The politics of entry

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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 responsivess 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

[1]Limiting 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

[2]In 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, the 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

[3] In 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.

[4] Again, 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

$$n = \rho n_R + (1 - \rho) n_O \tag{4.1}$$

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

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

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

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

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,

$$S_R(n_R, n_O) = \rho s_R(n_R, n_O) \tag{4.4}$$

and

$$S_O(n_R, n_O) = (1 - \rho) s_O(n_R, n_O) \tag{4.5}$$

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

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

and that of the opposition is

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

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 substract endowments ω in the politician's utility because this is the minimum social welfare in the model,

[5]Social 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

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

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 expeced utility of a consumer c, the expected utility of an entrepreneur e is

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

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

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

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

$$\pi_{e,H} \geq 0 \tag{4.11}$$

The interest group representing all entrepreneurs maximises the sum of operating

[6] This 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

[7] What 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

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

The expected utility of a consumer is

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

and that of an entrepreneur is

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

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

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

and social welfare is

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

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 $n = \rho n_R + (1-\rho)n_O$. □

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 $\alpha \in (frac12, \frac{1}{2} + \frac{1}{4}\sqrt{2}]$ 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 $\alpha \in (frac12, \frac{1}{2} + \frac{1}{4}\sqrt{2}]$, 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

$$n_O = \frac{a}{b+c+d} \tag{4.21}$$

with

$$\begin{aligned} a =& 1 - 2(2\alpha-1)\beta\rho \\ & - (2\alpha-1)[2\alpha(1+4\rho-4\rho^2)+1-6\rho+4\rho^2]\beta^2 \end{aligned} \tag{4.22}$$

$$b = 8(2\alpha-1)^2\beta^2\rho^2 \tag{4.23}$$

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

and

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

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

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

and total entry is

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

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

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

and

$$n_O = 0 \tag{4.29}$$

□

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 on 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* $\Delta n = n_R - n_O$

[8]Without 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 $\beta^* \in [0, 1]$.

□

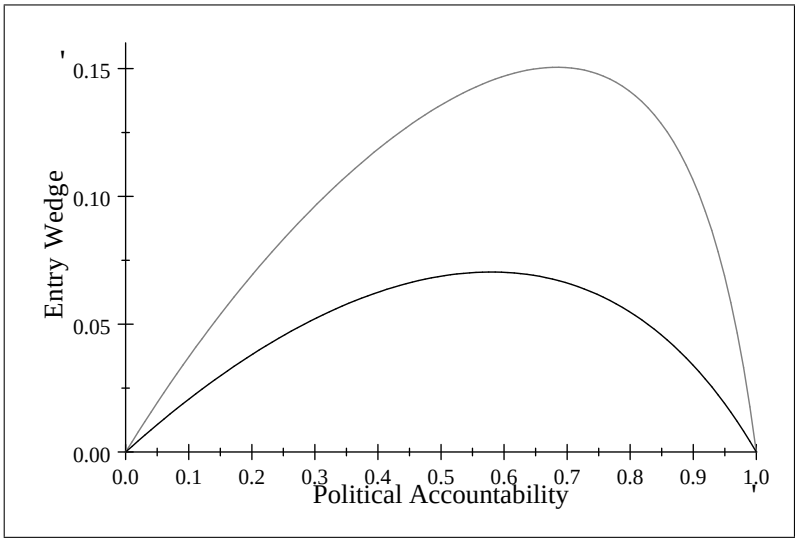
Figure 1 clearly shows our main prediction: firm ownership is most discriminatory when political accountability β is intermediate. To get an intuition for this result consider the points for which $\beta = 0$ and $\beta = 1$.

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 been 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*

[9] Even 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).

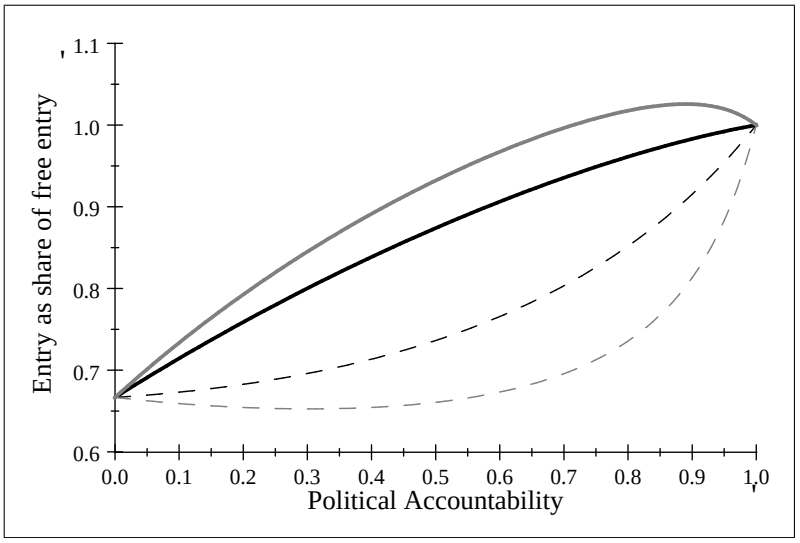
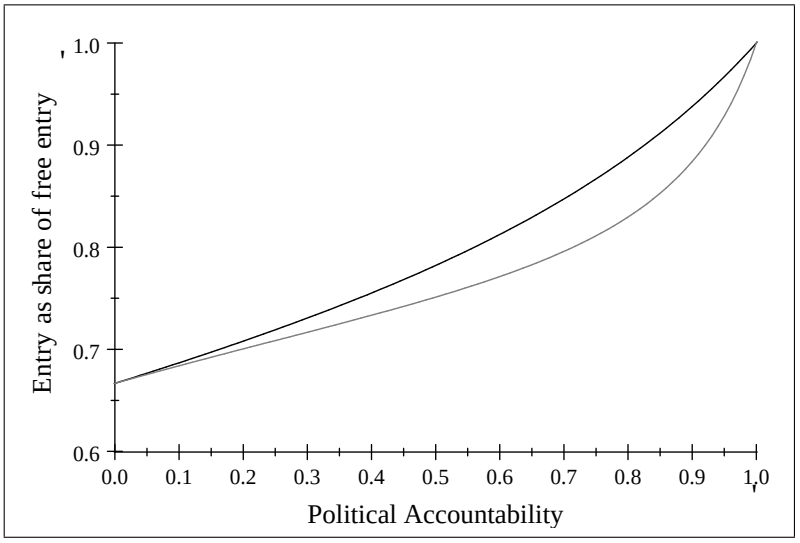


Figure 4.3: Total entry as share of m for $\rho = \frac{1}{3}$, $\alpha = \frac{2}{3}$(black) and $\alpha = \frac{4}{5}$(grey).



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

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

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

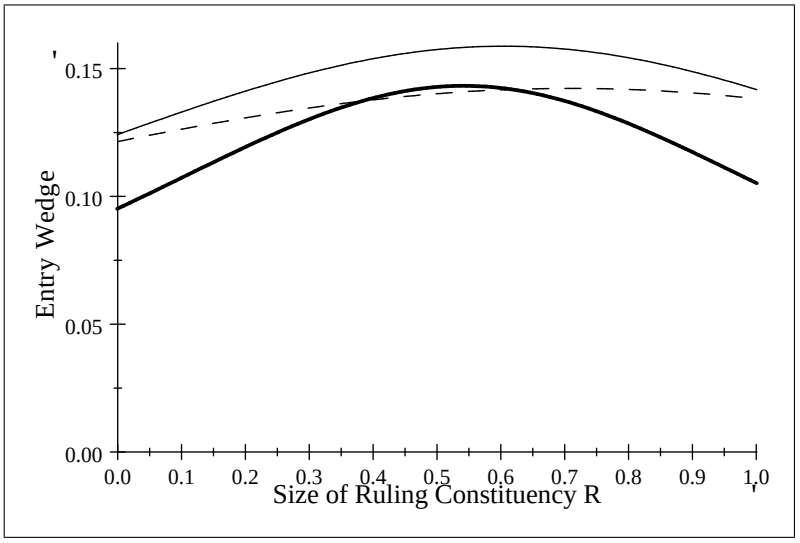
With a more inclusive government the politician seeks to increase bias Δn to increase income to a larger constituency R. The size of this bias depends on the trade-off between rising income for R and the associated larger production costs. The larger accountability β and the more inclusive the government (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, $\Delta n$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

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

[11] For $\beta < \frac{1}{2}$, 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-inclusivess 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 $\alpha \in [\frac{1}{2}, \frac{1}{2} + \frac{1}{4}\sqrt{2}]$.

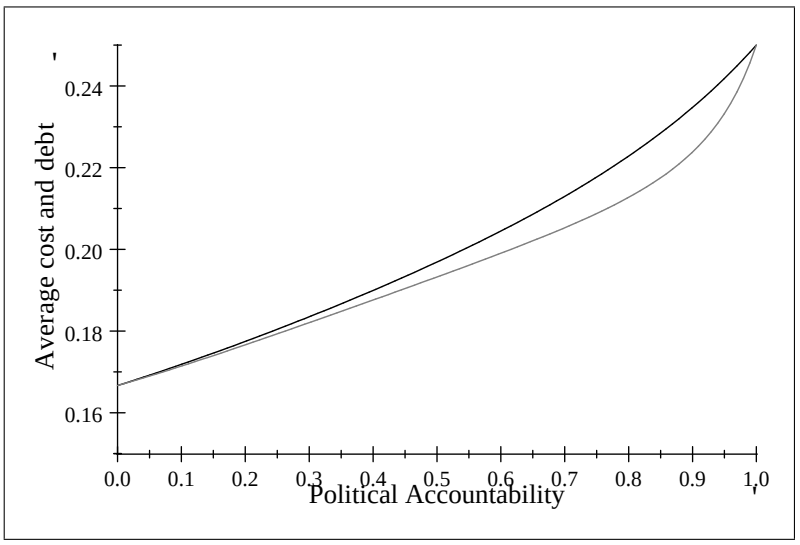
Concerning maximum debt, first observe that $n_R = n = \frac{1}{3})$ for $\beta = 0$ and $n_R = m = \frac{1}{2}$ when $\beta = 1$. We then find the level of polarisation $\alpha^* = \frac{2-\rho}{3-2\rho}$ that results in n_R having its global maximum $n_R = m$ exactly at $\beta = 1$. Because n_R increases in a for any $\beta \in [0, 1]$, an a 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 to 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.