-level default to allow tractability. So its focus is on incentives for aggregate risk-taking, to describe large banking crises rather than risky lending by an individual bank. We do not seek to model bank competition, though it is natural to interpret concentrated bank ownership as a measure of bank entry. Finally, we abstract from depositor-based instability by imposing full deposit insurance. Our model also ignores issues such as the relative efficiency of entrants.

The paper proceeds as follows. Section 2 discusses existing evidence, section 3 presents the model, section 4 solves for the political choice over bank governance and financial instability, and section 5 looks at implications for access to finance. Section 6 illustrates some evidence supporting the predictions of the model, and section 7 concludes.

3.2 Evidence

What explains the balance of state and private control over finance, and the concentration of private control?

State influence has been declined steadily in history. Early bank were directly state owned (such as the king's granaries in Mesopotamia and Egypt), and mints run royal monopolies. Small private banks set up as partnerships existed for a long time in cities run by merchants, but in nation states they were allowed to incorporate only in the XIX century, limiting their scale. In fact, private bank licensing took place only once the monarchy lost its absolute power (North and Weingast, 1989).

For many decades, banks were owned by politically influential individuals, often members of Parliament.

State banks remain important nowadays, not just in developing countries (La Porta, Lopez-de-Silanes, Shleifer, 2002), and have become more frequent in developed economies as a result of bailouts of risk taking private banks. There is ample evidence of lower profitability of state banks (Megginson, 2005) which have higher personnel expense in East Asia (Cornett, Guo, Khaksari and Tehranian, 2009) and higher overall costs around the globe (Micco, Panizza and Yanez, 2007) and in Eastern Europe (Fries and Taci, 2005). Despite their high cost, politicians may support state banks as they can directly influence their lending. State banks favour politically connected firms, which receive larger loans and pay comparable interest rates to non-connected firms even though they are less likely to repay (Khwaja and Mian, 2005; Faccio, 2006 ; Claessens, Feijen and Laeven 2007), and increase during election years in developing countries (Dinc, 2005; Micco, Panizza and Yanez, 2007). A shift to private ownership creates private residual rights of control, reduces political interference and improve efficiency (Shleifer and Vishny, 1994; Perotti, 1995; Martimort, 2006). Yet the privatization decision itself is an endogenous political choice, and political influence does not stop under private ownership. When banks are privately owned, political choices on regulation still influence access to finance and stability indirectly. Special interests lobby to limit competition, capture access to finance and undermine newcomers (Kroszner and Strahan, 1999; Rajan and Zingales, 2003).⁴ Politicians influence the allocation of finance, via regulation or financial guarantees, reinforcing risk taking incentives for private owners. Mian, Sufi and Trebbi (2010) investigate representatives' voting on the American Housing Rescue and Foreclosure Prevention Act and the Emergency Economic Stabilization Act of 2008. They show that voting depends on mortgage related defaults in their

⁴Insiders may also lobby to weaken minority investor rights to protect private benefits (Bebchuk and Neeman, 2009), which has the effect of reducing access to finance for other firms.

constituency and campaign contributions from the financial services industry. This supports our setup in which the politician's utility depends on both social welfare and political contributions.

The model implies that shifts to private banks, and in particular with concentrated ownership, may be followed by crashes. Financial liberalisation has indeed often preceded financial instability and banking crises (Caprio and Klingebiel, 1996; Kaminsky and Reinhart, 1999; Weller, 2001). Interestingly, middle income developing countries in a phase of liberalisation, such as South East Asia, Chile, Mexico, Argentina, Russia, are those most affected by disruptive banking crises, at least until recently.⁵ Major banking crises, such as in Chile (1981), Mexico (1994), East Asia (1997) and Russia (1998) have been associated with massive default on connected lending by private banks, often family controlled (Perotti 2002; Claessens, Djankov and Klapper, 2003; La Porta, Lopez-de-Silanes and Zamarripa, 2003). In developing economies, banks controlled by industrial groups seem to be most risky, local independent banks less so, and foreign-owned banks are the least risky (Boubakri, Cosset, Fischer and Guedami, 2005).⁶

We contribute some illustrative evidence that state banks are most common in low accountability countries, family banks dominate at intermediate levels of accountability, while diffusely held banks dominate in high accountability countries. Changes in bank ownership in for example Hungary and Russia after the collapse of the Soviet Union are also consistent with our model. In Hungary minority stakes in state banks were sold strategically to foreign banks and many shares were simply put up for sale in an IPO. By contrast, privatisation of Russian banks occurred informally and was led by banks' management who determined future ownership structures. As a result, over the 1994-2001 period average domestic private and

⁵Here we presume that income is correlated with institutional quality such as accountability.

⁶A careful study of the Mexican experience shows higher non-repayment rates for connected loans in privatised banks (La Porta, Lopez and Zamarripa, 2003; Gomberg and Maurer, 2005).

foreign ownership were respectively 5.8 and 77.0 percent in Hungary and 76.5 and 10.2 percent in Russia (data from EBRD). After privatisation lending was at arm's length in Hungary. In Russia however there was almost exclusive connected lending to enterprises in which the given bank had a stake. Together with fiscal deficits and a too high fixed exchange rate this connected lending contributed to the severe Russian crisis in 1998. Interestingly, during the 1990s political accountability increased much more dramatically in Hungary than Russia. Over the same 1994-2001 period, Press Freedom from Freedom House averaged at 55 in Russia (54 in Jordan and 59 in Peru) and 31 in Hungary (29 in Greece and Israel). This example suggests that greater political accountability induced Hungarian politicians to create independent private banks whereas the privatisation process and the ensuing private banks were captured in Russia.

Direct evidence for our results is provided by Morck, Yavuz and Yeung (2009), who find that the share of nonperforming loans and the probability of a major banking crisis increase in the share of family owned banks, while the share of state banks is not significant.⁷ This may be surprising as endemic losses are common in state banks, yet large banking crises are not more common in state bank dominated systems.⁸ For a broad overview of the literature on politics and finance, see Haber and Perotti (2009).

Commentators stress that in many middle income countries such as Russia, Mexico, Russia and Korea, private control over the banking system was established in a phase of progressive democratization, but often without strengthening the regulatory framework (De Luna-Martinez, 2000). In Chile, politically connected business groups (*grupos*) captured control of privatized banks with borrowed money and engaged in self lending, causing a major bank collapse and renationalisation in the early

⁷They also find that the quality of capital allocation is decreasing in both the share of family and state owned banks.

⁸A lower incidence of distress for state banks may reflect hidden subsidies. Yet large scale crises cannot be easily be absorbed without economic disruption.

1980s in response to higher US rates. A very similar experience occurred in Mexico in the early 1990s and in Russia in 1998. During the Asian crisis, financial institutions connected to industrial groups or influential families continued to lend to connected firms (Claessens, Djankov and Klapper, 2003) which were subsequently to default (Bongini, Claessens and Ferri, 2001). In Korea, the crisis revealed massive concentration of lending risk in chaebol business groups (Campbell and Keys, 2002). It is telling that in China, arrests of corrupt bankers results in lower lending to connected firms, which lost market value as a result (Fan, Rui and Zhao, 2008). Our explanation is that bank privatization tends to happen at an institutional stage when regulatory capture is likely.

Liberalisation is more likely to be followed by banking crises in countries exhibiting poor transparency (Mehrez and Kaufmann, 2000), weak supervision (Noy, 2004) and weak regulatory institutions (Demirgüç-Kunt and Detragiache, 1999). This result should be put in perspective, as consumption volatility often falls in response to financial liberalisation, although the result is reversed in countries with worse political institutions (Bekaert, Harvey and Lundblad, 2006). A survey on bank privatisation suggests that it performed best in OECD-countries and, whenever banks were sold to foreign entities in transition economies (Megginson, 2005).

More accountable political institutions support financial stability, even after controlling for policy choices (Acemoglu, Johnson, Robinson and Thaicharoen, 2003). Recent work posits that, starting from financial repression, early steps in liberalisation make banking crises more likely while high degrees of liberalisation reverse this effect. The effect is strongest for behavioural liberalisation (removal of credit controls, high reserve requirements and interest rate controls) which is highly correlated with competitive liberalisation (removal of entry barriers, restrictions on banks' activities and restrictions on cross-border capital flows). In this work the effect of privatisation itself appears to be weak, possibly due to the lack of differentiation

between captured and diffusely held private banks (Angkinand, Sawangngoenyung and Wihlborg, 2010).

On the issue of entry, the recent political economy literature highlights how accountability increases entry into banking and enhances access to finance (Rajan and Zingales, 2003; Barth, Caprio and Levine, 2006). and diffused media circulation stimulate competition (Perotti and Volpin, 2007). A remarkable historical analysis of US states regulation shows it has been more favorable to access to finance and entry in states with better suffrage rights (Benmelech and Moskowitz, 2007).

To our knowledge our paper is the first to endogenously model bank control and to investigate the effects of bank control on financial stability and entry in the product market. In related work, Daniel and Jones (2007) model financial liberalisation as a simple reduction in the cost of capital. They show that such liberalization induces banks to finance more risky projects with lower returns, such that banks become more vulnerable and the chance of a crisis increases. Debande and Friebe (2004) study privatisation and model a similar political trade off between controlling a firm and its employment through state ownership and potentially profiting from stronger managerial incentives to restructure in private firms.

3.3 Model

A single politician chooses bank control C , being either state control S or private control P of a single bank. State ownership allows the politician to assign and set terms on individual loans, but imposes an inefficiency cost $E > 0$ borne by taxpayers. Alternatively, the politician can transfer bank control to the interest group who then effectuates lending. We use a setup in which a single lobby group represents all potential entrepreneurs (as in Perotti and Volpin; 2007) and seeks to grab control of privatised banks. Our results would be equivalent if the private surplus were divided between bankers and entrepreneurs forming 'the elite'. There

is a unit mass of citizens. Each citizen i can become entrepreneur e and produce a single unit of final good by investing an amount I , resulting in a profit of $\pi_{e,C}$. We define n_C as the fraction of citizens who receive a loan and become entrepreneur e , while the residual set $1 - n_C$ remain consumer c . We first assume n_C to be exogenous and endogenise it in an extension.

The loans are secured by a pledge on the investment good I , being the only assets available. Loan contracts may enable some funneling of collateral during production. Specifically, let $\theta_C \in [0, 1]$ denote the fraction of collateral which may be diverted, reducing the loan repayment value to $(1 - \theta_C)I$. The diverted funds $\theta_C I$ are added to the income of the entrepreneur involved.

Once loans are assigned, but before production takes place, the bank experiences an exogenous shock ε drawn from a uniform distribution over $[0, 1]$. As a reduced form, the bank faces distress whenever $\theta_C > \varepsilon$, implying a default probability of θ_C . The ease with which to seize collateral effectively determines the value of the bank's assets. Higher funneling reduces the value of the bank's loan portfolio, weakens its balance sheet and thus lowers its resilience to the exogenous shock. Upon distress, the bank recalls all loans. As this disrupts production, there is no output and no contributions are paid to the politician. In our model banks enjoy deposit insurance and are therefore able to raise funding for any required amount of investment $n_C I$. This deposit insurance is funded by the same lump-sum tax on all citizens.

3.3.1 Timing

At $t = 0$ the politician determines bank control $C = \{S, P\}$. Under S , banks incur an inefficiency cost E , funded by citizens in the last period.

At $t = 1$ the politician grants access to finance (under S) or control over the bank (under P) to n_C citizens in exchange for compensation k_C .

At $t = 2$ the bank raises $n_C I$ and grants n_C loans of size I . Borrowers invest I

in a productive asset. The terms of the loan defines how firmly the asset is pledged as collateral, and thus the share $\theta_C \in [0, 1]$ of asset value which can be diverted by entrepreneurs during production at $t = 4$.

At $t = 3$ nature draws ε from a uniform distribution with support $[0, 1]$. The bank defaults and recalls all loans when $\theta_C > \varepsilon$, so with probability θ_C . Collateral is liquidated at a cost $l > 0$.⁹

At $t = 4$, if production is not disrupted, entrepreneurs produce and funnel $\theta_C I$.

At $t = 5$ citizens receive their endowment ω , incur inefficiency cost E under state control, buy the final good (if available) and spend their remaining income on the numeraire good. Deposit insurance covers any bank shortfall. Entrepreneurs make their loan payment $(1 - \theta_C)I$ to the bank and pay promised political contributions k_C is paid.

3.3.2 Utility

A fraction $1 - n_C$ of citizens is consumer c while a fraction n_C is entrepreneur e . Both types $i = c, e$ consume numeraire and final goods and have utility under bank governance structure $C = \{S, P\}$ of

$$U_{i,C} = x_{i,C} + ay_i - \frac{1}{2}y_i^2 \text{ for } i = c, e \quad (3.1)$$

where x_i and y_i are respectively the consumption of a single numeraire and a single final good and a is the strength of demand, with $a > I$.¹⁰ Individual income equals a constant endowment ω plus any firm profits $\pi_{e,C}$. Therefore, in case of solvency the average citizen's consumption of the numeraire good under S is $x_{i,S} = \omega - y_i f + n_C \pi_{e,S} - E - \theta_S n_S I$, where f is the price of the final good. In case of default it is

⁹Note that because production is disrupted and assets repossessed, the potential diversion θ_C does not take place.

¹⁰This utility function is widely used in the literature as it greatly simplifies the analysis. Krugman (1992) derives it in a political economy model in a general equilibrium framework.

reduced to $x_{i,S} = \omega - E - l = U_{i,S}$. The consumption of the numeraire good under P has the same functional form, only without inefficiency costs E .

For tractability we use a Utilitarian social welfare. It is the sum of the consumption utilities of consumers, entrepreneurs and the politician, that is

$$s_C = (1 - n_C)E[U_{e,C}] + n_C E[U_{e,C}] + E[\pi_{p,C}] \quad (3.2)$$

where $\pi_{p,C}$ are the expected political contributions given governance structure $C = \{S, P\}$. We use expectations because banks may default and production be interrupted. Other social welfare functions will not change the paper's main results as long as $\frac{\partial s_C}{\partial n_C} > 0$ and $\frac{\partial \pi_{p,C}}{\partial n_C} < 0$.

Let the weight $\beta \in [0, 1]$ represent the degree of political accountability, which relates to the sensitivity of the politician to social welfare. The politician's utility is a weighted average of social welfare (with weight β) and political contributions (with weight $1-\beta$):

$$U_{p,C} = \beta(s_C - \omega) + (1 - \beta)\pi_{p,C} \quad (3.3)$$

where s_C and Social welfare does not include endowment ω as it is consumed independent of political choices or the production level.

We now derive the functional representation of consumers' and entrepreneurs' utility, social welfare and the politician's utility under state banking S and private banking P based on the timeline and equations (3.1), (3.3) and (3.2).

3.3.3 Product market equilibrium

Maximising (3.1) with respect to x_i and c_i results in demand $c_i = a - f$. Supply n equals demand at a price $f = a - n$, and firm income is $f - I$. We define m as the level of entry for which income is zero, such that $m = a - I$. If banks were to grant loans to all projects with positive net present value, entry would be m .

We assume throughout the whole paper that disposable income $\omega \geq \max\{\frac{1}{2}m(a - \frac{1}{2}m) + E, mI + E\}$. This condition ensures that the endowment is large enough to fund the costs of state banks E as well as consumers' demand for final goods costing a maximum of $\frac{1}{2}m(a - \frac{1}{2}m)$ (if entry is minimal and equal to $\frac{1}{2}m$ and price equals $a - \frac{1}{2}m$) in case of solvency *or* maximum costs of deposit insurance mI in case bank default.

3.3.3.1 Consumers

After substituting the result above in (3.1) consumer's utility under S equals

$$U_{c,S} = \begin{cases} \omega + \frac{1}{2}(n_S)^2 - E - \theta_S n_S I & \text{when the bank is solvent} \\ \omega - E - l & \text{when the bank defaults} \end{cases} \quad (3.4)$$

where $\frac{1}{2}(n_S)^2$ is the social benefit of consuming the final good, E the fiscal cost of state bank inefficiency and $\theta_S n_S I$ the cost of deposit insurance due to resource diversion. The expected utility of a consumer under S is

$$E[U_{c,S}] = \omega + (1 - \theta_S) \frac{1}{2}(n_S)^2 - E - \theta_S l - (1 - \theta_S) \theta_S n_S I \quad (3.5)$$

Under P , citizens do not face costs E such that their utility is

$$U_{c,P} = \begin{cases} \omega + \frac{1}{2}(n_P)^2 - \theta_P n_P I & \text{when the bank is solvent} \\ \omega - l & \text{when the bank defaults} \end{cases} \quad (3.6)$$

with expectation

$$E[U_{c,P}] = \omega + (1 - \theta_P) \frac{1}{2}(n_P)^2 - \theta_P l - \theta_P (1 - \theta_P) n_P I \quad (3.7)$$

3.3.3.2 Entrepreneurs

An entrepreneur makes profits of

$$\pi_{e,C} = \begin{cases} f - I - \frac{k_C}{n_C} + \theta_C I & \text{when the bank is solvent} \\ 0 & \text{when the bank defaults} \end{cases} \quad (3.8)$$

where $\frac{k_C}{n_C}$ is the political compensation paid per entrepreneur. Using $f = a - n$ and $m = a - I$, expected profits per entrepreneur are

$$E[\pi_{e,C}] = (1 - \theta_C) \left(m - n_C - \frac{k_C}{n_C} + \theta_C I \right) \quad (3.9)$$

Because entrepreneurs simply spend their firm's profits on the numeraire good, their utility is

$$U_{e,C} = U_{c,C} + \pi_{e,C} \quad (3.10)$$

3.3.3.3 Politician

The politician p gets private benefits of

$$\pi_{p,C} = \begin{cases} k_C & \text{when the bank is solvent} \\ 0 & \text{when the bank defaults} \end{cases} \quad (3.11)$$

such that

$$E[\pi_{p,C}] = (1 - \theta_C) k_C \quad (3.12)$$

3.3.3.4 Social welfare

Using (3.5), (3.9) and (3.12) social welfare is as in (3.2) becomes

$$E[s_S] = \omega + (1 - \theta_S) \left[\frac{1}{2}(n_S)^2 + n_S(m - n_S) \right] - E - \theta_S l \quad (3.13)$$

under S and using (3.7), (3.9) and (3.12) we find

$$E[s_P] = \omega + (1 - \theta_P) \left[\frac{1}{2}(n_P)^2 + n_P(m - n_P) \right] - \theta_P l \quad (3.14)$$

under P .

3.3.3.5 Politician's utility

From (3.3), (3.12) and (3.13) we find the politician's utility under S

$$E[U_{p,S}] = (1 - \theta_S) \left\{ \beta \left[\frac{1}{2}(n_S)^2 + n_S(m - n_S) \right] + (1 - \beta)k_S \right\} - \beta(E - \theta_S l) \quad (3.15)$$

Under P we require (3.3), (3.12) and (3.14) to find

$$E[U_{p,P}] = (1 - \theta_P) \left\{ \beta \left[\frac{1}{2}(n_P)^2 + n_P(m - n_P) \right] + (1 - \beta)k_P \right\} - \beta\theta_P l \quad (3.16)$$

3.4 Bank control and instability

We compute the choice of funneling θ_C at $t = 2$ and compensation k_C at $t = 1$ for state and private banking. In this section we assume that entry is exogenous and set $n_S = n_P = n$.

3.4.1 State banking

Under state banking the politician sets funneling θ_S directly. Therefore, the politician does not need to provide incentives to private bank owners and can demand any k_S subject to $0 \leq k_S \leq n(m - n) + \theta_S nI$, hence satisfying the entrepreneurs' participation constraint.¹¹

Proposition 6. *Under state banking*

(a) *demanded political compensation equals firms' total income, that is $k_S^* = n(m - n) + \theta_S^* nI$.*

(b) *funneling θ_S^* is decreasing in political accountability β , as long as it is non zero.*

Proof. The politician solves

$$\begin{aligned} & \max_{\theta_S, k_S} U_{p,S} \\ & \text{s.t. } 0 \leq k_S \leq n(m - n) + \theta_S nI \\ & \quad 0 \leq \theta_S \leq 1 \end{aligned} \tag{3.17}$$

which yields

$$k_S^* = n(m - n) + \theta_S nI \tag{3.18}$$

and

$$\theta_S^* = \max \left\{ \frac{1}{2} - \frac{n[2m - (2 - \beta)n] + 2\beta l}{4(1 - \beta)nI}, 0 \right\} \tag{3.19}$$

Funneling θ_S^* satisfies $\frac{\partial \theta_S^*}{\partial \beta} \leq 0$, $\frac{\partial \theta_S^*}{\partial I} > 0$, $\frac{\partial \theta_S^*}{\partial m} \leq 0$, $\frac{\partial \theta_S^*}{\partial n} \geq 0$ and $\frac{\partial \theta_S^*}{\partial l} < 0$.

¹¹Because all citizens are the same and $m < \frac{1}{2}$, there is 'perfect competition' between lobby groups for access to finance. In an earlier version of this paper we show that it is optimal for sequentially entering lobbyists to form maximise the politician's utility when choosing group size and contributions. Failing to do so enables another group to make a marginally better offer and gain preferential access to finance with certainty. Perotti and Vorage (2009) also formalise this argument when discussing direct control.

The total compensation for the politician under state banking is

$$k_S^* = \begin{cases} n(m-n) + \left\{ \frac{1}{2} - \frac{n[2m-(2-\beta)n+2\beta l]}{4(1-\beta)nI} \right\} nI & \text{for } \theta_S^* > 0 \\ n(m-n) & \text{for } \theta_S^* = 0 \end{cases} \quad (3.20)$$

□

Under S the politician extracts all the entrepreneurs' profits and chooses funneling optimally. The size of funneled funds falls over accountability β , because its utility falls over β and bank default has a greater political cost the larger β . When β is high enough, θ_S^* can even drop to zero such that no funds are funneled from state banks. The total political compensation k_S^* is directly related to θ_S^* and thus decreases over β until θ_S^* reaches zero, after which it stabilises at $n(m-n)$.

3.4.2 Private banking

Under private banking the lobbyist controls funneling θ_P and the politician is able to choose any $k_P \leq n(m-n) + \theta_P nI$.

Proposition 7. *Under private captured banking*

(a) *political compensation is smaller than firms' total income, that is $k_P^* < n(m-n) + \theta_P^* nI$.*

(b) *funneling θ_P^* and compensation k_P^* are decreasing in β , as long as they are non zero.*

Proof. At $t = 2$, the lobbyist chooses funneling θ_P to maximise total profits given k_P^* :

$$\begin{aligned} \max_{\theta_P} U_{e,P} &= E[\pi_{e,P}] \\ \text{s.t. } 0 &\leq \theta_P \leq 1 \end{aligned} \quad (3.21)$$

such that

$$\theta_P^* = \frac{n(I - m + n) + k_P}{2nI}$$

At $t = 1$ the politician chooses k_P , anticipating future funneling by private bankers:

$$\begin{aligned} & \max_{k_P} U_{p,P} \\ & \text{s.t. } 0 \leq k_P \leq n(m - n) + \theta nI \end{aligned} \quad (3.22)$$

After some algebra this results in

$$k_P^* = \max \left\{ n(m - n) - \left\{ \frac{n[2m - (2 - \beta)n] + 2\beta l}{4(1 - \beta)nI} - \frac{1}{2} \right\} nI, 0 \right\} \quad (3.23)$$

$$\theta_P^* = \begin{cases} \max \left\{ \frac{3}{4} - \frac{n[2m - (2 - \beta)n] + 2\beta l}{8(1 - \beta)nI}, 0 \right\} & \text{for } k_P^* > 0 \\ \max \left\{ \frac{I - m + n}{2I}, 0 \right\} & \text{for } k_P^* = 0 \end{cases} \quad (3.24)$$

□

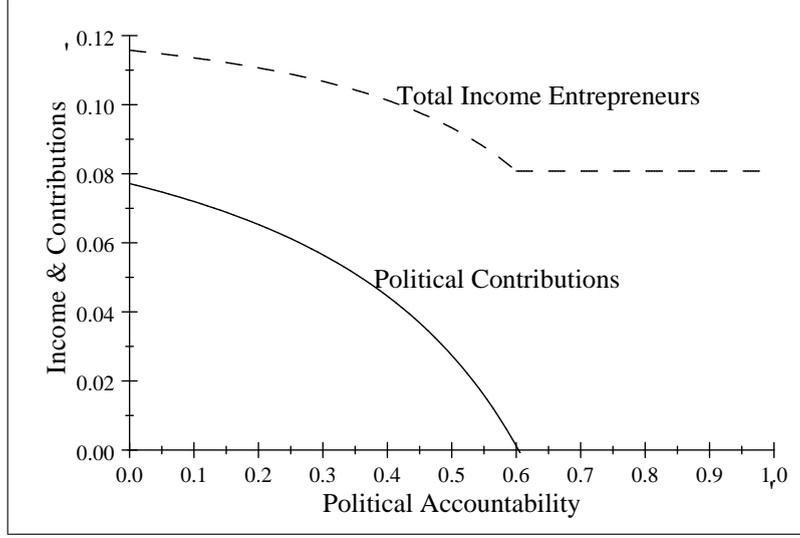
The main difference between S and P is that now the politician now 'leaves money on the table' when demanding political contributions. Leaving rents to entrepreneurs reduces funneling, as they lose exactly these rents upon default. Contributions k_P^* and entrepreneurs' income $n(m - n) + \theta_P^* nI$ are depicted in Figure 1. For large enough β compensation k_P^* falls to zero. For such β funneling and the entrepreneurs' profits stabilise.¹²

3.4.3 Choice of bank governance

The politician compares his utility under state and private banking. In figures 2 till 7 we depict the politician's utility and funneling for $m = \frac{1}{2}$, $n = \frac{3}{8}$, $I = \frac{1}{3}$ and $E = \frac{1}{10}$. For costs l we show the results for $l = 0$ and $l = \frac{1}{10}$. The dashed line refers

¹²The extension with endogenous entry shows that at such a threshold politicians choose to limit entry, to maintain private rents in solvent times.

Figure 3.1: Income and contributions for $m = \frac{1}{2}, I = \frac{1}{3}$ and $l = 0$.



to state banking S and the solid black line to private banking P . Bold line segments are part of the equilibrium.

The politician prefers S for low enough β and E , as depicted in figure 2. Figure 3 shows that when costs l are positive and default is hence more costly, control over funneling remains in state hands for higher accountability.

Proposition 8. *Political contributions are never lower under S than under P .*

Proof. Subtracting (3.23) from (3.20) we find the difference in rents

$$k_S^* - k_P^* = \begin{cases} 0 & \text{for } \theta_S^* > 0 \wedge k_P^* > 0 \\ \left\{ \frac{n[2m - (2-\beta)n] + 2\beta l}{4(1-\beta)nI} - \frac{1}{2} \right\} nI & \text{for } \theta_S^* = 0 \wedge k_P^* > 0 \\ n(m - n) & \text{for } \theta_S^* = 0 \wedge k_P^* = 0 \end{cases} \quad (3.25)$$

□

Political compensation is highest under S and always positive, because the politician always extracts $k_S^* = n(m - n) + \theta_S^* nI$. Under P , the politician limits his request

Figure 3.2: Utility for $m = \frac{1}{2}, n = \frac{3}{8}, I = \frac{1}{3}, E = \frac{1}{10}$ and $l = 0$.

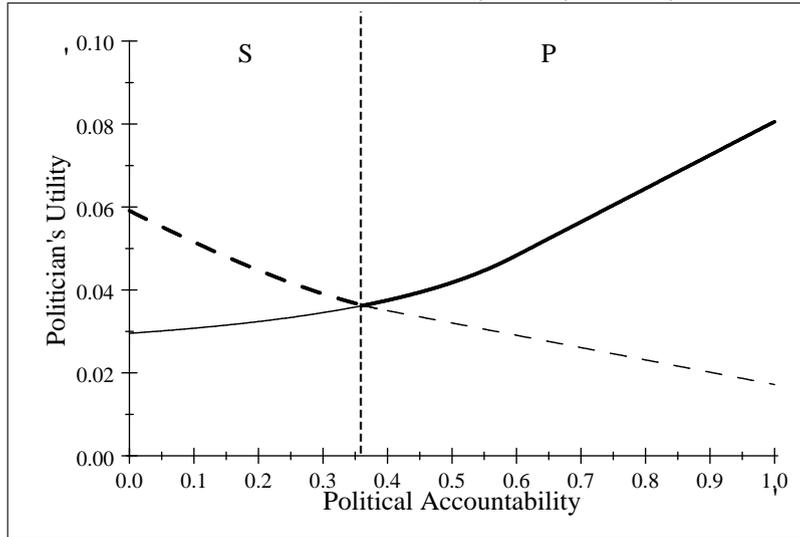
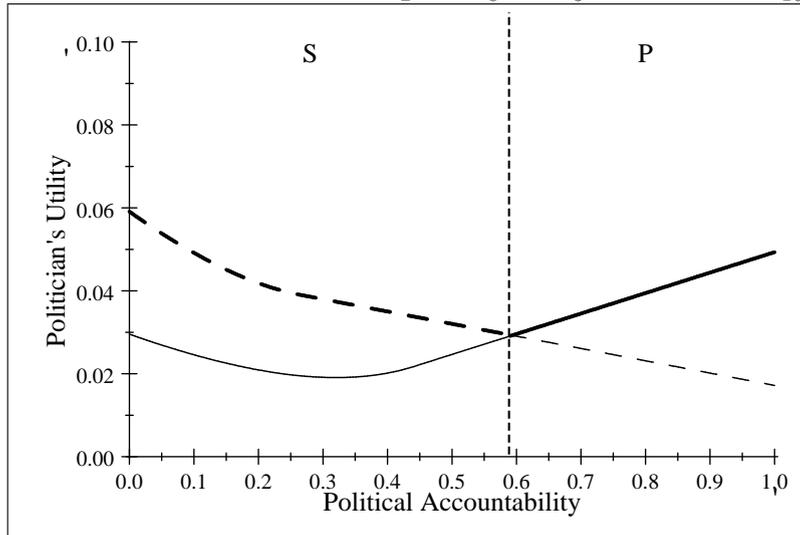


Figure 3.3: Utility for $m = \frac{1}{2}, n = \frac{3}{8}, I = \frac{1}{3}$ and $E = l = \frac{1}{10}$.



3.4. BANK CONTROL AND INSTABILITY

Figure 3.4: Rents for $m = \frac{1}{2}, n = \frac{3}{8}, I = \frac{1}{3}, E = \frac{1}{10}$ and $l = 0$.

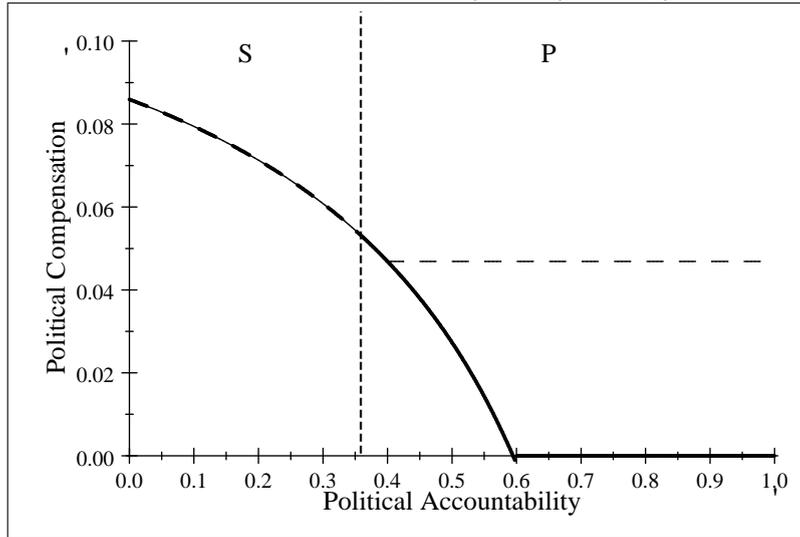


Figure 3.5: Rents for $m = \frac{1}{2}, n = \frac{3}{8}, I = \frac{1}{3}$ and $E = l = \frac{1}{10}$.

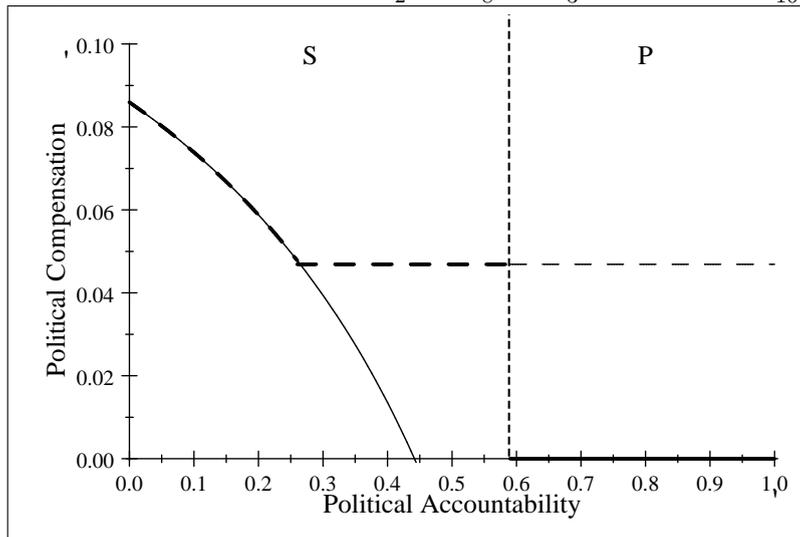
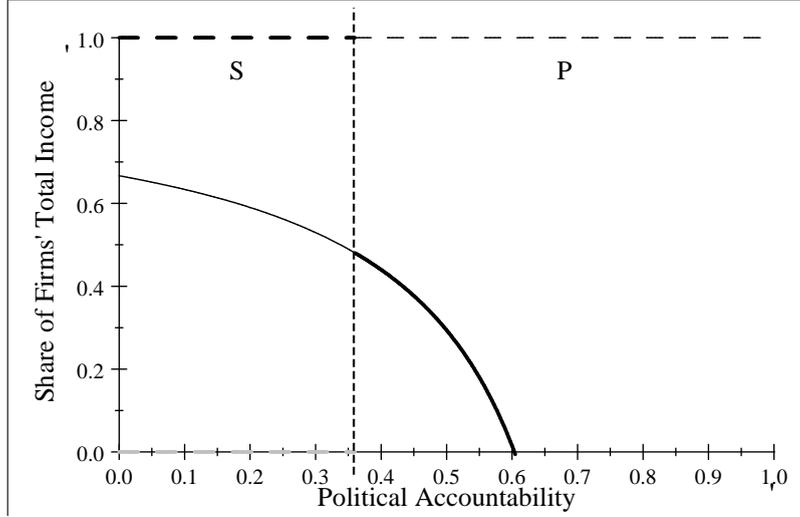


Figure 3.6: Sharing rents for $m = \frac{1}{2}, n = \frac{3}{8}, I = \frac{1}{3}, E = \frac{1}{10}$ and $l = 0$.



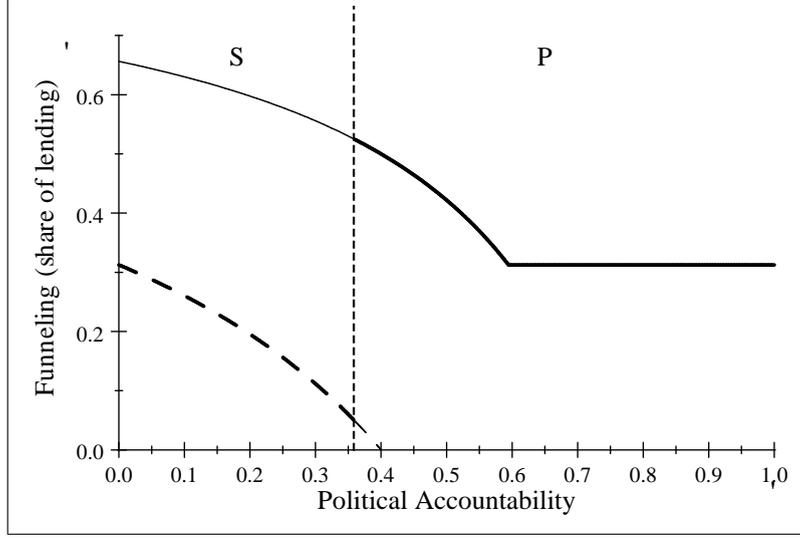
k_P^* in an effort to limit θ_P^* . When repossession costs l are low enough as in figure 4 (or inefficiency cost E is high enough) the transition from S to P occurs at low accountability β such that political compensation does not fall upon privatisation. When l is high however (figure 5), privatisation happens at higher β and political contributions fall.

Proposition 9. *The share of firms' total income appropriated by the politician decreases in political accountability, as long as it remains positive.*

Proof. The results follows from the politician choosing S for low and P for high accountability as depicted in Figure 5, and k_S^* being equal to firms' total income while the share of k_P^* in firms' total income is smaller and decreases in β . See equations (3.20) and (3.23). \square

Figure 6 depicts the share of firms' total income appropriated by the politician under S and P . Income shifts towards entrepreneurs upon the transition from S to P even when $l = 0$ and the transition occurs at low accountability β .

We now present our main result

Figure 3.7: Funneling for $m = \frac{1}{2}, n = \frac{3}{8}, I = \frac{1}{3}, E = \frac{1}{10}$ and $l = 0$.


Proposition 10. *There is at least as much funneling and instability under P than under S .*

Proof. From (3.19) and (3.24) it follows that

$$\theta_P^* - \theta_S^* = \begin{cases} \frac{1}{4} + \frac{n[2m - (2-\beta)n] + 2\beta l}{8(1-\beta)nI} & \text{for } \theta_S^* > 0 \wedge k_P^* > 0 \\ \max\left\{\left\{\frac{3}{4} - \frac{n[2m - (2-\beta)n] + 2\beta l}{8(1-\beta)nI}\right\}nI, 0\right\} & \text{for } \theta_S^* = 0 \wedge k_P^* > 0 \\ \max\left\{\frac{I-m+n}{2I}, 0\right\} & \text{for } \theta_S^* = 0 \wedge k_P^* = 0 \end{cases} \quad (3.26)$$

which is nonnegative. \square

We have just shown that $\theta_P^* \geq \theta_S^*$. This is one of the main results of the paper, and implies a greater risk of bank default under P than under S . Private bank owners do not incorporate the negative effects of bank default on social welfare. The discontinuity in risk is clear from figure 7.

In summary, when accountability β is low the politician does not care much about efficiency costs E and prefers state control over banks to funnel funds directly. However, when β or E increase sufficiently, bank governance shifts to P .

This shift of control over banks to entrepreneurs increases bank efficiency but leads to more funneling than what is optimal for the politician. Figure 7 shows how a transition from S to P increases funneling and the bank's default probability. As β increases further, the political costs of instability increase. Thus the politician demands smaller and smaller compensation to incentivise the private bank owners to funnel less. At a sufficiently high β compensation drops to zero and funneling stabilises.

3.5 Endogenous access to finance

This section studies lobbying for preferential access to finance. Now politicians are lobbied by competing coalitions of citizens seeking preferential access. Next to the level of contributions k_C , the size of coalition n_C is endogenous. In this section we set $l = 0$ for simplicity.

3.5.1 Product market equilibrium

As in the basic model social welfare $s_C = \frac{1}{2}(n_C)^2 + n_C(m - n_C)$, maximised by allowing full entry $n_C = m$. Higher production leads to higher per citizen consumption at a lower unit price, an effect which outweighs lower firm profits. Entrepreneurs' collective income $n_C(m - n_C)$ is maximised by limiting entry at $n_C = \frac{1}{2}m$.

3.5.2 State banking

Under state control, coalitions of n_S agents try to convince the politician to directly provide finance to members of their group. As before, citizens incur efficiency costs E .

Proposition 11. *Under state banking*

- (a) *entry n_S^* is increasing in political accountability β .*

(b) political contributions k_S^* equals firms' total income and decrease in accountability β .

(c) funneling θ_S^* is decreasing in political accountability β , as long as it is non zero.

Proof. Under state banking the politician can choose entrants independent of welfare w_i . As a result all citizens are the same in the lobbying game and lobby groups try to outbid each other by choosing a level of entry

$$\begin{aligned} & \max_{n_S, \theta_S, k_S} U_{p,S} \\ & \text{s.t. } 0 \leq k_S \leq n(m - n) + \theta_S n I \\ & \quad 0 \leq \theta_S \leq 1 \end{aligned} \tag{3.27}$$

resulting in

$$k_S^* = n_S^*(m - n_S^*) + \theta_S^* n I \tag{3.28}$$

$$\theta_S^* = \max \left\{ \frac{2}{3} - \frac{m}{3(1-\beta)I}, 0 \right\} \tag{3.29}$$

which is positive for $\beta < \beta_S^* = 1 - \frac{m}{2I}$, and

$$n_S^* = \begin{cases} \frac{2[m+(1-\beta)I]}{3(2-\beta)} & \text{for } \theta_S^* \geq 0 \\ \frac{m}{2-\beta} & \text{for } \theta_S^* = 0 \end{cases} \tag{3.30}$$

It is easy to show that $\frac{\partial \theta_S^*}{\partial \beta} \leq 0$ and $\frac{\partial n_S^*}{\partial \beta} > 0$.

Finally, total income of the politician is

$$n_S^* = \begin{cases} \frac{2[(2-6\beta+3\beta^2)m^2+(4-6\beta+3\beta^2)(1-\beta)mI+2(1-\beta)^2I^2]}{9(1-\beta)(2-\beta)^2} & \text{for } \theta_S^* \geq 0 \\ \frac{1-\beta}{(2-\beta)^2} m^2 & \text{for } \theta_S^* = 0 \end{cases} \tag{3.31}$$

which decreases in β . □

As social welfare increases in entry and becomes more valuable for the politician the higher is accountability β , entry n_S^* is increasing over β . On the other hand, funneling θ_S^* falls with β , because the politician values income from funneling less, the political costs of default increase, and total lending n_S^*I increases. Greater lending allows for larger rents without raising θ_S^* .

3.5.3 Private banking

Under P no efficiency costs are incurred. The politician controls entry by selecting the private bankers who then choose the identity of borrowers and set funneling θ_P .

Proposition 12. *Under private captured banking*

- (a) *entry n_P^* is increasing in political accountability β .*
- (b) *political compensation is smaller than firms' total income and are decreasing in β , as long as they are non zero.*
- (c) *funneling θ_S^* is decreasing in political accountability β , as long as k_P^* is non zero.*

Proof. Funneling is determined by the private banker at $t = 2$:

$$\begin{aligned} \max_{\theta_P} U_{e,P} &= E[\pi_{e,P}] \\ \text{s.t. } 0 &\leq \theta_P \leq 1 \end{aligned} \tag{3.32}$$

such that

$$\theta_P^* = \frac{n_P(I - m + n_P) + k_P}{2n_P I}$$

Given θ_P^* , entry and compensation are set at $t = 1$ to maximise the utility of the politician:

$$\begin{aligned} \max_{n_P, k_P} U_{p,P} \\ \text{s.t. } 0 &\leq k_P \leq n_P(m - n_P) + \theta n_P I \end{aligned} \tag{3.33}$$

Taking first order conditions yields

$$k_P^* = \max \left\{ \frac{2(2 - 6\beta + 3\beta^2)m^2}{9(1 - \beta)(2 - \beta)^2} + \frac{2(4 - 6\beta + 3\beta^2)(1 - \beta)mI + 4(1 - \beta)^2I^2}{9(1 - \beta)(2 - \beta)^2}, 0 \right\} \quad (3.34)$$

which is positive for $\beta < \beta_P^* = 1 - \frac{\sqrt{I^2 + 3m^2} - I}{3m}$ with $\beta_P^* > \beta_S^*$. Substituting this back into θ_P^* we find

$$\theta_P^* = \begin{cases} \frac{5}{6} - \frac{m}{6(1-\beta)I} & \text{for } k_P^* > 0 \\ \frac{2}{3} - \frac{\sqrt{3m^2 + I^2}}{I} & \text{for } k_P^* = 0 \end{cases} \quad (3.35)$$

and

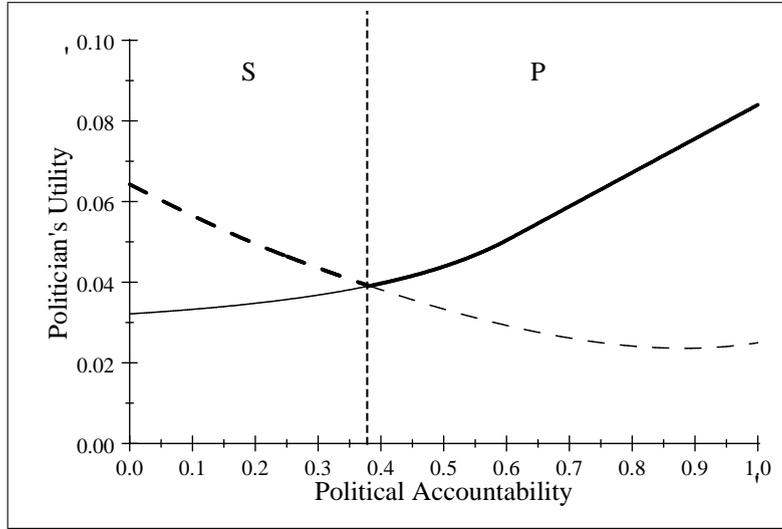
$$n_P^* = \begin{cases} \frac{2[m + (1-\beta)I]}{3(2-\beta)} & \text{for } k_P^* > 0 \\ m - \frac{1}{3}(\sqrt{(3m^2 + I^2)} - I) & \text{for } k_P^* = 0 \end{cases} \quad (3.36)$$

The politician's income is identical under S and P for $\beta < \beta_S^*$ while the income under S is higher for $\beta > \beta_S^*$. As with exogenous entry it is the case that $\frac{\partial k_P^*}{\partial \beta} \leq 0$, $\frac{\partial \theta_P^*}{\partial \beta} < 0$ and $\theta_P^* > \theta_S^*$. When looking at entry we see that $\frac{\partial n_P^*}{\partial \beta} > 0$ and that $n_P^* = n_S^*$ for low β (when $\theta_S^* > 0$), while $n_P^* < n_S^*$ for high β (when $\theta_S^* = 0$). \square

As in the basic model the private bank owners collectively set relatively high funneling θ_P^* , because they do not incorporate the negative effects of a bank default on social welfare. The banker's incentive to funnel strengthens over β . The reason is that entry n_P^* increases in accountability β , such that profits from production fall and total lending (potential income from funneling) rises.

For low β , entry $n_P^* = n_S^*$, while for high β we find that $n_P^* < n_S^*$. The reason is that under S the politician simply maximises rents whereas under P the politician also seeks to limit funneling. To limit funneling the politician needs to leave sufficient profits to entrepreneurs, leading to lower political compensation. By limiting entry n_P^* firm income increases such that there is a larger 'pie' to split with entrepreneurs.

Figure 3.8: Utility for $m = \frac{1}{2}, I = \frac{1}{3}$ and $E = \frac{1}{10}$.



Because of the growing importance of social welfare n_P^* still increases over β , but at a slower rate than n_S^* .

3.5.4 Choice of bank governance

As in the basic model the politician compares his utility under state and private banking. In figures 8 till 11 we depict the politician's utility, entry and funneling under state and private bank control for $m = \frac{1}{2}, I = \frac{1}{3}$ and $E = \frac{1}{10}$.

Figure 11 shows that as for exogenous entry the politician prefers state banking S for low accountability β and private banking P for high β .

Proposition 13. *Comparing S and P*

- (a) *entry under P is smaller or equal to entry under S .*
- (b) *the political contributions are never lower under S than under P .*
- (c) *funneling is greater under P than under S .*
- (d) *social welfare increases under S and under P , and at the transition from S to P due to cost E .*

Proof. Using (3.30) and (3.36) we compute

$$n_S^* - n_P^* = \begin{cases} 0 & \text{for } \theta_P^* > 0 \wedge k_P^* > 0 \\ \frac{m-2(1-\beta)I}{3(2-\beta)} & \text{for } \theta_P^* = 0 \wedge k_P^* > 0 \\ \frac{1}{3}(\sqrt{(3m^2 + I^2) - I}) - \frac{(1-\beta)m}{2-\beta} & \text{for } k_P^* = 0 \end{cases} \quad (3.37)$$

For $\theta_S^* = 0 \wedge k_P^* > 0$ we know that $\theta_S^* = \max\left\{\frac{2}{3} - \frac{m}{3(1-\beta)I}, 0\right\}$, such that $\frac{2}{3} - \frac{m}{3(1-\beta)I} \leq 0 \Leftrightarrow \beta \geq \beta_S^*$. Because $\frac{\partial n_S^* - n_P^*}{\partial \beta} > 0$ and $\frac{m-2(1-\beta_S^*)I}{3(2-\beta_S^*)} = 0$ we conclude that $n_S^* - n_P^* \geq 0$.

For $\theta_S^* = 0 \wedge k_P^* = 0$, $\beta = \beta_P^*$ and $\left(\frac{\partial n_S^* - n_P^*}{\partial \beta} > 0\right)$ such that $\frac{1}{3}(\sqrt{(3m^2 + I^2) - I}) - \frac{(1-\beta)m}{2-\beta}$ and $n_S^* - n_P^* > 0$.

Comparing (3.28) and (3.34) results in (b) and comparing (3.29) and (3.34) results in (c).

Social welfare as in (3.13) and (3.14) increases in entry and decreases in funneling. Because $n_S \geq n_P$ and $\theta_S < \theta_P$, social welfare falls upon the transition from S to P . On the other hand, inefficiency costs E are no longer incurred, raising citizens' consumption of the numeraire good. At the transition

$$E[U_{p,S}] = E[U_{p,S}] \text{ with } k_S^* \geq k_P^* \Leftrightarrow E[s_S] \leq E[s_P] \quad (3.38)$$

□

The figures 9, 10 and 11 respectively depict entry, political compensation and funneling for S and P .

Entry is lower under P because the politician needs entrepreneurs to generate sufficient income to limit funneling while protecting his political compensation. As a result, the transition from S to P can be accompanied by narrowing of finance and a drop in entry, as in figure 9. This means that the banks emerging just after

Figure 3.9: Entry for $m = \frac{1}{2}, I = \frac{1}{3}$ and $E = \frac{1}{10}$.

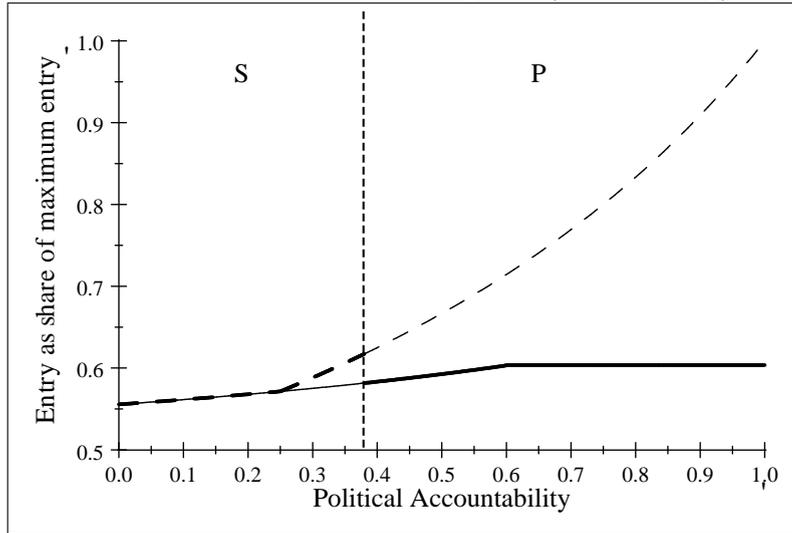


Figure 3.10: Politician's rents for $m = \frac{1}{2}, I = \frac{1}{3}$ and $E = \frac{1}{10}$.

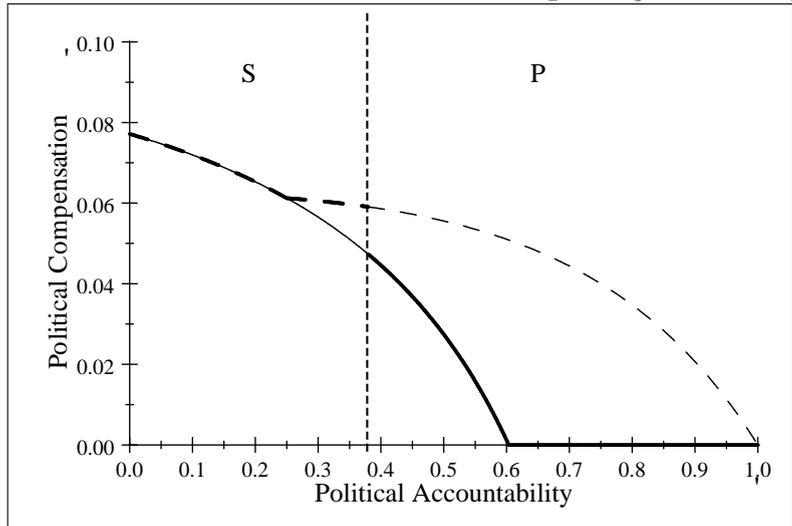
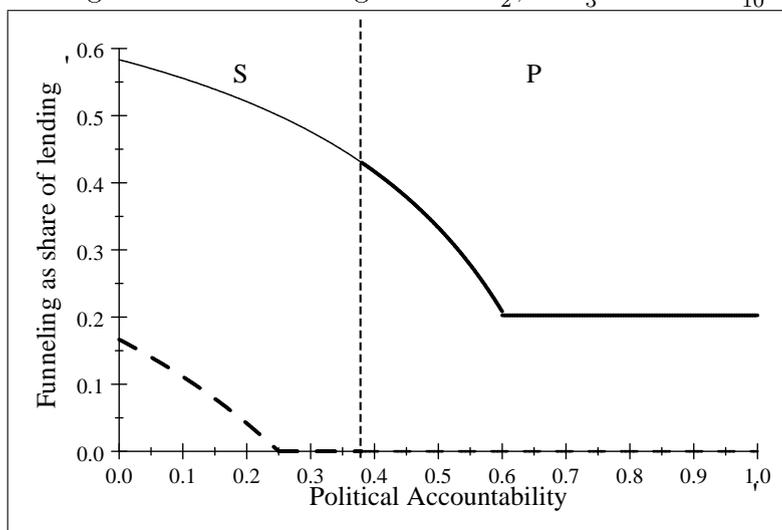


Figure 3.11: Funneling for $m = \frac{1}{2}, I = \frac{1}{3}$ and $E = \frac{1}{10}$.



privatisation are captured by a relatively small group of entrepreneurs. Because these entrepreneurs funnel a large share of bank funds these captured banks are very fragile (see figure 11). Interestingly, entry endogenously stops increasing under P for $\beta > \beta_P^*$ such that $k_P^* = 0$. The politician allows entrepreneurs to keep all profits to limit θ_P^* . Entrepreneurs thus enjoy limited competition to restrain them from undermining stability, even when accountability is very high.

Compensation stabilises under S for high β in figure 4 whereas they gradually falls to zero in figure 10 because endogenous entry n_S^* continuously increases over β . Because of increasing n_S^* , the politician reduces the funneled share of loans θ_S^* faster with endogenous entry.

3.6 Empirical implications and evidence

The main testable predictions of the model are:

- (i) state banks are predominant for low and private banks for high levels of political accountability.

(ii) banks are likely to be privatised when accountability is intermediate, such that private banks are captured and there is low entry and hence slower economic development. As accountability increases private bank control dilutes and entry increases.

(iii) banking crises are most likely when political accountability is intermediate, and especially in captured banks.

We now empirically illustrate the effects of political accountability on bank control. While existing work shows that state control of banks is lower in countries with more accountable political systems, we are not aware of a similar prediction differentiating across private banks.

Our variable *bank control* comes from Morck, Yavuz and Yeung (2009) who deduced the ultimate ownership and voting rights of the 10 largest listed and unlisted banks in 44 countries at the end of 2001 and classified banks as state-controlled, a family-controlled (i.e. private captured) or independent. At each level of the ownership chain they take the largest owner who controls more than 10 percent of the vote as the controlling owner and then sum all voting blocks with common ultimate owners. Assuming that family members and state entities act in concert they assign the ownership category to the largest controlling owner. We interpret independent banks as less captured by its owners than family banks, or in any case related to a broader coalition of interests (corresponding in the model to a high n).

We use a country's *Voice and Accountability*, *Polity2-score* and *Press Freedom* as measures for political accountability. These measures quantify democratic accountability, the quality of governing institutions and/or the freedom of the media (table 10 contains an overview of all variables). Acknowledging that changing bank control is a slow process (especially in case of block ownership), we use country's average score for the past five years. We test the relationship between accountability and bank control in OLS-regressions, controlling for country's *legal origin*.

3.6. EMPIRICAL IMPLICATIONS AND EVIDENCE

The descriptive statistics in table 10 state that 27 percent of large banks' assets was controlled by the state, 28 percent by a family or individual and 45 percent by an independent bank. There is great variation in the sample: in some countries bank assets are fully controlled by the state, in others by families and in yet others all large banks are independent. Despite a bias towards more accountability countries, there are countries with low and high accountability in the sample. Although there is no data on bank control for (former) communist countries, it contains countries with English, French, Scandinavian and German legal origin and countries at different stages of economic development.

Graphs 1 to 3 show the average share of total bank assets controlled by respectively state, family and independent banks as a function of our three measures of political accountability. In each graph we categorised countries along accountability. The graphs reveal that state control is most likely for low, family control for intermediate and independent control for relatively high accountability, as predicted by the model. This result is robust to changes in categorisation.

In tables 11 to 13 we run OLS regressions to see whether the correlation between bank control and political accountability is robust to legal origin, which could play a major role. To separate intermediate political accountability from both positive and negative extremes, we construct squared variables.¹³ In line with the graphs, tables 12 to 14 suggest that state control is predominant in countries with low accountability, family control is strongest for intermediate accountability, and independent bank control for high accountability.¹⁴ When controlling for political institutions, family control remains more widespread in countries with French legal origin. Other coefficients on legal origin are mostly insignificant in our admittedly small sample.¹⁵

¹³Voice and Accountability and Polity IV are centered around zero, such that their squares are U-shaped. For Press Freedom, which runs from 0 to 100, we first subtract 50 and then take the square.

¹⁴A higher level of Voice and Accountability or Polity IV means that accountability is higher. A higher level of Press Freedom means that accountability is lower.

¹⁵In principle, our OLS regressions could suffer from reverse causality. However, we think it is

These simple tests complement the much more extensive evidence by Morck, Yavuz and Yeung (2009), who investigate the effects of bank control on capital allocation and bank stability. They show that capital allocation efficiency is lower with state and family banks, while instability is increasing only in the share of family banks. In line with the model, the transition from state to private bank control empirically seems to occur at intermediate level of accountability, when banks are captured.

3.7 Conclusion

This paper endogenises the political choice over state or private control of banks in a context when regulation is ineffective. Control over banks allow to channel loans to preferred borrowers and to capture resources by negotiating its terms. We show that bank control affects the allocation of finance, product market competition and the incidence of banking crises.

Our main results is that instability is not monotonic in accountability, even though this decreases with the chance of a crisis. The political choice is complex because of conflicting incentives it seeks to address. Social welfare includes entry and bank efficiency next to stability; lobby groups seek private bank control and limited entry (Kroszner and Strahan, 1999; Rajan and Zingales, 2003).

State control of banks allows politicians to capture large rents, but are inefficient. As accountability increases, this inefficiency cost, or an increasing legal risk associated with bribing, induce politicians to allow private bank control.

At the transition point to private control, banks are captured by small numbers of entrepreneurs. Private bankers do not fully incorporate the social costs of default, unlikely that even powerful banks (controlled by either the state, families or independent shareholders) determine political accountability. Even if this were the case, bankers would actually keep accountability low to protect profits. Alternatively, variations in accountability and bank control over time and space could be jointly determined by a third variable. Until now we were unable to come up with such a variable worth investigating.

so the risk of default jump. As political accountability rises further, the politician seeks to limit funneling by leaving more rents to solvent banks.

In the general case when welfare increases in entry, bank ownership becomes more diffused with accountability. This reduces bank solvency incentives, so if regulation cannot be tightened the optimal amount of access may need to be contained to maintain financial instability.

The approach offers various testable implications. It highlights how countries may shift to private banks at a stage in institutional development when private capture is likely. The shift may thus lead to narrower access to finance and a higher incidence of banking crises due to related lending and excess risk taking. Inadequate capitalisation and legislation allowed opportunistic lending, as in Mexico prior to the 1994 or in Russia prior to 1998.

A policy implications is that pushing countries to privatise banks even before they would naturally choose to do so is counterproductive as regulatory capture dominates in such an institutional environment, so that a shift of control to the private sector would lead to an increase in risk taking and instability.

An important question we do not address is the impact of political institutions on the potential stock of lending. North and Weingast (1989) highlights that financial development requires a measure of political accountability. La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998), show that financial market development depends on legal guarantees for investors. In our model, as the executive becomes increasingly constrained, private rents stop being fully expropriated, and increase with accountability along with the volume of intermediation, as broader private bank ownership leads to more entry and thus more loans.

We intend to pursue further, not least in the light of the recent crisis, the question whether more democratic societies with higher competition face reduced private incentives for solvency, as in the classic trade off between charter value and

bank stability. A research question is whether financial stability in highly developed democracies requires less competition. A less normative question is how well risk controlling regulation may resist capture when high entry implies that solvency incentives are poor.

3.8 Tables

<i>Table 10. Variable Description</i>			
	<i>Variable</i>	<i>Source</i>	<i>Description</i>
Panel A. Dependent Variable			
1	Bank Control	Morck, Yavuz and Yeung (2009)	Extension of data from Caprio, Laeven and Levine (2007) who trace back the ultimate ownership and voting rights of the 10 largest listed banks in 44 countries at the end of 2001. The new data includes unlisted banks and reclassify banks as state-controlled, a family-controlled or independent.
Panel B. Explanatory Variables			
2	Voice and Accountability	Kaufmann, Kraay, Mastruzzi (2008)	Combination of democratic accountability (how response the government is to its people) and the chance of military intervention.
3	Polity2	Marshall, Jaggers and Gurr	Combination of measures of autocracy and democracy in a given country, from -10 to 10. See http://www.systemicpeace.org/polity/polity4.htm
4	Press Freedom	Freedom House	Measure based on influence on media content of (i) laws and regulations, (ii) political pressures and (iii) economic influences, and (iv) repressive actions such as murders of journalists. Note: lower values imply higher press freedom. See http://www.freedomhouse.org/template.cfm?page=274
Panel C. Control Variables			

5	Legal Origin	La Porta, Lopez-de- Silanes,Shleifer and Vishny (1999)	Division of countries in English, French, German, Scandinavian and Socialist legal origin.
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CHAPTER 3. BANK OWNERSHIP AND FINANCIAL STABILITY

Table 11. Political Accountability and State Bank Control: OLS

The table shows the results of cross-country OLS-regressions with robust standard errors. Explanatory variables are in rows, with a column for each of the four political variables. The dependent variable 'State' refers to the fraction of votes in the ten largest banks in a country controlled by the state at the end of 2001. Other variables are as given in Table 7. The omitted category is German legal origin.

		<i>Voice and Acc.</i>	<i>Polity2</i>	<i>Press Freedom</i>
		(1)	(2)	(3)
Political Variable	Coefficient	-0.204***	-0.025	0.007**
	P-Value	(0.004)	(0.108)	(0.022)
English legal origin	Coefficient	-0.150	-0.107	-0.164
	P-Value	(0.188)	(0.446)	(0.185)
French legal origin	Coefficient	-0.174	-0.090	-0.170
	P-Value	(0.129)	(0.438)	(0.152)
Scandinavian legal origin	Coefficient	-0.093	-0.177	0.138
	P-Value	(0.481)	(0.204)	(0.330)
Constant	Coefficient	0.519***	0.536***	0.177*
	P-Value	(0.000)	(0.004)	(0.078)
<i>N</i>		43	43	43
<i>R-squared</i>		0.2585	0.1428	0.1755

Table 12. *Political Accountability and Family Bank Control: OLS*

The table shows the results of cross-country OLS-regressions with robust standard errors. Explanatory variables are in rows, with a column for each of the four political variables. The dependent variable 'Family' refers to the fraction of votes in the ten largest banks in a country controlled by a family at the end of 2001. Other variables are as given in Table 7. The omitted category is German legal origin.

		<i>Voice and Acc.</i>	<i>Polity2</i>	<i>Press Freedom</i>
		(1)	(2)	(3)
Political Variable	Coefficient	0.164***	0.039**	-0.002
	P-Value	(0.002)	(0.024)	(0.692)
Political Var. Squared	Coefficient	-0.313***	-0.007**	-0.000**
	P-Value	(0.000)	(0.015)	(0.095)
English legal origin	Coefficient	0.202*	0.138	0.090
	P-Value	(0.073)	(0.146)	(0.315)
French legal origin	Coefficient	0.276***	0.262***	0.193*
	P-Value	(0.009)	(0.003)	(0.061)
Scandinavian legal origin	Coefficient	0.289**	0.050	0.130
	P-Value	(0.028)	(0.545)	(0.250)
Constant	Coefficient	0.295***	0.292*	0.411
	P-Value	(0.007)	(0.083)	(0.131)
<i>N</i>		43	43	43
<i>R-squared</i>		0.5022	0.3097	0.2644

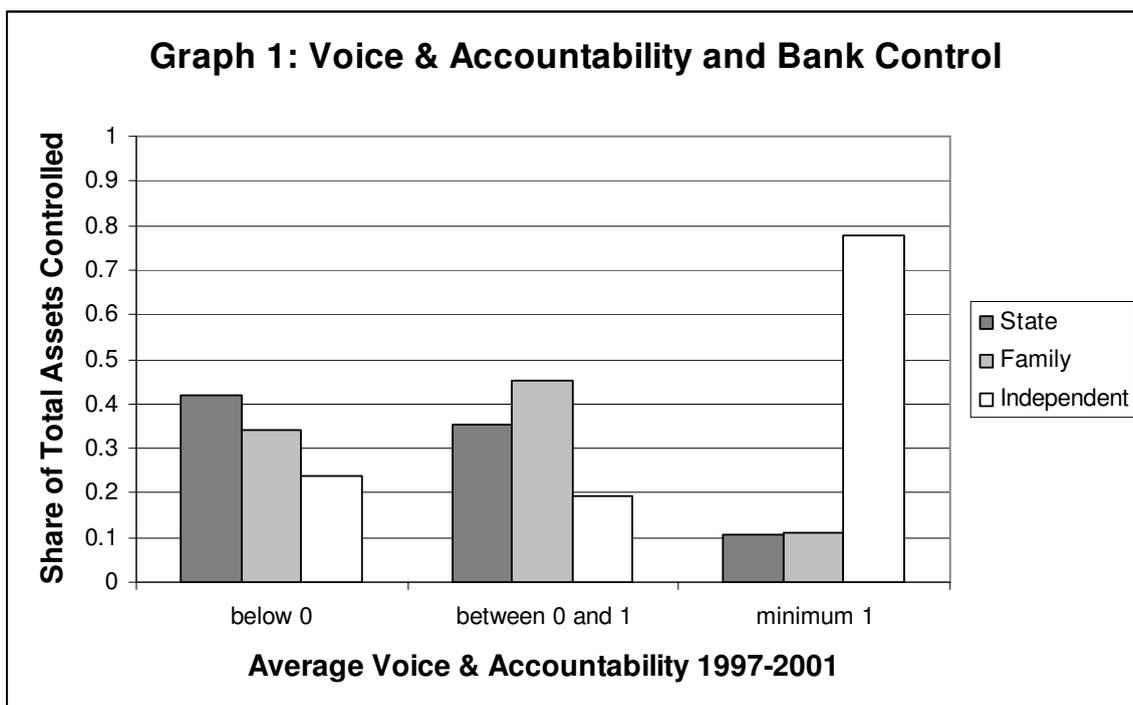
CHAPTER 3. BANK OWNERSHIP AND FINANCIAL STABILITY

Table 13. Political Accountability and Independent Bank Control: OLS

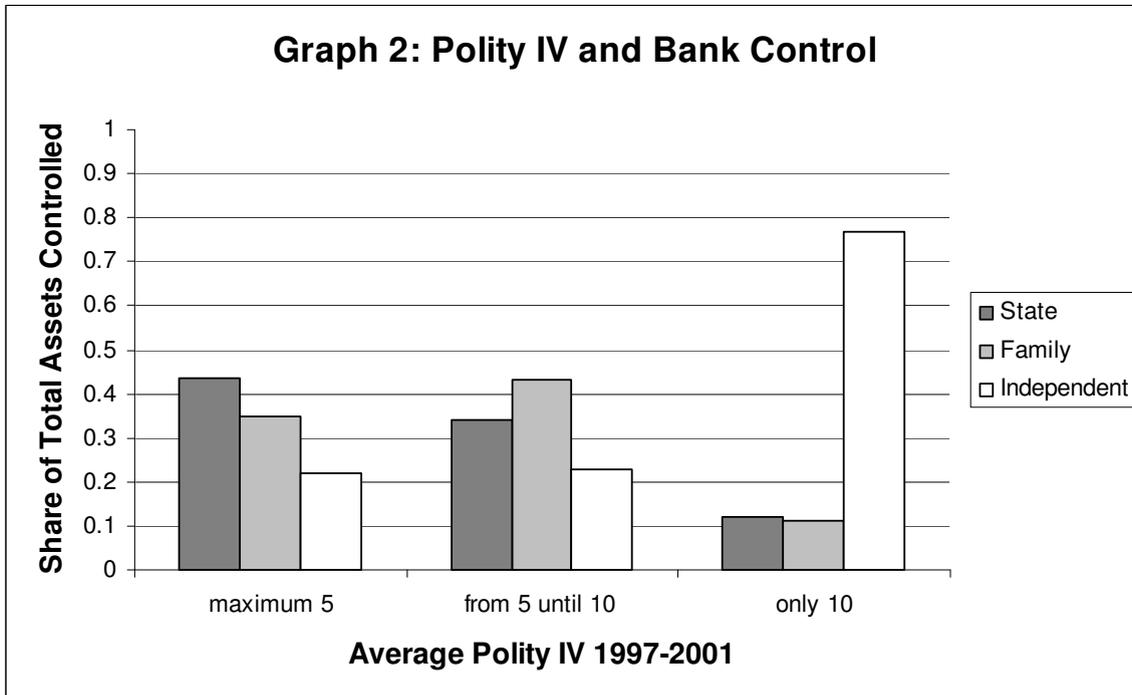
The table shows the results of cross-country OLS-regressions with robust standard errors. Explanatory variables are in rows, with a column for each of the three political variables. The dependent variable 'Independent' refers to the fraction of votes in the ten largest banks in a country controlled by independent investors at the end of 2001. Other variables are as given in Table 7. The omitted category is German legal origin.

		<i>Voice and Acc.</i>	<i>Polity2</i>	<i>Press Freedom</i>
		(1)	(2)	(3)
Political Variable	Coefficient	0.251***	0.030*	-0.010***
	P-Value	(0.002)	(0.054)	(0.001)
English legal origin	Coefficient	-0.006	-0.063	0.041
	P-Value	(0.965)	(0.705)	(0.791)
French legal origin	Coefficient	-0.124	-0.231	-0.097
	P-Value	(0.401)	(0.127)	(0.527)
Scandinavian legal origin	Coefficient	0.065	0.168	0.109
	P-Value	(0.665)	(0.277)	(0.490)
Constant	Coefficient	0.358**	0.346*	0.803***
	P-Value	(0.012)	(0.067)	(0.000)
<i>N</i>		43	43	43
<i>R-squared</i>		0.4090	0.2838	0.3784

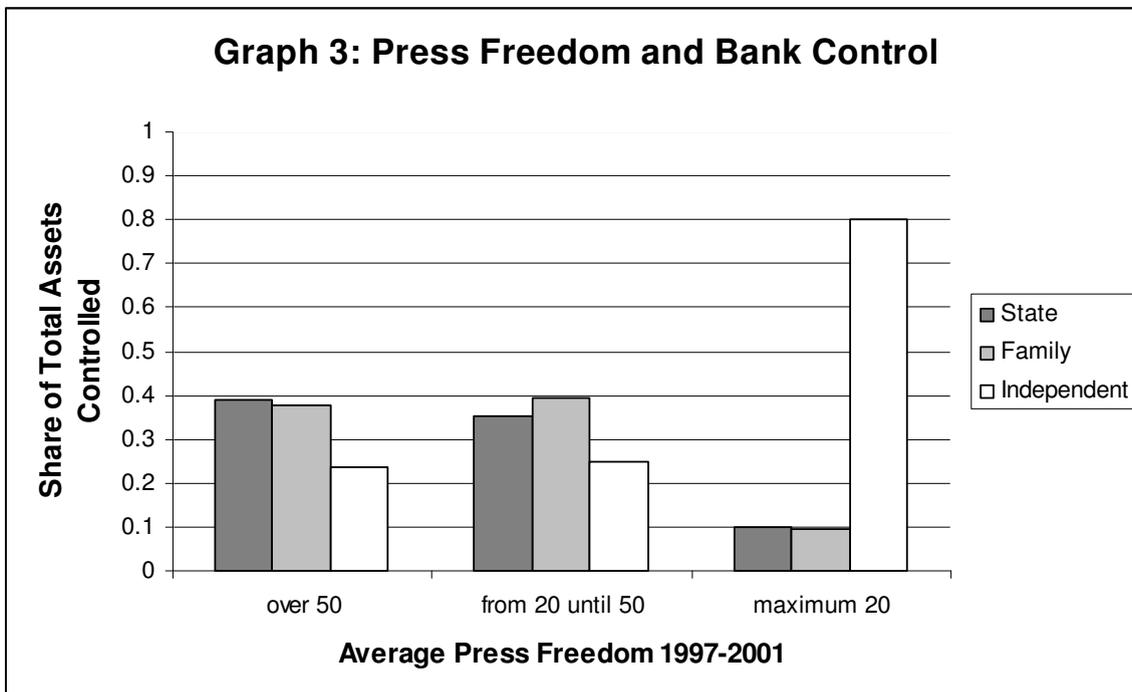
These graphs depict the average country-level share of total bank assets controlled by state, family and independent banks for different levels of accountability, measured by respectively Voice and Accountability, the Polity IV-score and Press Freedom (see table 1).



The 'baskets' of Voice and Accountability respectively contain 12, 13 and 18 countries.



The 'baskets' of Polity IV-scores respectively contain 10, 15 and 18 countries.



The 'baskets' of Press Freedom respectively contain 13, 14 and 16 countries.

4

Partisan entry

4.1 Introduction

Many countries house multiple ethnic or linguistic communities that have their own political leaders. When ruling such a country unconstrained, these leaders can greatly favour their own community using national authority and local connections to provide public goods (Kwon, 2005). Partisan-political redistribution towards core constituents is widespread and can take many shapes. Examples are targeted regional and municipal subsidies in Columbia (Crisp and Ingall, 2002), infrastructure investments in France (Cadot, Röller and Stephan, 2006), the location of factories in Ghana and Zambia (Killick, 1978; Tangri, 1999), government jobs in Argentina (Calvo and Murillo, 2004), the location of cash crops and education in Uganda (Stewart and O'Sullivan, 1998) and taxation, licensing and access to finance in Burundi (Ngaruko and Nkurunziza, 2002). In an important paper Sapienza (2004) argues that Italian politicians influence ownership through lending. By comparing individual loan contracts from Italian state banks she shows that interest rates on such loans are lower for larger firms and in areas where the political party affiliated to the bank is strong. This reflects 'discriminatory community preferences' in which

people care for others' welfare within their community only (Cutler, Elmendorf and Zeckhauser, 1993).

In this paper we consider two variables affecting partisan-political redistribution: political accountability and polarisation. Political accountability is a measure for the responsiveness of a country's politician to the welfare of citizens. In other words it represents the ability of citizens to question and steer government policies via formal institutions such as elections and informal ones such as the media. Polarisation gives the leadership's valuation of the utility from their community relative to the utility of others. It represents the depth of the social divide. Interestingly, in many countries increasing political accountability did not irradicate favouratism (Alesina, Devleeschauwer, Easterly, Kurlat and Wacziarg, 2003).

In what follows we construct a political economy model to investigate the effects of political accountability, polarisation and the inclusiveness of government on the distribution of firm ownership. In our model, a politician sets discriminatory entry requirements for members of his clan and outsiders, given the distribution of entrepreneurial skill over both constituencies. Such discriminatory entry is costly, because every citizen has some level of entrepreneurial skill that determines the cost to produce one unit of final good. The politician may limit total entry to support firm profits, which makes bias more valuable and leads to larger political contributions.¹ The entry level and bias depend on polarisation and political accountability which shape the politician's preferences.

We find that the ownership bias is greatest when polarisation is high and when political accountability is intermediate. The first result is straightforward, as polarisation directly affects the political gains from biased entry. For an intuition for the second result consider two extremes: minimum and maximum political accountability. With zero accountability the politician is oblivious for the welfare of any

¹Limiting total entry and biasing entry both harm total welfare. The former reduces supply and raises prices, while the latter raises production costs per unit.

citizen and values only political contributions. To generate these contributions the politician maximises total firm profits by limiting entry without engaging in costly discrimination of entry. With full accountability the politician needs to maximise all constituents' welfare. The politician then maximises consumption by allowing free nondiscriminatory entry by the most skilled entrepreneurs. For intermediate accountability the politician cares for both (biased) social welfare and political contributions. As efficiency considerations no longer dominate, entry is limited and biased. Another result is that total entry and production rise with political accountability and fall with polarisation. Because consumer welfare increases with entry, greater political accountability induces greater entry, as in Perotti and Volpin (2007). As discussed before, a more polarised society induces discriminatory entry and raises production costs per unit. These greater costs and the politician's desire to redistribute more result in lower total entry.

Entry is comparable to, but not the same as a general or nonexclusive public good. Like general public goods, increased entry benefits all citizens equally via a lower price of the final good.² Earlier theoretical research shows that the provision of nonexclusive public goods is lower when increasingly financed by one ethnic group despite being shared with other ethnic groups (Alesina, Baqir, Easterly, 1999). In line with this prediction, total entry falls with polarisation in our setup. However, the politician can also target entry at a specific group in society. This allows for some targeting in our public good, being entry. As opposed to nonexclusive public goods, greater polarisation or more different tastes induce more excessive spending on local public goods (Besley and Coate, 2003). For example, city employment is used as disguised redistributive policy and is therefore higher in American cities that are more ethnically fragmented (Alesina, Baqir and Easterly, 2000). In our setup, a

²In our model all citizens derive the same utility from consuming the final good. Therefore they buy and consume the same amount and benefit equally from increased entry. Citizens spend their remaining disposable income on a numeraire good.

more polarised society has more discriminatory entry, despite its larger costs.

Our paper is also related to the literature on institutions and growth, as total entry equals production. Our model predicts that total entry decreases in polarisation and increases in political accountability. Empirical papers reveal that greater polarisation results in lower economic growth due to a less efficient distribution of available resources (Easterly and Levine, 1997; Alesina, Devleeschauwer, Easterly, Kurlat and Wacziarg, 2003; Desmet, Ortuño-Ortín, Wacziarg, 2009). Countries with more democratic and limited governments have lighter regulation of entry (Djankov, La Porta, Lopez-de-Silanes and Shleifer, 2002). Moreover, competition is more limited when citizens have fewer democratic rights (Benmelech and Moskowitz, 2008) and small firms have better access to finance with a more independent and trusted legal system (Frye and Shleifer, 1997; Beck, Demirgüç-Kunt, Laeven and Levine, 2008).

We are not aware of empirical work testing whether or not the political bias in firm ownership between the ruling class and the opposition is greatest in countries with intermediate accountability. If this bias is reflected in overall inequality, our result is in line with the political Kuznets-curve. There is evidence for inequality being largest for intermediate accountability across countries and over time (Acemoglu and Robinson, 2002; Tam, 2008), not accounting for possible interaction with polarisation. Also in ethnically divided countries democracy alone does not reduce political and economic capture by one group, nor violence between groups. When accountability increases political parties may actually accentuate differences to increase support. Therefore, in divided developing countries a politically and economically inclusive government is required to mitigate group-differences, democracy to be sustained and the country to develop (Stewart, 2000 and 2002). We show that this can only work when the government is truly inclusive (at least half of the population) and political accountability is sufficiently high. Failure to meet either

condition increases rather than decreases the entry discrimination.

Our model focusses on the unequal entry by different constituencies by making simplifying assumptions. Firstly, the politician has the power to target firm ownership.³ Secondly, we rule out direct transfers to one subset of the population or the politician. The reasoning is that direct transfers from for example one ethnic group to another raise too much (international) scrutiny, especially when implemented on a large and systematic scale. Transfers are therefore made indirectly, in our case through firm ownership. Thirdly, the constituency and entrepreneurial skill of citizens are observable. Fourthly, there is no effort choice in the firm and no uncertainty regarding its production. We also assume that firm owners and the politician share profits equitably.⁴ Furthermore, we model polarisation and political accountability as two independent exogenous variables, while they have been shown to be interrelated (Engerman and Sokoloff, 2002; Aghion, Alesina and Trebbi, 2004). Finally, we do not model the complex choice of a country's executive, but start from a situation in which a ruling politician is present.

4.2 Model

4.2.1 Setup

Consider an economy with a population normalised to one. Every citizen i has a home community or constituency H , which is either part of the group ruling the country R or the opposition O . Citizens have an endowment ω and has an observable individual entrepreneurial skill $\sigma_i \in [0, 1]$ reflecting the cost to produce one unit of final good. In equilibrium, an endogenous share n of the country's citizens own a

³In this paper we do not distinguish ways of targeting such entry. In Perotti and Vorage (2009) we explicitly model and investigate the differences between direct and indirect political control over entry.

⁴Again, see Perotti and Vorage (2009) for an endogenous division of rents. We are confident that this assumption does not substantially affect our results.

firm and produce one unit of final good, while the remaining $1 - n$ only consume.

There is a politician p having the power to differentiate entry between his ruling constituency R and the rest of the population, opposition O . Specifically the politician chooses entry rates n_R and n_O given citizens' division in groups $H = \{R, O\}$. The share of entrepreneurs in the economy is

$$n = \rho n_R + (1 - \rho)n_O \quad (4.1)$$

in which we denoted the population shares by $|R| = \rho$ and $|O| = 1 - \rho$. We will refer to ρ as the inclusiveness of government. The greater ρ , the larger the fraction of the population represented in government.

Recognising the politician's power to set entry, potential entrepreneurs form an interest group seeking to convince the politician to limit entry. By reducing entry the supply of the final good falls, thereby increasing its price and entrepreneurs' profits. Part of these profits are offered to the politician as compensation $k(n_R, n_O)$ in exchange for limiting competition. The politician's utility is

$$U_p(n_R, n_O) = \beta[S(n_R, n_O)] + (1 - \beta)k(n_R, n_O) \quad (4.2)$$

where weight $\beta \in [0, 1]$ represents the degree of political accountability. It is the responsiveness of government, civil servants and most importantly the politician to the wishes of the public, reflected in social welfare $S(n_R, n_O)$. Social welfare $S(n_R, n_O)$ depends on the level of polarisation $\alpha \in (\frac{1}{2}, 1)$, or the relative political importance of those in R as opposed to O . The boundary $\alpha > \frac{1}{2}$ guarantees that the ruler is biased in favour of R .

We define

$$S(n_R, n_O) = \alpha S_R(n_R, n_O) + (1 - \alpha)S_O(n_R, n_O) \quad (4.3)$$

where $S_R(n_R, n_O)$ and $S_O(n_R, n_O)$ are the total utility of citizens in ruling coalition R and opposition O . Clearly, the larger α , the greater the politician's preference for R over O . Welfare of a citizen in R is $s_R(n_R, n_O)$ and for a citizen in O is $s_O(n_R, n_O)$. Because the size of R is ρ ,

$$S_R(n_R, n_O) = \rho s_R(n_R, n_O) \quad (4.4)$$

and

$$S_O(n_R, n_O) = (1 - \rho) s_O(n_R, n_O) \quad (4.5)$$

The politician thus determines entry rates n_R and n_O by trading off higher welfare of his own constituents (due to higher profits) and lower average welfare of opposition constituents (due to higher production costs).

We define $s_H(n_R, n_O)$ as the weighted sum of the expected consumption utilities of consumers $E[U_c]$, entrepreneurs $E[U_{e,H}]$ and the politician $k(n_R, n_O)$.⁵ To be precise

$$\begin{aligned} s_R(n_R, n_O) = & (1 - n_R)E[U_c] + n_R E[U_{e,R}] \\ & + \left(\frac{n_R}{n}\right)k(n_R, n_O) - \omega \end{aligned} \quad (4.6)$$

and that of the opposition is

$$\begin{aligned} s_O(n_R, n_O) = & (1 - n_O)E[U_c] + n_O E[U_{e,O}] \\ & + \left(\frac{n_O}{n}\right)k(n_R, n_O) - \omega \end{aligned} \quad (4.7)$$

We thus abstract from bargaining between entrepreneurs and assume that every entrepreneur pays an equal share of $k(n_R, n_O)$. Note that we subtract endowments ω in the politician's utility because this is the minimum social welfare in the model,

⁵Social welfare is therefore independent of the distribution of utility within constituencies. As it are differences between groups that matter most, we feel comfortable with this assumption. For example, educational data from 36 developing countries over 1984-2004 reveals that it are indeed differences between groups and not between individuals that induce conflict (Ostby, 2008).

and is received independent of any action by the politician.

Any citizen i , being pure consumer c or entrepreneur e , maximises

$$U_i = x_i + y_i - \frac{1}{2}y_i^2 \text{ with } i = c, e \quad (4.8)$$

where x_i and y_i are respectively the consumption of a single numeraire and a single final good.⁶ The price of the numeraire good is one and the price of the final good is denoted by f . Disposable income equals an endowment ω plus any firm operating profits $\pi_{e,H}(n_R, n_O)$. We assume that $\omega \geq (2/9)$, assuring that consumers have sufficient income to buy the desired amount of final good. With respect to the expected utility of a consumer c , the expected utility of an entrepreneur e is

$$E[U_{e,H}] = E[U_c] + \pi_{e,H}(n_R, n_O) \quad (4.9)$$

with $E[U_c]$ following from maximisation of (4.8), as shown later in paragraph (4.2.3). We can simply add profits to the utility of consumers because profits are spent on numeraire goods only.

The operating profits of an entrepreneur e depend on entry and are

$$\pi_{e,H}(n_R, n_O) = I_{e,H}(n_R, n_O) - \frac{k(n_R, n_O)}{n} \quad (4.10)$$

where $I_{e,H}(n_R, n_O)$ is the entrepreneur's operating income from producing the final good. Naturally, the participation constraint is

$$\pi_{e,H} \geq 0 \quad (4.11)$$

The interest group representing all entrepreneurs maximises the sum of operating

⁶This utility function is widely used in the literature as it greatly simplifies the analysis. Krugman (1992) derives it in a political economy model in a general equilibrium framework.

profits given by

$$\begin{aligned}\Pi_e(n_R, n_O) &= \Sigma^e \pi_{e,H}(n_R, n_O) \\ &= \Sigma^e I_{e,H}(n_R, n_O) - k(n_R, n_O)\end{aligned}\tag{4.12}$$

For simplicity we assume that the politician and entrepreneurs split total income. This assumption does not change the main results of the paper, as long as the share going to entrepreneurs and the politician is positive.⁷ We investigated endogenous sharing of surplus between entrepreneurs and the politician in chapter 2. Contributions $k(n_R, n_O)$ are

$$k(n_R, n_O) = (1/2)\Sigma^e I_{e,H}(n_R, n_O) = \Pi_e(n_R, n_O)\tag{4.13}$$

4.2.2 Timeline

At $t = 0$, each citizen is assigned to a constituency $H = \{R, O\}$ with R being the ruling community (or communities) and O the opposition. Each citizen has observable endowments ω and entrepreneurial skill $\sigma_i \in [0, 1]$ where σ_i is the required investment by citizen i to start a firm producing one unit of final good.

At $t = 1$, potential entrepreneurs form an interest group that offers politician p compensation $k(n_R, n_O)$ in exchange for entry n_R by the members of the ruling community and entry n_O by outsiders.

At $t=2$, firms borrow σ_e and produce one unit of final good.

At $t=3$, citizens buy numeraire and final goods and consume. Compensation $k(n_R, n_O)$ is paid.

4.2.3 Product Market Equilibrium

Citizens maximise their utility as in (4.8) with respect to consumption of the final good y_i and consumption of the numeraire good x_i . Given that $\omega \geq \frac{2}{9}$, the budget

⁷What does change is the shape of the entry curve in figures 2 and 3.

constraint does not bind and citizens consume $c_i = 1 - f$. Equating this demand to supply n yields price $f = 1 - n$. This results in operating income per firm of

$$I_{e,C}(n_R, n_O) = 1 - n - \sigma_e \quad (4.14)$$

The expected utility of a consumer is

$$E[U_c] = \omega + (1/2)n^2 \quad (4.15)$$

and that of an entrepreneur is

$$\begin{aligned} E[U_{e,H}] &= E[U_{c,H}] + \pi_{e,H}(n_R, n_O) \\ &= E[U_{c,H}] + n_H(1 - n - E[\sigma_e]) - \frac{k(n_R, n_O)}{n} \\ &= \omega + \frac{1}{2}n^2 + n_H(1 - n - (1/2)n_H) - \frac{k(n_R, n_O)}{n} \end{aligned} \quad (4.16)$$

The sum of profits $\Pi_e(n_R, n_O)$ is

$$\begin{aligned} \Pi_e(n_R, n_O) &= k(n_R, n_O) = \frac{1}{2}\Sigma^e I_{e,H}(n_R, n_O) \\ &= \frac{1}{2}\left[\rho n_R(1 - n - \frac{1}{2}n_R) + (1 - \rho)n_O(1 - n - \frac{1}{2}n_O)\right] \end{aligned} \quad (4.17)$$

and social welfare is

$$\begin{aligned} S(n_R, n_O) &= \alpha S_R(n_R, n_O) + (1 - \alpha)S_O(n_R, n_O) \\ &= \alpha\rho\left[\frac{1}{2}n^2 + n_R(1 - n - \frac{1}{2}n_R)\right] \\ &\quad + (1 - \alpha)(1 - \rho)\left[\frac{1}{2}n^2 + n_O(1 - n - \frac{1}{2}n_O)\right] \end{aligned} \quad (4.18)$$

Proposition 14. *Total profits are maximised by restricting entry to $n_R = n_O = n = \frac{1}{3}$ while social welfare is maximised by allowing free entry $n_R = n_O = n = m = \frac{1}{2}$.*

Proof. The result readily follows from maximising $\Pi_e(n_R, n_O)$ from (4.17) and $S(n_R, n_O)$

from (4.18) with respect to n_R and n_O , using that $n = \rho n_R + (1 - \rho)n_O$. \square

Restricting entry to $n_R = n_O = \frac{1}{3}$ yields maximum profits of $\Pi_e(\frac{1}{3}, \frac{1}{3}) = \frac{1}{12}$ and is thus preferred by entrepreneurs. Allowing free entry to the final goods market results in $I_{e,C}(n_R, n_O) = 1 - n - \sigma_e = 0$ and entry of $n_R = n_O = m = \frac{1}{2}$, where the production costs (skill) of the marginal entrant is $\sigma_e = n$. This way entry and production are maximised, to the joy of consumers. Note that even under free entry total profits are $\Pi_e(\frac{1}{2}, \frac{1}{2}) = \frac{1}{16} > 0$, because all but the least efficient entrepreneurs still make a profit.

4.2.4 Equilibrium entry

In this section we determine entry by maximising the politician's utility in (4.2) after substituting political contributions and social welfare as in (4.17) and (4.18). Make a difference between the case in which limited polarisation with $\alpha \in (\frac{1}{2}, \frac{1}{2} + \frac{1}{4}\sqrt{2}]$ and extreme polarisation with $\alpha \in (\frac{1}{2} + \frac{1}{4}\sqrt{2}, 1)$. The restriction $\alpha \leq \frac{1}{2} + \frac{1}{4}\sqrt{2}$ assures that the opposition's entry n_O remains positive and that income of the entrepreneur with lowest skill s_i in R is positive. Under limited polarisation entrepreneurs' participation constraint as in in equation (4.11) is nonbinding. When $\alpha > \frac{1}{2} + \frac{1}{4}\sqrt{2}$ entry n_O hits zero and (4.11) binds for some intermediate β .

Proposition 15. *Entry by the ruling group and opposition satisfies $0 \leq n_O \leq n \leq n_R$.*

Proof. When setting entry for $\alpha \in (\frac{1}{2}, \frac{1}{2} + \frac{1}{4}\sqrt{2}]$, the politician p optimises (4.2)

$$\max_{n_R, n_O} U_p(n_R, n_O) \tag{4.19}$$

yielding

$$n_R = \frac{a + 2\beta(1 - \beta)(2\alpha - 1)}{b + c + d} \tag{4.20}$$

and

$$n_O = \frac{a}{b + c + d} \quad (4.21)$$

with

$$a = 1 - 2(2\alpha - 1)\beta\rho - (2\alpha - 1)[2\alpha(1 + 4\rho - 4\rho^2) + 1 - 6\rho + 4\rho^2]\beta^2 \quad (4.22)$$

$$b = 8(2\alpha - 1)^2\beta^2\rho^2 \quad (4.23)$$

$$c = -2(2\alpha - 1)[\beta + (8\alpha - 5)\beta^2]\rho \quad (4.24)$$

and

$$d = 3 - (2 - 2\alpha)\beta - (8\alpha^2 - 6\alpha + 1)\beta^2 \quad (4.25)$$

The bias in entry, or the entry wedge Δn , is

$$\begin{aligned} \Delta n &= n_R - n_O \\ &= \frac{2\beta(1 - \beta)(2\alpha - 1)}{b + c + d} \\ &> 0 \end{aligned} \quad (4.26)$$

and total entry is

$$\begin{aligned} n &= \frac{\rho n_R + (1 - \rho)n_O}{b + c + d} \\ &= \frac{4[4\alpha\rho(1 - \alpha)(1 - \rho) + \alpha(1 - \alpha) - \rho(1 - \rho)]\beta^2 + (1 - \beta)(1 + \beta)}{b + c + d} \end{aligned} \quad (4.27)$$

When $\alpha \in (\frac{1}{2} + \frac{1}{4}\sqrt{2}, 1)$ entry n_O from (4.21) and the income of the least efficient

entrant in R , being $1 - n - n_R$, reach zero. For that interval, entry rates are

$$n_R = \frac{1 - \beta(1 - 2\alpha)}{1 + 2\rho - \beta(1 + 2\alpha - 4\rho + 6\alpha\rho - 4\alpha\rho_2 + 2\rho_2)} \quad (4.28)$$

and

$$n_O = 0 \quad (4.29)$$

□

Polarisation induces politician p to set discriminatory entry rates n_R and n_O , resulting in a nonnegative entry wedge $\Delta n = n_R - n_O \geq 0$ despite the associated loss in production efficiency.⁸

A period of extreme polarisation between Western Europeans on the one hand and (native) people from America, Africa and Oceania were the heydays of colonisation from the 16th until the 19th century. Interestingly, in the colonies which were set up as extractive states European merchants often obtained slaves and spices from local chiefs who were thus allowed to own property and do business. Once brought to Europe or Neo-European colonies like the United States however where political accountability was higher, non-Europeans were completely excluded from economic activity and were not allowed to own property. In the remainder of the paper we constrain ourselves to the case with limited polarisation.

4.2.5 Polarisation and political accountability

We now take a closer look at the entry wedge Δn and the underlying rates of entry n_R and n_O .

Proposition 16. *Entry wedge $\Delta n = n_R - n_O$*

⁸Without polarisation, for $\alpha = \frac{1}{2}$, entry satisfies $n = n_R = n_O = \frac{m}{3-\beta}$ with $\frac{\partial n}{\partial \beta} > 0$. In this case entry is nondiscriminatory and increases in political accountability β , as in Perotti and Volpin (2007).

- a) increases in polarisation α and
- b) is maximised for intermediate political accountability β .

Proof. It is easy to see from (4.26) that $\frac{\partial \Delta n}{\partial \alpha} > 0$. Then we compute $\frac{\partial \Delta n}{\partial \beta} = 0$ to find the β^* for which Δn is widest:

$$\beta^* = \frac{6 - 4\sqrt{6[(1 - \alpha - \rho)(\alpha - \rho) + 4\alpha\rho(1 + \alpha\rho - \alpha - \rho)]}}{6 + 16[(\alpha + \rho - 1)(\alpha - \rho) - 4\alpha\rho(1 + \alpha\rho - \alpha - \rho)]} \quad (4.30)$$

which satisfies $\beta^* \in [0, 1]$.

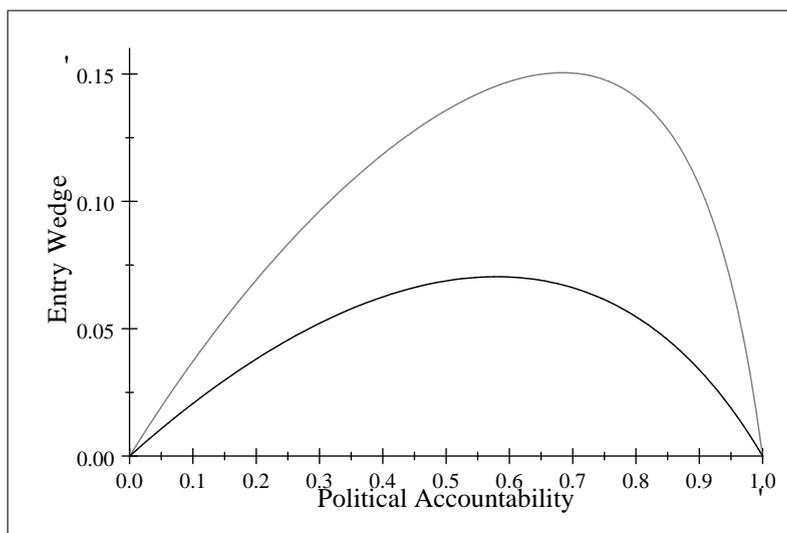
□

Figure 1 clearly shows our main prediction: firm ownership is most discriminatory when political accountability β is intermediate. To get an intuition for this result consider the points for which $\beta = 0$ and $\beta = 1$.

When $\beta = 0$ the politician values only contributions $k(n_R, n_O)$ as in (4.13). As $k(n_R, n_O)$ is a share of total firm income, the politician maximises total income by limiting entry. This limited entry is nondiscriminatory, because a bias in entry raises average production costs, reduces total income and political contributions.

When $\beta = 1$ the politician allows free entry to maximise production and consumption utility. Less and less skilled citizens enter, until the marginal entrant in both constituencies R and O makes zero profits. Hence, to create an entry bias (thus raise n_R and/or lower n_O), total entry n has to be reduced to relax the participation constraint (4.11) of the citizens in R . Because such a decrease in n reduces social welfare, the politician does not bias entry for $\beta = 1$ despite being tempted due to polarisation.

For intermediate accountability the politician does not maximise total profits nor social welfare, but a weighted average of the two. Polarisation now induces the politician to set discriminatory entry rates for which $n_R > n_O$ and $s_R(n_R, n_O) > s_O(n_R, n_O)$.

Figure 4.1: Entry wedge for $\rho = \frac{1}{3}$, $\alpha = \frac{2}{3}$ (black) and $\alpha = \frac{4}{5}$ (grey).

Naturally, greater polarisation α induces more discriminatory firm entry to increase social welfare of the ruling citizens, $s_R(n_R, n_O)$. This effect can also be seen in figure 1, by comparing the black line for $\alpha = \frac{2}{3}$ to the grey line with $\alpha = \frac{4}{5}$. The effect of changing polarisation on entry itself is summarised in the following corollary.

Corollary 1. *A surge in polarisation α induces*

- a) *a rise in n_R*
- b) *a reduction in n_O*
- c) *a reduction in n*

Proof. Using (4.20) and (4.21) we take first order conditions to find $\frac{\partial n_R}{\partial \alpha} > 0$, $\frac{\partial n_O}{\partial \alpha} < 0$ and $\frac{\partial n}{\partial \alpha} < 0$. □

When polarisation α increases, the politician increases n_R and decreases n_O to transfer a greater share of profits to R and support $s_R(n_R, n_O)$. As a result of increased bias, average production costs increase and a larger share of profits flows to the ruling class. A reduction in total entry n induces higher average profits and

increases the effectiveness of biasing entry as mechanism to redistribute towards constituency R .

Corollary 2. *Entry n increases in political accountability β .*

Proof. Using (4.27) it follows that $\frac{\partial n}{\partial \beta} > 0$ □

When political accountability β increases, the politician puts greater value on overall social welfare $S(n_R, n_O)$ relative to political contributions $k(n_R, n_O)$. Because $S(n_R, n_O)$ increases in entry n and $k(n_R, n_O)$ decrease in n , n increases in β .

Figures 2 and 3 depict entry as a share of maximum entry m . Specifically we depict $\frac{n_R}{m}$ (thick solid) and $\frac{n_O}{m}$ (thin dash) in figure 2 and $\frac{n}{m}$ (thin solid) in figure 3 for $\alpha = \frac{2}{3}$ (black) and $\alpha = \frac{4}{5}$ (grey). The figures confirm that (i) entry is most discriminatory for intermediate accountability β , (ii) ruling entry n_R rises and opposition entry n_O falls in polarisation α , (iii) total entry n falls in polarisation α and (iv) total entry n rises in accountability β . Notice that for high enough polarisation α , for example $\alpha = \frac{4}{5}$, n_R exceeds the level of entry m for high levels of β , when the politician seeks high social welfare while keeping entry biased towards constituency R . Because n_O is very low in this case, all entrepreneurs in R still make a profit despite some of them have high production costs.⁹ In the same spirit, entry n_O may fall in accountability β when polarisation is high.

4.2.6 Inclusiveness of Government

As seen from equation (4.26) the wedge Δn is also affected by inclusiveness of the government ρ , which we investigate closer in this section.

Proposition 17. *Wedge Δn is larger for a more inclusive government ρ , except for already large majorities $\rho \in (\frac{1}{2}, 1]$ in countries with a high level of political accountability $\beta > \beta^{**}$. In words, entry discrimination is only reduced by making*

⁹Even the least efficient firm in R with costs n_R still makes a profit and n_O remains positive as long as $\alpha < \frac{1}{2} + \frac{1}{4}\sqrt{2}$, which is exactly what we assume.

Figure 4.2: Entry per constituency as share of m for $\rho = \frac{1}{3}$, $\alpha = \frac{2}{3}$ (black) and $\alpha = \frac{4}{5}$ (grey).

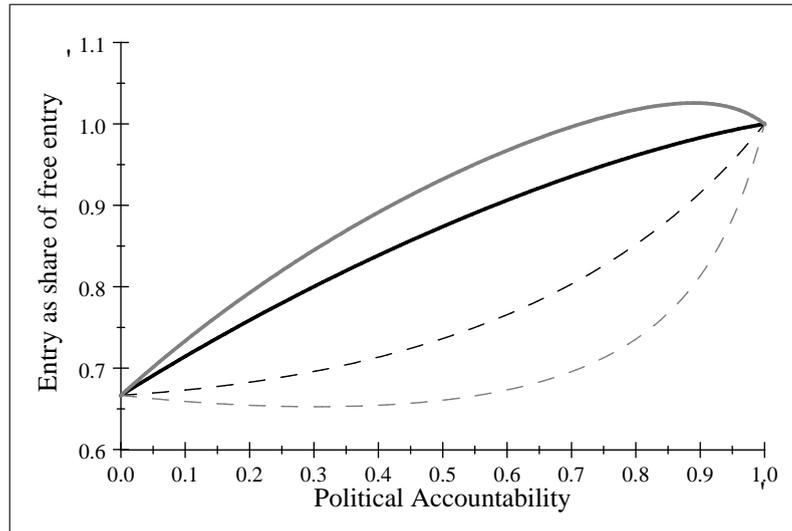
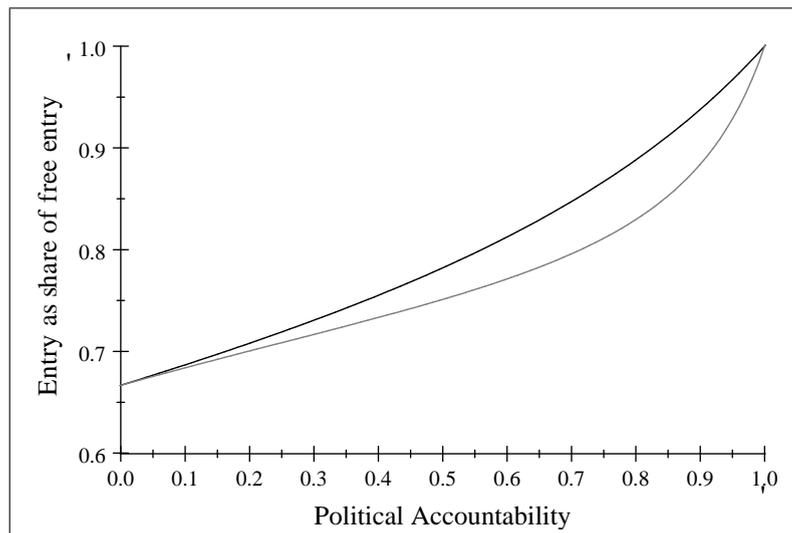


Figure 4.3: Total entry as share of m for $\rho = \frac{1}{3}$, $\alpha = \frac{2}{3}$ (black) and $\alpha = \frac{4}{5}$ (grey).



the government more inclusive if political accountability is sufficiently high and the inclusiveness is pushed beyond $\rho = \frac{1}{2}$.

Proof. Use (4.26) and take the derivate $\frac{\partial \Delta n}{\partial \rho} = 0$ to find

$$\beta^{**} = \frac{1}{1 - 4(2\alpha - 1)(1 - 2\rho)} \quad (4.31)$$

with $\beta^{**} \in [0, 1]$ when $\rho > \frac{1}{2}$.¹⁰ □

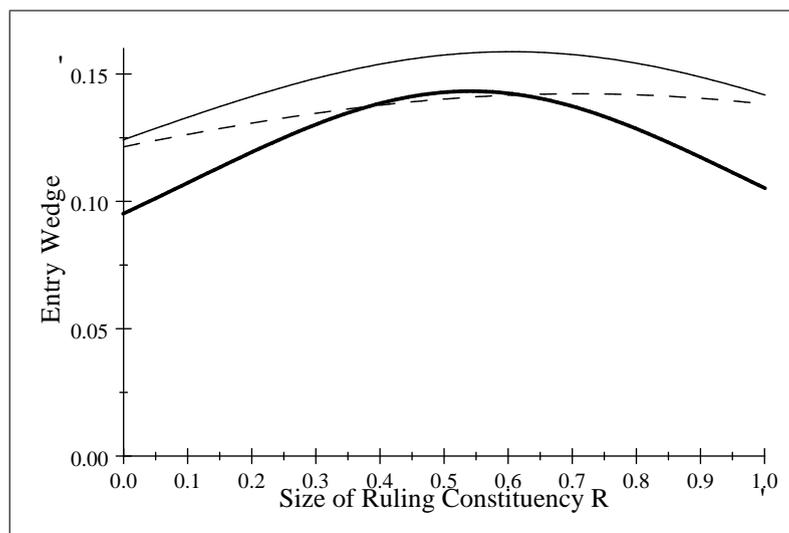
With a more inclusive government the politician seeks to increase bias Δn to increase income to a larger constituency R . The size of this bias depends on the trade-off between rising income for R and the associated larger production costs. The larger accountability β and the more inclusive the government (higher ρ), the smaller the increment in the ruling class' profits by increasing Δn . The reason for this result is twofold. Firstly, when β goes up total entry increases and profits per firm fall, reducing the transfer to R by substituting an entrepreneur in O by one in R . Secondly, when ρ is increased, n_R constitutes a larger share of n . Therefore raising n_R as opposed to n_O has a larger negative effect on prices and thus on profits. Therefore, a more inclusive government induces a larger wedge Δn when β and ρ are sufficiently small and increase wedge Δn if β and ρ are sufficiently large.

In figure 4 we depict wedge Δn as function of inclusiveness of government ρ for different political accountability β and is complementary to figure 15. Indeed, Δn is highest for the intermediate β (thin line), corroborating figure 1. Figure 4 also shows that for higher β the fall in Δn starts for a lower inclusiveness of government ρ .¹¹ Finally we see that curvature increases in β . This means that ρ affects Δn more when β is high. A policy implication is that the best way to gradually reduce ownership bias over time is to first increase political accountability, then seek to

¹⁰Note that $\frac{\partial \Delta n}{\partial \rho} > 0$ is equivalent to $\frac{\partial n_R}{\partial \rho} > \frac{\partial n_O}{\partial \rho}$.

¹¹For $\beta < \frac{1}{2}$, the wedge Δn increases in the inclusiveness of government ρ , as shown in the proposition.

Figure 4.4: Entry wedge for $\alpha = \frac{4}{5}$, $\beta = \frac{5}{6}$ (thick), $\beta = \frac{2}{3}$ (thin) and $\beta = \frac{1}{2}$ (dash).



increase the inclusiveness of government (see the dashed line in figure 4). The inclusiveness of government thus matters more for discrimination of entry in more democratic countries. The results in figure 4 support the empirical finding that the combination of higher accountability and an inclusive government is most effective at significantly reducing ethnic tensions (Stewart, 2000 and 2002).

4.2.7 Debt

In our model a firm's production costs and debt are equal to the skill of its owner, σ_e . The entry rates set by the politician determine the identity of entrants and thus the maximum and average firm debt.

Corollary 3. *Average debt is $E[D] = \frac{1}{2} \frac{\rho(n_R)^2 + (1-\rho)(n_O)^2}{n}$, which increases in political accountability β .*

Maximum debt is n_R , which increases in β for relatively small polarisation-inclusiveness ratio for which $\alpha \leq \alpha_ = \frac{2-\rho}{3-2\rho}$. Maximum debt has a maximum for intermediate β for polarisation satisfying $\alpha > \alpha_*$ (see figure 2).*

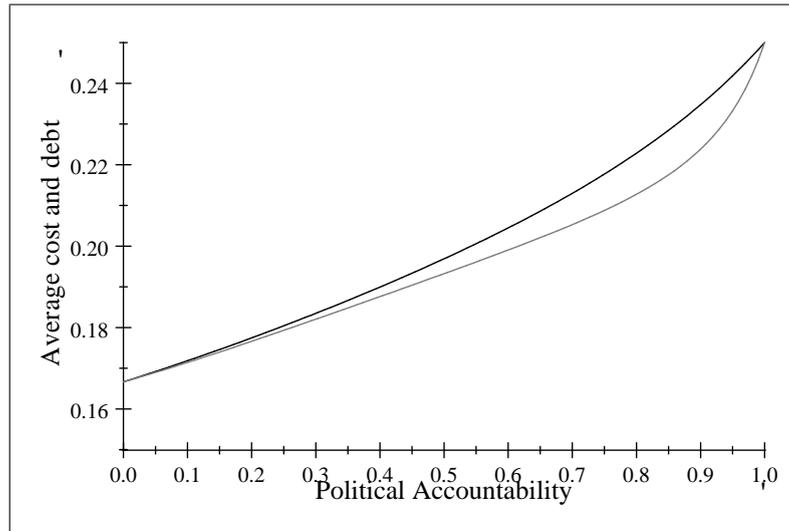
Proof. After substituting (4.20) and (4.21) in the expression for $E[D]$ it follows that $\frac{\partial E[D]}{\partial \beta} > 0$, given the restriction on polarisation $\alpha \in [\frac{1}{2}, \frac{1}{2} + \frac{1}{4}\sqrt{2}]$.

Concerning maximum debt, first observe that $n_R = n = \frac{1}{3}$ for $\beta = 0$ and $n_R = m = \frac{1}{2}$ when $\beta = 1$. We then find the level of polarisation $\alpha^* = \frac{2-\rho}{3-2\rho}$ that results in n_R having its global maximum $n_R = m$ exactly at $\beta = 1$. Because n_R increases in α for any $\beta \in [0, 1]$, and α beyond α^* results in a larger n_R everywhere along the interval $\beta \in [0, 1]$. This implies that close to $\beta = 1$ it is the case that $n_R > m$, creating a maximum for n_R at some $\beta < 1$. Given that $n_R = m$ at $\beta = 1$, and that $\frac{\partial n_R}{\partial \alpha} > 0$ for $\beta \in (0, 1)$ an $\alpha > \alpha_*$ creates a maximum for $n_R > m$ for some $\beta < 1$. □

Despite entry being discriminatory, total entry n goes up as accountability increases. As new entrants are on average less skilled, average costs and debt increase in β as shown in figure 4. Because profits fall over β , firm leverage increases even faster. The most indebted firm is the least skilled entrant from the ruling class, having debt n_R . In highly polarised countries, entry is highly discriminatory and debt level n_R is maximal for accountability less than one. This was already pointed out for $\alpha = \frac{4}{5}$ in figure 2.

4.3 Conclusion

Our paper argues that in countries where the population is divided by ethnic, language or other ex ante traits, and the institutional framework is insufficient to constrain inefficient redistribution, politicians cater to core constituents by favouring their entry and access to credit independently of their efficiency. In our model a country's politician sets discriminatory entry levels for members of his constituency and outsiders, determining firm ownership. Potential entrepreneurs form an interest group seeking to convince the politician to limit competition. Limiting competition

Figure 4.5: Average debt for $\rho = \frac{1}{3}$, $\alpha = \frac{2}{3}$ (black) and $\alpha = \frac{4}{5}$ (grey).

protects profits, but reduces social welfare. We show that entry is more biased when polarisation is high and when political accountability is intermediate. Moreover, total entry (and production) falls with polarisation and increases with political accountability. We also show that the first raising accountability and then pushing for a more inclusive government (representing at least half of the population) is the best way to gradually reduce entry bias.

The model can be extended in multiple directions. One could consider a multi-period setting in which citizens become more efficient the longer they own a firm. Moreover, it is interesting to investigate processes to choose the politician, given the politician's power to bias entry and thus target profits. Alternatively, risk taking by firms owners depending on their expected profits (and hence production costs and bias) could be introduced.

5

Conclusion

This thesis describes how politicians shape the level and composition of entry. Political choices affect licensing or the distribution of loans and thus determine market access. Citizens recognise politicians' power to determine the level and composition of entry and form interest groups to jointly offer political contributions in exchange for preferential treatment. The effectiveness of these offers depends on the influence of consumers, who suffer from political limitations on entry. This ability to question and constrain political action is labelled political accountability, which drives many of this thesis' results. The three chapters all apply the same theoretical framework to distinct political choices affecting the outcome of the clash on optimal entry between consumers and entrepreneurs.

Chapter two considers the political choice to not enforce a rule, control entry directly and be illegally bribed *or* commit to a rule, control entry indirectly via this rule and be legally lobbied. It investigates the formation of interest groups under both 'selection technologies' and shows that being bribed results in higher political contributions and a lower level of entry than being lobbied. The explanation lies in the free-riding advantage that a rule creates for those citizens with 'strong' characteristics easily satisfying the rule. As opposed to a situation without enforced

rule, the 'strong' can lobby for a rule allowing them to enter while excluding the 'weak' while the reverse is impossible. In equilibrium, the politician prefers to be bribed when political accountability is low. Beyond a certain threshold the illegality of bribes induces the politician to regulate entry and be legally lobbied. Making lobbying illegal would be counterproductive as it induces the politician to revert to being bribed, reducing entry and increasing political contributions.

Chapter three focuses on access to finance and specifically on the choice between state or private control of banks. The idea is that whoever controls banks decides on who gets a loan and on the intensity of monitoring, determining how much of the loan needs to be repaid. The higher the repayment rate, the greater is the resilience of banks to aggregate shocks and the less likely are bank defaults. State control turns out to be politically optimal for low levels of accountability after which control shifts to the private sector. Upon this transition at intermediate accountability, banks are captured by a small group of entrepreneurs who do not internalise the social costs of bank default. Therefore, funneling of resources and the risk of bank default jump. As accountability rises further, the politician seeks to reduce funneling by lowering political contributions such as to leave more rents when banks are solvent. Therefore, pushing countries to privatise even before they naturally choose to do so leads to an increase in the risk of bank default because the resulting private banks will be captured in weak institutional environments.

In chapter four the population is segmented and the politician may cater to core constituents by favouring their entry independent of their efficiency. The model shows that entry does increase when accountability increases but is most targeted when political accountability is *intermediate*. The intuition is that when accountability is zero, the politician maximises and captures firm profits by allowing a small but efficient set of entrepreneurs to produce. When accountability is perfect the politician maximises production (and consumption) by allowing free and hence effi-

cient entry. Only when accountability is intermediate efficiency does not dominate and entry is biased.

The thesis shows that countries when political accountability is intermediate: politicians start enforcing rules and being lobbied rather than bribed, bank control shifts from the state to the private sector and firm ownership is most biased towards the executive's (ethnic) group.

6

List of variables

a = strength of demand

α = polarisation

B = bribing (also as subscript)

β = political accountability

c = subscript denoting consumer(s)

C = bank control (state banking S or private banking P)

D = debt of a firm

Δn = entry wedge between ruling class and opposition

δ = investor protection

e = subscript for entrepreneur(s)

ε = shock

E = inefficiency cost of state banking

f = price of the final good

ϕ = legality

G = governance structure (bribing B or lobbying L)

H = home constituency or community (ruling class R or opposition O)

i = subscript denoting citizen(s) - consumer or entrepreneur

CHAPTER 6. LIST OF VARIABLES

I = initial investment required to start a firm

k = political contributions

K = contribution structure (of different contributions k by interest groups)

l = fixed cost of retrieving loans in case of bank failure

L = lobbying (also as subscript)

m = entry or share of entrepreneurs in total population if unconstrained

n = entry or share of entrepreneurs in total population

N = entry structure (different interest groups)

O = opposition (also as subscript)

p = subscript denoting the politician

P = private banking (also as subscript)

q = coalition of citizens

Q = coalition structure (of different coalitions q)

π = profits

R = ruling community (also as subscript)

ρ = size of ruling community as share of population

s = social welfare

S = state banking (also as subscript)

σ = entrepreneurial skill

θ = funneling as share of total lending

U = utility

ω = endowment for consumption per citizen

x_i = consumption of the numeraire good by citizen i

X_p = politician's utility in excess of utility from social optimum

y_i = consumption of the final good by citizen i

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Samenvatting (Summary in Dutch)

Politieke markttoetreding

Wie wat produceert en verkoopt is van belang. Het bepaalt hoe hoog productie is, prijzen liggen en winsten zijn. Het bepaalt dus hoeveel we ons allemaal kunnen veroorloven. Het aantal ondernemers en hun identiteit wordt politiek bepaald met behulp van licenties, subsidies of door het beïnvloeden van leenvoorwaarden. Dit stuurvermogen plaatst politici centraal in strijd om exclusieve markttoegang en de bijbehorende winsten. Door middel van hogere toetredingsbarrières verlagen politici productie en aanbod, resulterend in hogere prijzen en marges. Ondernemers vormen belangengroepen om gezamenlijk te ijveren voor exclusieve en beperkte markttoegang. Een deel van de winst wordt gebruikt om politici te verleiden barrières op te werpen ondanks de nadelige effecten van hogere prijzen voor consumenten. De ontvankelijkheid van politici ten overstaande van het geld van belangengroepen wordt begrensd door het democratisch gehalte van het betreffende systeem. Hoe vrijer verkiezingen en media zijn des te groter de waarde die politici hechten aan hogere sociale welvaart. De drie artikelen in dit proefschrift maken gebruik van eenzelfde speltheoretisch kader maar belichten allen een verschillende kant van de politieke invloed op markttoetreding. Het eerste artikel beschrijft de verschillende vorming van belangengroepen als regels al dan niet gehandhaafd worden. Bij omkoping bepalen politici direct de identiteit van toetreders terwijl lobbyen voor gehandhaafde regels alleen langs ondernemers' eigenschappen toetreding beïnvloed¹. In tegenstelling tot omkoping kan daarom bij lobbyen de ene groep de andere uitsluiten terwijl omgekeerd onmogelijk is. Dit verschil heeft grote gevolgen op de vorming van zo sterk mogelijke belangengroepen. Het tweede artikel onderzoekt de politieke keuze voor staats- of privaat eigendom van banken. Om een lening te bemachtigen lobbyen ondernemers voor staatsleningen of een bankhandvest om zo een banks leenbeleid te

¹Denk bijvoorbeeld aan de invloed van financiële regels op het benodigde onderpand

controleren. Om hun inkomsten te maximaliseren kiezen politici voor staatsbanken als het lands democratisch gehalte beperkt is. De lagere operationele efficiëntie van staatsbanken leidt tot privatisering bij stijgende democratische vrijheid. Deze transitie resulteert in een hoger risicoprofiel, omdat private bankeigenaren de negatieve externatiteiten van een bankencrisis niet in beschouwing nemen. Om het risico in private banken in een sterke democratie te verminderen, vragen politici lagere bijdragen van ondernemers die desgevolgd meer belang bij stabiliteit hebben. Een data-analyse bevestigt de voorspelde eigendomsstructuur en risicohouding van banken voor verschillende niveaus van democratische controle. Het laatste artikel bekijkt een samenleving met een gesegmenteerde bevolking waarin politici hun bevolkingsgroep bij markttoetreding proberen voor te trekken. Het is interessant om te ontdekken dat ongelijkheid tussen bevolkingsgroepen het grootst is voor gemiddelde democratische controle. Bij lage controle maximaliseren politici bedrijfsinkomsten door een zo efficiënt mogelijke maar kleine groep producenten to te laten. Bij hoge controle maximaliseren politici de consumptiemogelijkheden van de bevolking door alle toetredingsbarrières te verwijderen. Bij zowel lage als hoge democratische controle is de efficiëntie van ondernemers dus oorslaggevend bij toetreding. Alleen bij een gemiddeld democratisch gehalte, wanneer efficiëntie niet cruciaal is, is toetreding ongelijk voor verschillende bevolkingsgroepen. Daarnaast is totale toetreding lager met een meer gesegmenteerde bevolking.

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