

Democratic Spillovers— rent-seeking elites, mobile capital, and the coevolution of political institutions*

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Abstract

Capital mobility is a channel of either positive or negative institutional spillovers between countries. This article emphasizes the importance of the distribution of capital in deciding which type of spillovers will play out. Widely distributed capital ownership disciplines a rent-seeking elite, and favors political inclusiveness. Conversely, when capital is concentrated, the elite take advantage of the existence of an alternative jurisdiction to increase rent extraction and cement their rule. This highlights a potentially dysfunctional role played by a neighbor with good institutions, and suggests an endogenous path for the emergence of tax havens.

Keywords: tax competition, political transitions, political spillovers, tax evasion, patrimonial regimes

JEL classification: H26, H70, P48

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1 Introduction

A credible exit strategy allows a client to influence the decisions of a company (Hirschman, 1970), or a citizen the policies of a government. In particular, the owners of capital should be expected to take advantage of the mobility of capital across jurisdictions to influence policies and institutions. Indeed, building on the work of Brennan and Buchanan (1977, 1980), a large body of literature argues that capital mobility is a powerful force to discipline governments (see in particular Chap. 4.2 in Treisman, 2007; Edwards and Keen, 1996; Ihuri and Yang, 2012; Weingast, 2014). This influence over policies has distributional and political consequences. Most interestingly for my purpose here, Simmons et al. (2006) underline the importance of the competition for the location of mobile capital as a mechanism for the diffusion of democracy across borders.

Capital mobility is not associated only with the diffusion of democracy, however. Some scholars argue, on the contrary, that openness of the capital account in developing countries may in fact help their elite to tighten their grip on political power (Cardoso and Faletto, 1979), reinforce class relations, and use policy for purposes other than development. The elite may seek to attract foreign capital, and favor the wealthy disproportionately in the process. They may alternatively take advantage of openness to shift their own assets abroad. Weaker incentives to implement good policies may encourage rent-seeking activities instead, with adverse developmental consequences.¹ Preliminary evidence in Ajayi and Ndikumana (2015) documents this trend: several authors argue that the African continent as a whole may be a creditor to the rest of the world. This is an unsettling claim: the scarcity of capital in Africa should encourage flows to the continent, rather than from the continent. This is also troubling: there is little hope for sustainable growth in Africa if funds destined to be invested there are actually moved towards safer regions of the world.

Diffusion of democracy and tightening of the grip of elites on power are two seemingly contradictory outcomes, both associated with capital mobility. This paper introduces a simple model to discuss when capital mobility disciplines policies and favors the diffusion of democracy or, conversely, when it exacerbates rent-extraction by the elite. This allows me to study the dynamic

¹In patrimonial regimes, a narrow elite all but privatizes a large share of the resources of a country (Bates, 1981; Levi, 1988; Grossman and Noh, 1994; Robinson, 1998; La Ferrara and Bates, 2001; Acemoglu, 2003; Acemoglu et al., 2004; Acemoglu and Robinson, 2006, to name but a few key pieces of work in a prolific and far-reaching field). The main motive for policy decisions and political involvement becomes the plundering of the resources.

effect of capital mobility on political inclusiveness. On the one hand, owners of capital outside of the elite discipline the government's policies, rein in rent extraction, limit redistribution, and favor public input provision. On the other hand, when the elite control the capital, shifting it abroad allows them to increase rent extraction and reduce public input provision. In the former case, capital mobility may force the elite to become more inclusive. In the latter case, it consolidates the hold of elites over political power. Presumptively, economists tend to assume that mobility is good, in line with Hirschman's insight. This paper shows that imperfect institutions may force to nuance, or even reverse that intuition.

The model accounts for two countries of possibly different size. In each country, elites are able to divert a share of the tax revenue for their own private benefit. Capital is supplied elastically, so that the elite faces a trade-off between the rent-seeking and the economic efficiency motives. Rent-seeking is a stronger motive when the elite is narrow, but loses ground to the efficiency motive as the elite become more inclusive. I consider dynasties of agents, both in the masses and in the elite. Elite status can be acquired thanks to the bequest left by the previous generation. As a result, the evolution of wealth across generations determines the evolution of the political regime. In that context, the elite of the second jurisdiction may try to attract the capital available in the first jurisdiction.

The model provides three main results. First, when the owners of capital are outside the elite, the competing jurisdiction imposes a limit on the ability to extract rents from the population. Since rent extraction is constrained, the income of the elite shrinks while that of the owners of capital in the masses rises. Possibly, this leads to a growing number of individuals able to enter the elite, until people are indifferent between being in the elite and being in the masses. All owners of the mobile asset would end up having access to elite status ("democratization").

Second, when capital is concentrated in the elite, the competing jurisdiction may allow the elite to protect their wealth while increasing the level of rent-extraction. The income of the elite increases while that of the captive masses decreases. Possibly, this leads to fewer people able to claim elite status, and the elite is made more stable. This raises an important issue: the responsibility of industrial countries in the persistence of "patrimonial regimes" in poorer regions of the world.

Third, a small country may be tempted to attract capital from a larger neighbor. The elite there would fight attempts from members of the masses to evade their taxes. However they might claim that possibility for themselves. "Tax evasion" can sometimes dwarf both the domestic extraction motive and

the domestic efficiency motive. To put it simply, the model predicts that tax havens are the inevitable companions of large countries where the masses are captive.

The model yields further predictions. The political dynamics in the relatively more efficient industrial country is negatively affected by the persistence of patrimonial regimes. Identically, tax evasion encourages rent extraction in the larger country. Finally, patrimonial regimes may be strengthened when they take advantage of the existence of tax havens.

The following section examines the related literature. Section 3 develops the general framework of analysis, with a description of the productive sector and the political structure under an external constraint on policy. Section 4 analyzes the political dynamics in the baseline model. Section 5 considers the case where capital owners are outside the elite, and section 6 the case where they are in the elite.

2 Literature review

The key contribution of this paper could be argued to formalize an argument from Mahon (1996) and Boix (2003), already hinted at in Bates and Lien (1985): when the owners of the mobile asset are not in the government, they extract an extension of the franchise; but when they have sufficient ties with the government, the dynamics may actually be reversed, with a strengthening of the elite in place. This provides a framework to discuss the coevolution of political institutions in integrated countries, which unifies several strands of the literature.

First, the “domino theory” is possibly the most influential model of political contagion of the second half of the twentieth century. In the more narrow perspective of this paper, the international diffusion of democracy and good institutions has been documented only relatively recently (Huntington, 1991; Starr, 1991; Markoff, 1996; O’Loughlin et al., 1998; Whitehead, 2001; Gleditsch and Ward, 2006). The usual interpretation of this diffusion is a varying combination of several mechanisms, coercion, learning, emulation, and the competition between polities for the location of assets (Simmons et al., 2006). This paper formalizes this fourth argument (Sandholtz and Gray, 2003; Gerring and Thacker, 2005), though it considers only the inclusiveness of the political process. This is only one aspect of democracy, admittedly far from the formal definition of the term, yet possibly a key characteristic of actual democratic systems. The contingent prediction of this paper, positive democratic spillovers in a country with mobile masses, and negative in a country where

the masses are captive, may account for a weaker-than-anticipated evidence of the diffusion effect (Leeson and Dean, 2009).

Second, while Western liberal democracies, especially the United States and the European Union, undeniably used their foreign policy to promote democracies, evidence shows that they sometimes actively supported dictatorships (Robinson, 1996; Schmitz, 1999). This paper argues that liberal democracies may actually help buttress patrimonial regimes even when they do not interfere (Malesky, 2008, explores a related, if not identical, argument). Along that line, a long tradition of economic thought, often dubbed as the school of the “dependency theory”, has been describing the North-South divide as a self-reinforcing pattern. Among the several mechanisms this field of study has uncovered, Cardoso and Faletto (1979, p. 149) emphasize that international capital alters the patterns of class relations in developing countries, eventually hijacking policies for other purposes than development. This paper provides a formal model of such a mechanism.

In the same line of arguments, a recent paper by Acemoglu et al. (2012) makes a case for the asymmetric coevolution of the institutions of developed countries. Their argument is that the comprehensive social welfare systems of certain countries (Scandinavia) favors the institutions of unbridled capitalism in others (the United States). Generally, though, this issue of the coevolution of political institutions has received scant attention.

Third, simply because they exist, liberal democracies offer a possible destination for capital flight. In small countries with poor institutions, political and economic elite tend to allocate their assets abroad, while implementing all the more rent-seeking policies at home. This is documented by Collier et al. (2004) and Ndikumana and Boyce (2003, 2010, 2011) in the case of Sub-Saharan Africa, and more succinctly in Ndikumana and Boyce (2012) in the case of Northern Africa. The political impact of this capital flight has received a lot of media attention recently, under the headline of “ill-gotten assets”. To my knowledge, however, it has not received any formal treatment so far.

Fourth, the model predicts that the policies in small countries may be diverted towards attracting foreign capital, effectively turning such countries into tax havens. This is in line with the more elaborate model of tax havens suggested in Slemrod and Wilson (2009). The evidence in Dharmapala and Hines Jr. (2009) suggests that such policies include investment in market-oriented institutions. Generally, while tax havens have received a lot of media attention too, data unavailability made their systematic documentation difficult. A notable exception is Zucman (2013), who provides a detailed account of the process of capital flight from France into Switzerland, and a first sociological characterization of tax evaders, consistent with the model. Slemrod

(2007) and Zucman (2014) provide a review of the literature.

3 Economic determinants: the stage game

3.1 The setup

The economy is composed of two countries, default country A and country B (“the competing jurisdiction” / “abroad”). The relative size of the population of country B is n . n can be very large when B is interpreted as the rest of the world, or very small when I will consider the case of tax havens.

The setup within each country follows closely Ales and Verrier (1996). Each individual has one offspring and generations are altruistically linked by a “joy of giving” motive for bequests². Preferences are described by a common utility function $U(c_t, b_{t+1})$, where c_t is consumption at time t and b_{t+1} the bequest left for a child born at time $t+1$. U is twice continuously differentiable, increasing in each argument c_t and b_{t+1} , strictly concave and homothetic. The marginal rate of substitution $\frac{U'_c}{U'_b}$ between c_t and b_{t+1} is therefore an increasing function ψ of $\frac{b_{t+1}}{c_t}$. Let $\rho = \psi^{-1}(1)$.

Individuals are each endowed with one unit of capital, which they can allocate to any of the two sectors in the national economy. They can also allocate it to the modern sector abroad, at a constant marginal cost c . The first sector has a decreasing returns to scale production technology. In this sector, l units of capital produce $\phi(l)$ units of output, with $\phi' > 0, \phi'' < 0, \phi'(0) = \infty$ and $\phi'(1) = 0$. This activity accounts for an informal sector, not taxable, and can be thought of as a traditional / agriculture sector. Household production or underground sectors in many developing countries also fit the general characteristics described above. The other productive sector has a constant return to scale production function, and its technology is such that l units of capital produce l units of output. The activity is taxable, and can be thought of as the modern / manufacturing sector.

Taxation should not be interpreted here as the source of formal fiscal revenue of the state (even though a full-fledged fiscal policy is considered as an extension in appendix). In what follows, I will use the term *tax* to speak of

²According to Harbaugh et al. (2007), human behavior towards descendants is best described as a mix of pure altruism and warm glow. However, the discontinuity between the welfare of members of the elite and of the masses renders pure altruism cumbersome and inconvenient. A simplifying assumption is to resort to a warm glow motive for the intergenerational transmission of wealth. Implicitly, this assumes impure altruism or myopia on the part of ascendants towards their progeny (Andreoni, 1989).

the rent extracted by the elite on the economy. This admittedly requires an extensive interpretation of the term (as well as of *fiscal policy* and *fiscal competition*), but this interpretation is straightforward from the point of view of the producer. As in Acemoglu (2006, p. 516), taxes should be understood as encompassing hidden costs, such as bribery and violations of property rights. Even the obligation made to foreign investors to take a domestic business partner and unexpected currency depreciations could be argued to qualify as additional forms of hidden costs; however such practices tend to create an asymmetry between domestic and foreign investors, which is beyond the purpose of this paper.

Individuals are endowed with a bequest b_t left over by their parents in period $t - 1$. This bequest can be consumed, or it can be used to enter into political activity. If an individual decides to enter politics at time t , he will belong to the ruling elite. This enables him to participate in the decision on the level of taxes τ in the economy and to get a share of those tax revenues, unlike those who remain in the masses. If a individual decides to enter the ruling elite, he has to bear a fixed cost π which may be country specific. Because of capital market imperfections, agents are not able to enter the elite using their future income as collateral. Thus, in order to belong to the elite at time t , an agent must have a starting level of wealth $b_t \geq \pi$.

The model is naturally recursive, yet the dynamics will be solved in continuous time, to avoid unrealistic and unnecessary mathematical complications. The economic activity other than inheritance—investment, production, consumption and bequests—happens at once. The state variable of the dynamic system is the initial distribution of bequests in both economies. Other than that, an equilibrium is reached in each period, which facilitates switching attention from the continuous dynamics of the economy to the recursive dynamics of a lineage. As it is, the problem still needs simplifying to become tractable.

Each agent's life can be divided into four stages. The outcome of former stages is assumed to be common knowledge for all agents. In the first stage, (i) they receive their endowments, discover the external environment, and (ii) decide whether they will enter politics in stage 2. Let z be the fraction of individuals who do not enter politics. Therefore, $1 - z$ will be the fraction of agents who belong to the elite: it is also a measure of the *inclusiveness* of the political regime.

In stage 2, (iii) those individuals that have decided to enter politics vote for a proportional tax rate \mathcal{T} which would apply to the domestic formal sector if they manage to attract foreign capital. In doing so, they consider the reaction of other agents, both nationals and foreigners, and take into account

the external environment.

In stage 3, (iv) the same individuals vote for a proportional tax rate τ which would apply to the domestic formal sector if they do not manage to attract foreign capital. Again, they consider the reaction of other agents, both nationals and foreigners, as well as the external environment. Stages 2 and 3 set a nonstandard framework, which I discuss extensively in the next section.

In the final stage, (v) the masses and the elite allocate their capital among the two national productive activities and possibly abroad, (vi) they produce and consume, and (vii) each agent decides how much bequest he will leave to his descendant.

The timing of events is as indicated in Fig. n°1.

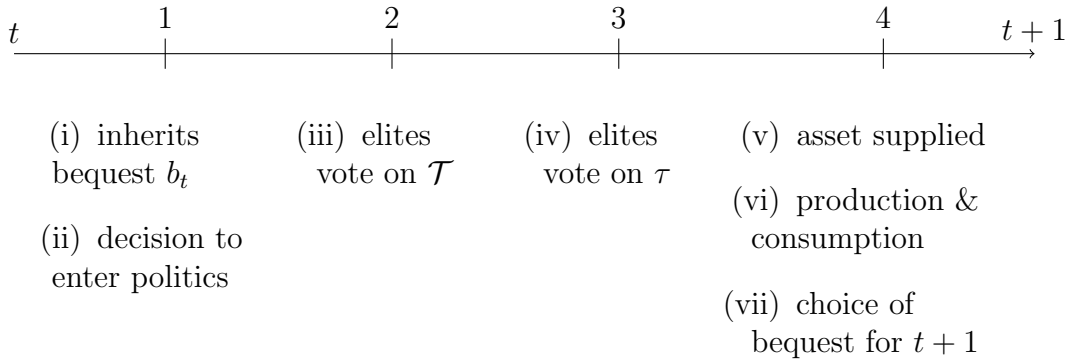


FIGURE 1: The timing of the stage game

3.2 A critical discussion of the setup

Source-based taxation. There would theoretically be four possible sources of tax revenues. The elite could possibly tax bequests, the national income (“residence-based” taxation), the domestic income (“source-based” taxation), or use various forms of non-distortionary, lump-sum taxation. I focus here on domestic income as the main source of taxation, for three reasons. First, the compliance costs involved in taxing income on assets invested abroad is disproportionately higher than in taxing domestic income (Blumenthal and Slemrod, 1995; Gordon and MacKie-Mason, 1995; Gordon and Bovenberg, 1996). Second, bequests are arguably in the form of financial or social capital, both much harder to capture than the physical capital involved in the production process. Third, lump-sum taxation would effectively make tax competition inoperative, and in practice (head taxes for instance) is both inapplicable and inequitable; identically, Bucovetsky and Wilson (1991) shows that if countries

are able to tax based on both residence and source, they are also able to make tax competition inoperative.

Anonymity. I assume that the same tax rate \mathcal{T} applies to the domestic production, whether it be owned by national or by foreign investors, by members of the masses and elites. Anti-money laundering authorities know very well how difficult it can be to establish the identity (and nationality) of the ultimate beneficiary of an investment. On top of that, various forms of treaties rule out such discrimination: agreements between sovereign parties, such as bilateral tax and investment treaties (Elkins et al., 2006), between a sovereign and a private party, such as establishment agreements, and even multilateral agreements, as exemplified by art. 65 of the Treaty on the Functioning of the European Union. Nevertheless, Janeba and Peters (1999) argue that states should theoretically discriminate between national and foreign investors. In the framework at hand, the fiscal decision directly reflects the trade-off between the rent-seeking and the efficiency motives of the elite. If the elite are able to dodge the tax, the efficiency motive disappears, and the elite would consistently maximize extraction from the rest of the economy. If they were able to fully discriminate between domestic and foreign ownership, the tax rate of the other country is consistently capped by the cost of moving one's assets abroad. Overall, this no-discrimination assumption should not be interpreted too literally, but still seems to be a reasonable simplification.

Fiscal decision space. In the most general formulation, \mathcal{T} and τ should be expressed as functions of the amounts of capital effectively supplied by the various groups. Here, they are considered to be constant. However, actual fiscal policies can be shown to be analytically equivalent in the setup I consider.

Constant returns. To invest abroad, any individual incurs a marginal cost $c \in [0, 1]$, which accounts for language barriers, network effects (and even asymmetries of information, as in Gordon and Bovenberg, 1996, but information issues fall outside the scope of this paper) etc. Individuals can allocate their capital in the domestic formal sector, and be taxed by the domestic authority. l units of asset allocated to the domestic formal sector generate $(1 - \tau)l$ units of after-tax income, while they would generate $(1 - c)(1 - \mathcal{T}^B)l$ if in the formal sector abroad. For simplicity, I assume that all things equal, an agent prefers to invest domestically, so if the domestic and the external returns on capital are equal, then agents allocate it domestically. Then the following lemma holds:

Lemma 1 *All individuals in each group take the same investment decision. That decision involves allocating capital between the informal sector and either of the two formal sectors.*

Elastic asset provision. If agents invest l in either formal sector, they invest the remainder $1-l$ in the traditional sector, which generate $\phi(1-l)$ units of income. Introducing the informal sector allows individuals to substitute away from the taxed activity. Only if the supply of assets is elastic can taxes have distortionary effects, an essential feature of the model. Let me write the economic income of an individual $M = (1-\tau)l + \phi(1-l)$ or $M = (1-c)(1-\mathcal{T}^B)l + \phi(1-l)$, depending on the case.

Constrained fiscal policy. Consider the following lemma:

Lemma 2 *Allowing the masses to invest abroad is always a dominated strategy for the elite.*

Indeed, facing an external environment characterized by \mathcal{T}^B and c , the elite can set $\tau = 1 - (1-c)(1-\mathcal{T}^B)$. As a result, the masses would all invest domestically, and the elite would then derive a political rent $\frac{\tau l}{1-z}$ on top of their identical economic income. In other words, in equilibrium, no level of \mathcal{T}^B would allow the elite of country B to actually attract the assets owned by the masses of country A . Thus, the modern sector abroad and capital mobility together account for an *external constraint* on the fiscal policy.

No mutual capital flight. Four possible situations remain after the previous analysis. Assets may actually not cross the border at all; elites of either country may allocate their assets abroad while the masses keep it at home; finally, elites in both countries may allocate their asset in the other country. The equilibrium described in the last situation is counter intuitive, and it is not robust to a number of possible mechanisms. I will not give it any further consideration.

3.3 Capital supply

In stage 4, consumers decide how to allocate their capital and how much bequest to leave to maximize their utility, depending on the tax rate τ_t they face:

$$\begin{aligned} \max_{l_t, b_{t+1}} U_t &= U(c_t, b_{t+1}) \\ \text{s.t. } c_t + b_{t+1} &\leq M_t + \chi R_t + b_t. \end{aligned}$$

where χ is a function indicative of the elite status of the agent and $M_t = (1-\tau_t)l_t + \phi(1-l_t)$ is the economic income of any agent. If the agent belongs to the elite, $\chi = 1$, while if he is in the masses, $\chi = 0$. If an agent participates in politics, he shares equally the rents collected with other members of the elite. Thus, $R_t = \frac{\tau l_t}{1-z_t} - \pi$, and his disposable income is $N_t = M_t + R_t$.

Whether for a member of the elite or of the masses, the first order condition can be written:

$$1 - \tau_t = \phi'(1 - l_t) \quad (1)$$

which defines an optimal capital supply $l_t = l(\tau_t) = 1 - (\phi')^{-1}(1 - \tau_t)$, with l a decreasing function of the level of taxation, $0 < l(0) < 1$ and $l(1) = 0$. Thanks to the homotheticity of preferences, consumption and bequests are given by:

$$\begin{cases} c_t = \frac{1}{1+\rho} (M_t + \chi R_t + b_t) \\ b_{t+1} = \frac{\rho}{1+\rho} (M_t + \chi R_t + b_t). \end{cases} \quad (2)$$

Both consumption and the level of bequests left over for the generation born at time $t + 1$ are a fixed proportion of the disposable income $M_t + \chi R_t$.³ As a result, the indirect utility of the agents is therefore isomorphic to the wealth:

$$V_t = V(k(\rho)(M_t + \chi R_t + b_t)) \quad (3)$$

where $k(\rho)$ is a constant which depends only on ρ and V is an increasing function. Notice that if agents allocated their asset abroad, their decision to supply capital is based on an “apparent” tax rate of $1 - (1 - c)(1 - \mathcal{T}_t^B)$.

3.4 Tax policy

In stage 3, the elite choose τ_t to maximize their utility. If the fiscal policy is not externally constrained, this yields the following first order condition:

$$z_t l(\tau_t) + \tau_t l'(\tau_t) = 0 \quad (4)$$

which defines implicitly an optimal autarkic tax rate $\tau_t = \tau(z_t)$. For a well defined concave problem, eg. when

$$\forall z, l''(\tau(z)) < -\frac{(z+1)l'(\tau(z))}{\tau(z)}, \quad (C1)$$

then τ is increasing in z , the share of the total population that does not participate in politics. The elite sets τ_t taking into account two effects. The first effect, characterized by the first term of the previous expression, is the marginal revenue extraction, while the second effect, described by the second term, negative, is the distortion of the elite’s capital allocation associated with

³This is the sole purpose of the assumption of homothetic preferences. It is not significant to the results.

taxation. When z_t is close to 0, and the elite comprises the whole population, there is no revenue extraction. When z_t is close to 1, the revenue extraction effect dominates. The revenue extracted displays the property of a Laffer curve, and there is therefore a value $\tilde{\tau} = \arg \max \tau l(\tau)$ which maximizes the revenue extraction. As a consequence, $\tau' > 0$, $\tau(0) = 0$ and $\tau(1) = \tilde{\tau}$.

When the masses own capital, the elite set $\tau_t \leq 1 - (1 - c)(1 - \mathcal{T}_t^B)$ so as to avoid a capital flight. Effectively the external environment *constrains* the fiscal policy in the country. To summarize, the elite set:

$$\tau_t = \min [\tau(z_t), 1 - (1 - c)(1 - \mathcal{T}_t^B)] \quad (5)$$

A higher \mathcal{T}^B means relaxing the external constraint on the tax policy. Presumably, an inclusive jurisdiction (low z^B) sets up an external framework characterized by a low \mathcal{T}_t^B , while a narrow elite (high z^B) would be associated with a higher \mathcal{T}_t^B : an inclusive elite abroad exacerbates the external constraint on the elite at home.⁴

Finally, c , the cost of the mobility of asset, deserves a small discussion. The higher c , the less stringent the external constraint. A policy affecting c would therefore allow the policymaker (the domestic elite or an international institution) to affect the impact of the external constraint on its policy. Here, it is implicitly assumed that c is exogenously determined, by the language barrier, external regulations, networks effects etc. In real life, however, Wong (2008) discusses the extent to which the elite have some degree of control over the capital controls and use those to affect their own chance of staying in power.

3.5 Size of the elite

In stage 1, individuals decide to enter the elite or remain in the masses. Two conditions determine this decision. The first is that $b_t \geq \pi$: the agent must not be liquidity constrained. He must be able to pay the entry cost into the elite. The second condition is that it is profitable to enter, ie $R_t \geq 0$. The former condition involves no consideration of other individuals, the latter on the contrary depends on the decision of other individuals: if enough individuals are able to pay π (liquidity constraint not binding), entry may drive political rents to zero.⁵

⁴An appendix discusses a formal model of \mathcal{T}_t^B , which exhibits this behavior. The appendix discusses the properties of the two-country equilibrium it generates.

⁵As the profitability constraint is not essential, it is relegated to an appendix.

At any time t , we can then define the share of the total population that is liquidity constrained, given by $q_t = F_t(\pi)$, where F_t is the cumulative distribution function of bequests at time t . Thus, $F_t(\pi)$ shows the fraction of people that have received a bequest less than π at time t . To summarize, z_t , the fraction of the population that belongs to the masses, is given by:

$$z_t = \max[q_t, \bar{z}]. \quad (6)$$

The question of π . A long tradition in the economic literature assumes that it is costly to belong to the ruling class (Downs, 1957; Buchanan and Tullock, 1962; Huntington and Nelson, 1976). Here, this is captured by the parameter π . For the purpose of this model, it is considered to be exogenous: political participation is constrained by an external technology. This assumption does not claim to be realistic. As a result, the dynamics of the model, which I discuss in details in the next section, cannot be interpreted too strictly. π is arguably endogenous to the political process itself. I choose not to make it endogenous, for three reasons. Admittedly, these reasons have more to do with practicality than real-life relevance. First, I have taken the elite to be impurely altruistic, motivated by a warm glow effect rather than by the utility of their heir. Following this logic, the elite in one period would not affect the institutions in the next period. Second, the current setup provides a homogeneous elite, whose fiscal policy preferences are aligned in one period. Their preferences in terms of political participation are obviously not aligned. In that context, it is hard to imagine how participation would be decided, without adding a whole new model to an already relatively rich story. This is incidentally the third reason: with its flaws, the model already provides many new intuitions. A more extensive model might lead to further insight, at a cost in terms of clarity.

The choice of an exogenous π notwithstanding, π presumably varies from one period to the next, even if only according to a stochastic process. The following considerations abstract from such complications. As a result, the convergence of the political dynamics should not be interpreted too literally. Rather, it should be interpreted as a detailed characterization of the evolution of the society, from the current period to the next.

4 Political evolution

This section essentially explores the dynamics of the baseline model, first the period-to-period dynamics, then the equilibrium towards which these dynamics lead. This sets a baseline for the result in an open economy with

international mobility of capital, with capital owners outside and inside the elite.

4.1 Dynamics of the elite

The bequests left at time t by agents that belong respectively to the elite and to the masses are given by:

$$\begin{cases} b_{t+1} = \frac{\rho}{1+\rho}(N_t + b_t) \text{ and} \\ b_{t+1} = \frac{\rho}{1+\rho}(M_t + b_t). \end{cases} \quad (7)$$

These two equations describe the dynamics of wealth accumulation for both the elite and the masses, as a function of the level of participation in both countries.⁶ Along with Eq. n°6, Eq. n°7 characterizes the whole dynamics of the system. Let me describe the dynamics of q_t from t to $t + 1$.

If $\rho N_t < \pi$ (case illustrated by Fig. n°2), then individuals that inherited a bequest $b_t \in [\pi, \frac{1+\rho}{\rho}\pi - N_t]$ can pay the cost of entering the elite, but they do not provide a sufficient bequest b_{t+1} to their children for them to pay the cost at time $t + 1$. Individuals such that $b_t < \pi$ are members of the masses. They leave a bequest $b_{t+1} = \frac{\rho}{1+\rho}(M_t + b_t) < \frac{\rho}{1+\rho}(N_t + \pi) < \pi$, so their children remain in the masses. From any such t to $t + 1$, q and the size of the elite are therefore non-increasing, and in a dynasty of elites, the bequest left to the successors decreases. Finally, if the liquidity constraint is binding at t , it remains binding at $t + 1$.

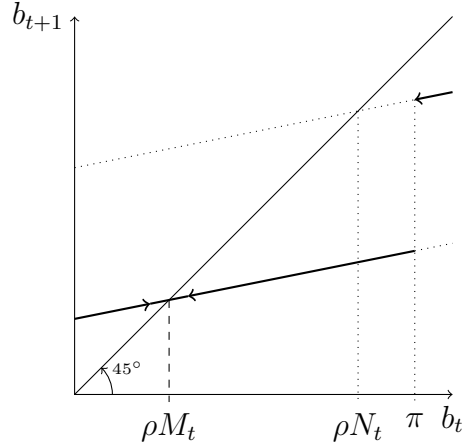


FIGURE 2: High π when the liquidity constraint binds.

⁶Fig. n°10 in appendix represents these two equations.

If $\rho M_t \leq \pi \leq \rho N_t$ ($M_t < N_t$ can only happen if the liquidity constraint is the binding constraint, so $z_t = q_t$), then individuals that inherited a bequest $b_t \geq \pi$ are members of the elite (case illustrated by Fig. n°3). They provide a bequest $b_{t+1} = \frac{\rho}{1+\rho}(N_t + b_t) > \pi$ to their children, who can remain in the elite. Individuals that inherited a bequest $b_t < \pi$ are members of the masses. They provide a bequest $b_{t+1} = \frac{\rho}{1+\rho}(M_t + b_t) < \pi$ to their children, so these remain in the masses. From any such t to $t + 1$, the size of the elite is unaffected. In any dynasty, the bequest left to successors moves closer to ρM_t for a member of the masses, and to ρN_t for a member of the elite. The liquidity constraint remains binding in period $t + 1$.

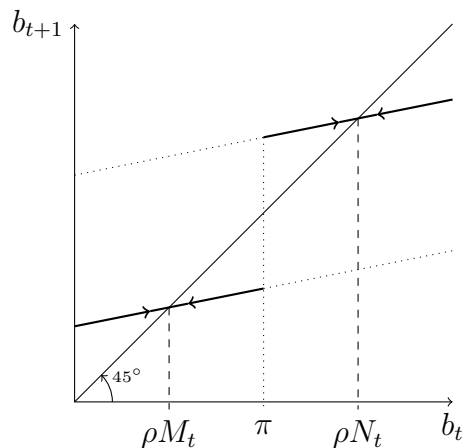


FIGURE 3: Intermediate π . The liquidity constraint binds.

And finally, if $\pi < \rho M_t$ (case illustrated by Fig. n°4), then individuals that inherited a bequest $b_t \in [\frac{1+\rho}{\rho}\pi - M_t, \pi]$ cannot pay the cost of entering the elite, but they provide a bequest to their children which allows them to pay the cost at time $t + 1$. Individuals who can pay the cost of entering the elite leave a bequest which also allows their children to pay the cost at time $t + 1$. From any such t to $t + 1$, q and the size of the elite are therefore non-decreasing. In a dynasty of individuals who cannot pay the cost of entering the elite, the bequest left to the successors increases; as a consequence, if the liquidity constraint is binding, the bequest left in a dynasty of members of the masses increases. Finally, if the profitability constraint is binding at t , it remains binding at $t + 1$, and the number of persons in the elite remains constant.

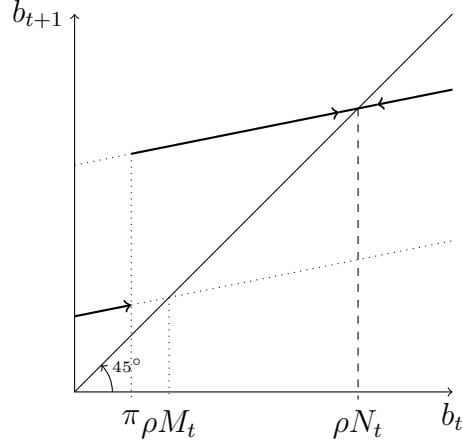


FIGURE 4: Low π when the liquidity constraint binds.

4.2 Dynamics and equilibria in a closed economy

To better understand the dynamics of the previous section, let me now examine the equilibrium towards which the country converges. As a first step, let me consider the case where the tax policy is unconstrained, and remains thus throughout: going through this exercise provides an interesting benchmark for subsequent results.

Let me consider $M_t = M(z_t) = (1 - \tau(z_t))l(\tau(z_t)) + \phi(1 - l(\tau(z_t)))$ and $N_t = N(z_t) = M(z_t) + R(z_t)$. When the profitability constraint is binding (and not the liquidity constraint), political rents are driven down to zero, and the income of the elite and of the masses is the same: $N(\bar{z}) = M(\bar{z})$. If the liquidity constraint is, $N > M$. Thereafter, I will only study the case where it is the liquidity constraint which matters for political participation.

Lemma 3 *M and N are respectively decreasing and increasing in z :*

$$\frac{dM}{dz} = -l\tau' < 0 \quad \frac{dN}{dz} = \frac{\tau l}{(1-z)^2} > 0$$

A narrower elite imposes a higher tax rate. This raises the income of the elite, and lowers the income of the masses.

One additional assumption makes the exposition considerably simpler at no loss of generality. Let the initial distribution be described by a continuous and positive density function f_t and an associated cumulative function F_t on a closed interval $[b_t^-, b_t^+]$ with $0 \leq b_t^-$ small enough and $\pi < b_t^+$. The previous considerations yield three possible initial situations.

Proposition 1 *When $\rho N_t < \pi$ (high π), the elite shrinks until in a finite time S_h $\rho M_{t+S_h} < \pi \leq \rho N_{t+S_h}$.*

When $\rho M_t \leq \pi \leq \rho N_t$ (intermediate π), the size of the elite remains constant and the wealth distribution converges towards the degenerate distribution ρM_t with mass $F_t(\pi)$ and ρN_t with mass $1 - F_t(\pi)$.

Finally when $\pi < \rho M_t$ (low π), the elite expands until in a finite time S_l its size reaches $1 - \bar{z}$, and the wealth distribution converges towards the degenerate distribution $\rho N(\bar{z}) = \rho M(\bar{z})$ with mass 1.

The proof is in the appendix. Prop. n°1 yields two possible equilibrium outcomes: a polarized society whenever $\rho M_t \leq \pi$ and an inclusive one otherwise. When π is high, the elite first shrinks, which allow its members to increase taxes and political rents, at the cost of some economic efficiency and increased inequalities, before it stabilizes. When π is intermediate, taxes, distortions, economic incomes and political rents are stable, and wealth converges in both social groups towards their respective equilibrium level. For convenience, let me call \tilde{z}_t the size of the elite when it has stabilized (at $t + S_h$ in the first case, and t in the second), starting from the distribution F_t . This outcome corresponds to the polarized society. When π is low, the elite expands until political rents are driven down to zero. Taxes end up covering only the cost of entering the elite. From that point on, a process of social and political equalization takes place. The political dynamics in a closed economy can be summarized as on Fig. n°5.

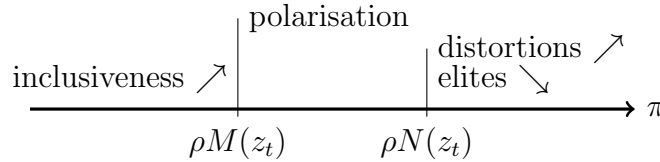


FIGURE 5: Political outcomes in a closed economy

5 Mobile masses

Let me now consider two countries in interaction. The distribution of wealth now evolves jointly in two countries. For the purpose of the exposition, let me assume that country A is initially constrained by the fiscal policy of country B . The assets owned by the masses in A are assumed to be mobile internationally. Put otherwise, the masses have little to lose from shifting their

assets from their current usage to another country or sector overlooked by the tax authority: the owners of capital are in the masses, and not only in the elite. This assumption is probably excessive, but it yields interesting insights into the role of the joint distribution of mobility and political influence.

5.1 Two-country dynamics with mobile masses

The total after tax income of the masses should now be written

$$M_t = M(z_t, \mathcal{T}_t^B) = (1 - \tau_t)l(\tau_t) + \phi(1 - l(\tau_t)),$$

where $\tau_t = \min [\tau(z_t), 1 - (1 - c)(1 - \mathcal{T}_t^B)]$. By analogy, let me define the total after tax income of the elite, net of political participation cost: $N_t = N(z_t, \mathcal{T}_t^B) = M_t + \frac{\tau_t l(\tau_t)}{1 - z_t} - \pi$.

When the profitability constraint is binding (and not the liquidity constraint), political rents are driven down to zero, and the income of the elite and of the masses is the same: $\forall \mathcal{T}, N(\bar{z}, \mathcal{T}) = M(\bar{z}, \mathcal{T})$. If the liquidity constraint is, $N > M$. We have:⁷

$$\begin{cases} \frac{\partial M}{\partial z} = 0 & \frac{\partial N}{\partial z} = \frac{\tau l}{(1-z)^2} > 0 \\ \frac{\partial M}{\partial \mathcal{T}} = -(1-c)l < 0 & \frac{\partial N}{\partial \mathcal{T}} = \frac{1-c}{1-z}(zl + \tau l') > 0. \end{cases}$$

A higher tax rate implies a lower income for the masses, and a higher income for the elite. When the fiscal policy is constrained, the size of the elite does not affect the income of the masses anymore, but it does affect how widely the political rents must be distributed: again, the narrower the elite, the higher income for each member of the elite. As a result, the external constraint affects the incomes of the elite and of the masses. The income of the elite is lower than it would be in autarky, and the income of the masses is higher. It is useful to distinguish two channels through which the incomes evolve in a constrained country. First, the size of the national elite may change, which affects how widely the tax proceeds have to be distributed, and therefore the income of the elite. Second, the tax rate may be at least momentarily determined by the external constraint, and therefore by the inclusiveness of the competing jurisdiction. The technical framework is now well established, and many details can therefore be spared, in particular with respect to the profitability constraint. Three states arise, for the same ranges of parameters as for the closed economy.

⁷By definition of the function τ , $zl(\tau) + \tau l'(\tau) > 0$ for any $\tau < \tau(z)$, which is the case when $\tau = 1 - (1 - c)(1 - \mathcal{T}^B)$. This proves that the partial derivative of N with respect to \mathcal{T} is positive. All other derivatives are straightforward.

When $\rho N_t < \pi$ (first state, high cost of entering the elite), the elite shrinks, and would ideally like to increase taxes and distortions as it does. The external constraint might make that impossible. As before, a shrinking elite means a higher share of the political rent for each remaining member of the elite. Now, however, the tax rate reflects the political evolution in country B . If country B is growing more inclusive, \mathcal{T}_t^B decreases. It may decrease fast enough for the tax rate channel to dominate the shrinking elite channel: the income of the elite may decrease. This is a temporary situation at best, however: the shrinking elite effect eventually dominates when the elite is small enough. Whatever happens in country B , there exists a finite time S' such that $\rho N_{S'} < \pi < \rho N_{S'+1}$: the closed economy results holds. The constraint on the fiscal policy may become slack only if the elite in B is shrinking fast enough. While it remains binding, the taxes are lower, the income of the masses is higher, inequalities are unequivocally lower, and the elite shrinks further than in a closed economy: both the dynamics and the equilibrium are altered because of the external constraint.

When $\rho M_t \leq \pi \leq \rho N_t$ (second state, intermediate cost of entering the elite), the elite remains stable. Only the tax rate channel remains. If the elite in B becomes less inclusive, \mathcal{T}_t^B rises, which alleviates the external constraint on A 's fiscal policy. A 's elite may increase its domestic tax rate, to its own benefit and to the detriment of the masses. As a consequence, the elite remains stable throughout. If the elite in B is stable, or stabilizes at a level where $\tau(z^A) > 1 - (1 - c)(1 - \mathcal{T}(z^B, \frac{1}{n}))$ still, then taxes, distortions, political rents, and inequalities are lower than they would be in autarky. If the elite in B expands, the external constraint is exacerbated. The elite in A are forced to lower their tax rate in the process. The income of the masses increases, and that of the elite decreases. As long as $\rho M_t \leq \pi \leq \rho N_t$, the heirs of elites remain in the elite, and the children of the masses remain in the masses. If at some point the income of the elite decreases below $\frac{\pi}{\rho}$ (eg. if at some point $\rho N(z_t, \mathcal{T}_t^B) < \pi$), the previous considerations apply: the elite temporarily shrinks, before it stabilizes again. Conversely, if at some point the income of the masses increases above $\frac{\pi}{\rho}$ (eg. if at some point $\pi < \rho M(z_t, \mathcal{T}_t^B)$), some members of the masses are able to switch to the elite. In that case, an expanding elite can only result in the liquidity constraint not being binding at some point. The size of the elite is $z_t = \bar{z}$ thereafter, there are no political rents anymore, and the whole population converges to a state of perfect equality.

When $\pi < \rho M_t$ (third state, low cost of entering the elite), the elite becomes more inclusive. While the tax rate $\tau(z_t)$ it would set if unconstrained decreases, the actual tax rate $\tau_t < \tau(z_t)$ is determined by the external constraint. If the elite in B shrinks fast enough, \mathcal{T}_t^B increases, and the tax rate channel may

possibly dominate the expanding elite channel, thus actually reducing the income of the masses; if their income decreases below $\frac{\pi}{\rho}$, the elite stabilizes. Obviously, this is not possible if the elite had not been in a position to stabilize itself in a closed economy: this extreme case simply corresponds to a temporary expansion of the elite under a fast dissipating constraint. Except in that specific case, whether or not the constraint is raised thanks to a decreasing $\tau(z_t)$, the elite becomes increasingly inclusive, even once the external constraint has become slack. The external constraint forces a lower tax rate $\tau_t = 1 - (1 - c)(1 - \mathcal{T}_t^B)$. This accelerates the convergence, with lower taxes, distortions, political rents and inequalities. During the convergence, $\tau(z_t)$ decreases and converges towards $\tau(\bar{z})$. If this is lower than $1 - (1 - c)(1 - \mathcal{T}_t^B)$ after \mathcal{T}_t^B has stabilized, the external constraint becomes slack before the liquidity constraint, and everything proceeds as if the economy was closed. But even if it is higher, equilibrium political rents are still zero. This implies a narrower elite than in the closed economy inclusive equilibrium.

Meanwhile, in states 1 and 2, the elite dynamics in B are more simple. Except in a relatively extreme scenario, B 's fiscal policy remains unconstrained, and the closed economy results apply. If the elite in B shrinks enough (for instance if π^B is very high), the constraint on A 's fiscal policy may become slack. In the extreme scenario, there may even be a point after which the fiscal policy of A becomes constraining for the policy of B . Country B would then find itself in first constrained state.

In state 3, in general, the elite of country A becomes inclusive: the constraint on A 's fiscal policy therefore alleviates, until it eventually becomes slack. A 's fiscal policy may even end up constraining B 's, especially if, meanwhile, the elite in B shrinks. Again, country B would then find itself in the first constrained state. Even if the elite in B is stable—or if it has stabilized after shrinking—the expanding elite in A may put the fiscal policy of country B under constraint. Country B would then find itself in the situation described above in the second constrained state.

These considerations provide a full characterization of the coevolution of the political institutions of countries A and B , in the form of an algorithm. As for a closed economy, there are only two possible equilibrium states for each country: polarized where $\rho M \leq \pi \leq \rho N$, or inclusive, where $\pi < \rho M = \rho N$. Additional complexity arises, in the dynamics towards these equilibria, but this complexity remains under control, thanks to two considerations. First, the size of the elite of each country plays the role of a state variable, and these state variables are always monotonous. Second, while there may be some loops between states 1 and 2, the number of such loops is finite. Even though theoretically and mathematically possible, any situation generating more than

three switches between states in the dynamics towards the equilibrium for any given country is unlikely to arise.

5.2 Dynamics and equilibria in an open economy

Furthermore, a number of the possible paths generated by the two-country dynamics are unrealistic and unnecessarily complex. The constraint on a given country is not set by only one country, but by any other country with sufficient business opportunities and sufficiently low costs of doing business (taxes). A sudden increase of the costs of doing business in all possible competing jurisdiction is an unlikely scenario.

It is reasonable to simplify the previous exposition by considering a country which faces an stable external constraint, characterized by a fixed \mathcal{T}^B . This external constraint can be thought to account for investment opportunities on the international market for capital. The concept of international capital market becomes very intuitive: the standard it sets is the marginal available investment opportunity for a mobile capital owner. The dynamics of country A under this constraint are considerably simpler, and it becomes reasonable to sum them up in one proposition:

Proposition 2 *When $\rho N_t < \pi$, the elite shrinks until in a finite time $S'_h < S_h$ $\rho M_{t+S'_h} < \pi \leq \rho N_{t+S'_h}$. The equilibrium size of the elite is smaller due to the external constraint.*

When $\rho M_t \leq \pi \leq \rho N_t$, the unconstrained result applies.

Finally when $\pi < \rho M_t$, the elite expands until in a finite time $S'_l < S_l$ its size reaches $1 - \bar{z}$, and the wealth distribution converges towards the degenerate distribution $\rho N(\bar{z}) = \rho M(\bar{z})$ with mass 1.

If $\pi < \rho M_t$ and $\tau(\bar{z}) < 1 - (1 - c)(1 - \mathcal{T}^B)$, the external constraint becomes slack before S'_l . In all other cases, taxes, distortions and political rents and inequalities are lower due to the external constraint.

Prop. n°2 yields the same two equilibrium situations as Prop. n°1. The external constraint affects the incomes of the elite and of the masses both in the transition and in equilibrium. The income of the masses is higher relative to autarky, thus offering the possibility of inclusive outcomes when the society would have remained polarized in autarky. The aggregate income of the elite is lower, which either forces the elite to downsize or constrains its rent-seeking ability. In all cases, the external constraint accelerates the convergence, and forces an outcome where taxes, distortions, political rents and inequalities are lower.

5.3 Inclusiveness spillovers

Prop. n°2 can easily be extended to account for a non-abating constraint. In other words, let me now simply assume \mathcal{T}_t is nonincreasing. As previously clarified, this may correspond to an increasingly inclusive competing jurisdiction, or rather to a general improvement of the institutions in countries with already low costs of doing business. This interpretation provides the first important result of the paper.

Proposition 3 *If the political process becomes more inclusive in a competing jurisdiction, the elite expands iff $\pi < \rho M_t$, with $M_t = M(z_t, \mathcal{T}_t) \geq M(z_t)$. It shrinks iff $\pi > \rho N_t$, with $N_t = N(z_t, \mathcal{T}_t) \leq N(z_t)$.*

Prop. n°3 comes as a corollary of Prop. n°2. Relative to autarky, the tax competition of a inclusive polity abroad results into lower domestic taxes, distortions, political rents and inequalities, and even a faster political convergence. The elite may have to downsize: the range of parameters π above which the elite is forced to deplete expands. It may also be forced to become more inclusive: the range of parameters π under which it converges towards inclusiveness also expands. To summarize, the external constraint means that increasing political inclusiveness in one country may spillover into increasing inclusiveness in another or, more generally, that increased mobility of a factor of production increases its weight in the policy process. Fig. n°6 illustrates these results.

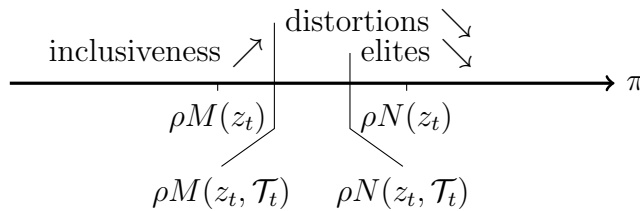


FIGURE 6: Political outcomes in an externally constrained country

To conclude this section, strengthening the external constraint is shown to benefit the inclusiveness of the political process. There are two channels through which this may happen. First, competing jurisdictions may become themselves more inclusive. Second, one may directly affect the costs c of investing abroad. So far, c has been assumed to be exogenous. Let me consider the incentives of the various agents to increase or to decrease this cost. In country A , the answer is straightforward: domestic masses would seek to lower

c , to increase their own mobility, and domestic elites to increase it, inasmuch as is in their control. The elite of a constrained country also have an interest in alleviating the external constraint, which may imply helping increase the rent-seeking capacity of the other elite, through an increase in c .

Due to its assumptions, the model does not account for any other form of intervention, neither active promotion of inclusiveness by Western liberal democracies, nor social activism in favor of democratization processes abroad. In reality, any number of foreigners may want to team up with domestic owners of capital to promote inclusiveness. Here, for tractability purposes, investment in the formal sector goes in full to one country; in a more realistic model with simultaneous investment in the domestic and in the foreign formal sectors, investors from abroad will indeed team up with domestic investors. Furthermore, foreigners may also be pursuing geopolitical or moral goals which go beyond the scope of this paper. In short, mobility benefits domestic owners of a mobile asset, foreign investors and migrants, and may even benefit the elite of unconstrained partner countries (countries with low costs of doing business, eg. liberal democracies). On the contrary, it hurts domestic elites, and the elites of any country whose fiscal policy is being constrained as a result of this mobility.

6 Captive masses

In the former setup, individuals from the masses and from the elite alike had the ability to shift capital abroad. Under such an assumption, Prop. n°3 establishes that inclusiveness may spillover into a partner country. But mobility may not always extend to the whole population. Now, I assume that the capital owners are only in the elite. They are the only individuals who can shift their assets abroad. Such a setup should not be interpreted too literally. There is no reason why there should be an exact coincidence in a given society between being political influence and international mobility. Arguably, though, the former assumption of universal international mobility, is just another polar situation. I consider two situations.

First, in the setting of the patrimonial regimes mentioned in the introduction, the capital of the elite comes from resource capture. It may sometimes dwarf any other national economic interest.

Second, in practice, Rodrik (1997) argued that the international mobility of individuals seems to differentiate individuals according to their professional activity, favoring owners of capital, highly skilled or specific workers, over unskilled, semi-skilled and most middle managers. Arguably, the former have

a disproportionate influence over the fiscal policy.

The timeline of the game remains identical. Since the masses never allocated their asset abroad in equilibrium, their program remains the same here: their asset supply can be written $l_t = l(\tau_t) = 1 - (\phi')^{-1}(1 - \tau_t)$. Their consumption and bequest functions also remain the same.

Contrary to the previous setup where no actual exchange of assets took place, elites will now sometimes allocate their asset abroad. If $\tau_t \leq 1 - (1 - c)(1 - \mathcal{T}_t^B)$, elites allocate $l_t = l(\tau_t)$ in the formal sector of their own economy too. Conversely, if $\tau_t > 1 - (1 - c)(1 - \mathcal{T}_t^B)$, then they allocate $l_t = l(1 - (1 - c)(1 - \mathcal{T}_t^B))$ to the other country's formal sector. If there is not actual asset exchange in equilibrium, the program of the elite remains the same. They then set $\tau_t = \tau(z_t)$ (provided $\tau(z_t) \leq 1 - (1 - c)(1 - \mathcal{T}_t^B)$).

6.1 Patrimonial elites

Let me first consider a small country A aside a big country B (also named “abroad”). The elite of A can allocate their asset abroad at no cost ($c = 0$), while the masses are captive (this assumption may seem extreme, but Wong, 2008, derives it as the result of an endogenous policy decision p. 31). Meanwhile, for now, assume they cannot hope to attract any asset from abroad. For instance, the elite may not be able to commit to upholding property rights for foreign investors (Dharmapala and Hines Jr., 2009). In this paper, *patrimonial elite* are defined as elites unable to implement good national institutions, and who stash their wealth abroad. Typically, patrimonial elite tend to invest their wealth in liberal democracies, often via tax havens (OECD, 2014, p. 86). Tax havens have two advantages: they generate low costs of doing business, and their secrecy contributes to ensuring the safety of their investment. The program of patrimonial elite can then be written:

$$\max_{\tau_t} (1 - \mathcal{T}_t^B)l(\mathcal{T}_t^B) + \phi(1 - l(\mathcal{T}_t^B)) + \frac{\tau_t z_t l(\tau_t)}{1 - z_t}$$

The elite would then set the tax rate τ_t so as to maximize rent extraction from their population, at a level $\tau_t = \tilde{\tau} > \tau(z_t)$ higher than when they also bore the tax burden themselves. That level does not depend on the size of the elite anymore. Meanwhile, if $n \gg 1$ is the relative size of “abroad”, the elite in B would set $\mathcal{T}_t^B = \mathcal{T}(z_t^B, \frac{1-z_t}{n}) \approx \tau(z_t^B)$.⁸ Elites from A who allocate assets abroad make little or no difference on the policies of B : in line with

⁸A formal model of \mathcal{T} is provided in appendix. The approximation is enough here.

Bucovetsky (1991); Wilson (1991), the larger jurisdiction is less reactive to tax competition than the smaller one.

The elite compare $N(z_t^A)$ when they allocate their own asset domestically with $M(z_t^B) + \frac{z_t^A \tilde{\tau} l(\tilde{\tau})}{1 - z_t^A}$ when they allocate it abroad. For every z_t^B , let me define $\theta(z_t^B)$ the subset of $[0, 1]$ such that if $z_t^A \in \theta(z_t^B)$, then the elite would allocate their asset abroad:

$$z_t^A \in \theta(z_t^B) \Leftrightarrow N(z_t^A) < M(z_t^B) + \frac{z_t^A \tilde{\tau} l(\tilde{\tau})}{1 - z_t^A}. \quad (8)$$

θ defines a correspondence from $[0, 1]$ into the partially ordered set of open subsets of $[0, 1]$, with two properties:

Proposition 4 $\forall z < 1, 1 \in \theta(z)$ and θ is nonincreasing.

Prop. n°4 fully describes the range of parameters in which the elite in A become patrimonial. First, narrow enough elites ($z_t^A \approx 1$) always have an incentive to stash their wealth abroad and increase rent extraction at home. Second, the rent lost to the elite abroad is smaller for lower z_t^B , so patrimonial elite are more likely to be willing to expatriate their assets. Without any more assumptions on l and τ , the description of θ stops here. I would need further assumptions to show that the frontier of θ is monotonic, for instance. But this is unnecessary at this point. Let me turn to the dynamics of patrimonial elite.

Proposition 5 A patrimonial elite expands iff $\pi < \rho M_t$, with $M_t = M(1) < M(z_t^A)$. It shrinks iff $\pi > \rho N_t$, with $N_t = M(z_t^B) + \frac{z_t^A \tilde{\tau} l(\tilde{\tau})}{1 - z_t^A} > N(z_t^A)$.

Prop. n°5 highlights the importance of the mobility of the factors of production for political outcomes. Patrimonial elite maximize rent extraction at home, and thus depress the economic income of the masses. In that context, an inclusive outcome is made very unlikely. Only for the lowest values of π can we expect a convergence towards an inclusive situation. When masses are mobile, rent extraction is constrained. Conversely, when masses are captive, taxes, distortions and political rents are higher than if economy was closed, as well as the income of the elite. In that context, a polarized situation may sustain a wider elite (it is therefore unclear how inequalities are affected). To summarize, outcomes when masses are mobile or captive are reversed, as illustrated on Fig. n°7.

Let me now reintroduce a small cost $c > 0$ that the patrimonial elite would lose on their investment abroad. θ would then have to be written as a correspondence of two variables, nonincreasing in the the first variable z_t^B ,

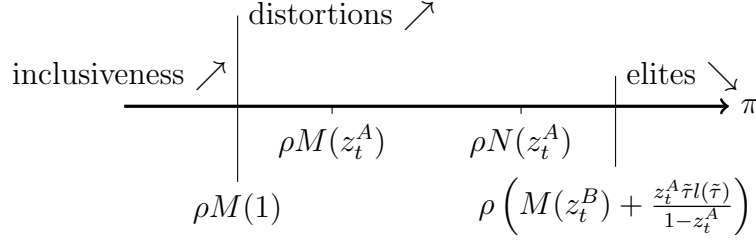


FIGURE 7: Political outcomes in a country with a patrimonial elite

and decreasing in the second variable c until it reaches \emptyset . In other words, the elite may be increasingly discouraged to allocate their asset abroad if the cost of doing so increases. This may in turn open the possibility of a more inclusive polity, characterized by lower taxes, distortions, political rents and inequalities. Obviously, domestic masses would seek to increase c , and domestic elites to decrease it, inasmuch as is in their control. Indeed, whenever the “ill-gotten assets” of patrimonial elite are pursued, it is often at the initiative of non-governmental organizations from the South. Arguably, such actions are raising c and hurting patrimonial elites around the world. Additionally, this model confirms that they may contribute to promoting efficient policies, and even facilitating a change of regime in such countries.

6.2 Supporting patrimonial elites

When masses were assumed to be mobile, due to several simplifications, the model displayed no actual international movement of assets. Patrimonial elite, however, do transfer their assets to more inclusive polities. With no cross-border investments, the incentives of the groups abroad, small as they may be, were shown to be aligned with those of the domestic masses. Cross-border flows now create the opportunity for stronger and possibly opposite incentives for some groups in recipient countries to intervene.

Let me consider the big recipient country B . The elite there implements a tax rate $\mathcal{T}_t^B = \mathcal{T}(z_t^B, \frac{1-z_t^A}{n})$, which decreases with n . The inflow of the patrimonial elite’s assets increases the relative importance of the extraction motive in the second order. In other words, the big countries are not immune to the existence of the patrimonial regimes: patrimonial inflows might actually favor a polarized outcome over an inclusive one in the bigger jurisdiction.

Proposition 6 *With patrimonial inflows, the elite (in B) expands iff $\pi^B < \rho M_t$, with $M_t = (1 - \mathcal{T}_t^B)l(\mathcal{T}_t^B) + \phi(1 - l(\mathcal{T}_t^B)) < M(z_t^B)$. It shrinks iff*

$$\pi^B > \rho N_t, \text{ with } N_t = M_t + \left(1 + \frac{1-z_t^A}{n}\right) \frac{\mathcal{T}_t^B l(\mathcal{T}_t^B)}{1-z_t^B} > N(z_t^B).$$

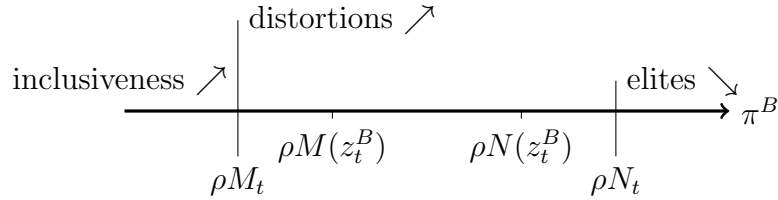


FIGURE 8: Political outcomes in a patrimonial-friendly country

Fig. n°8 illustrates the results of Prop. n°6. Unlike when masses were mobile, the model now predicts conflicting interests among groups in liberal democracies (and in tax havens). The masses in B still team up with the masses in A : indeed non-governmental organizations and multilateral institutions from the North do play a key role in the successful cases of ill-gotten asset retrievals. Now, however, the interests of elites from both countries are aligned. As it is, the model already shows that the democratic elite gain from facilitating inflows of these assets.

In fact, pushing the analysis just one step further shows that the model actually underestimates these gains and the extent of the possible collusion between elites. A successful investment abroad generates additional income for the patrimonial elite. This, however, requires a certain degree of cooperation from the elite of the recipient country. The patrimonial elite may therefore be inclined to bribe the other elite, which may actually substantially bolster the conclusions of Prop. n°6. Such bribes can take several forms, gifts made to key political players or party donations, who may then interfere with judicial procedures targeting ill-gotten assets. While formal democratic procedures restrict, or forbid outright, such practices, they may still be difficult to eradicate.

6.3 Tax havens

In a second scenario, the elite of the small country C is now assumed to be in a position to attract assets from the big country D (still “abroad”). Even if D ’s masses are mobile, previous considerations have showed that C ’s elite cannot hope to attract their assets. Let me now assume that D has captive masses and mobile elites (whose assets are for now mobile at a cost $c = 0$). For instance, they may own assets of a different nature, or be in a position to enact special tax provisions and to evade taxes outright.

If indeed C 's elite manage to attract the assets of D 's elite—this paper's definition of a *tax haven*—, they provide the latter with the possibility of increasing the tax rate in D . In fact, in the framework of the paper, D 's elite are in a position to maximize the rents they extract from their masses, eg. by setting a tax rate of $\mathcal{T}_t^D = \tilde{\tau}$. Meanwhile, the program of the elite of the tax haven can be written:

$$\begin{aligned} \max_{\tau_t} & (1 - \tau_t)l(\tau_t) + \phi(1 - l(\tau_t)) + \frac{\tau_t(1 + n(1 - z_t^D))l(\tau_t)}{1 - z_t^C} \\ \text{s.t.} & N(z_t^D) < (1 - \tau_t)l(\tau_t) + \phi(1 - l(\tau_t)) + \frac{z_t^D \tilde{\tau} l(\tilde{\tau})}{1 - z_t^D} \end{aligned}$$

n is the size of D relative to C . If n is big enough, the maximand can be simplified to $\tau_t l(\tau_t)$: both the domestic extraction and the efficiency motives are dwarfed by the rents that can be extracted on the assets of the foreign elite. The policy decision is made irrespective of the domestic political conditions (the model can even account for a tax haven where nobody qualifies as masses). Only if no level of tax rate would attract the foreign assets would the small country not become a tax haven. In other words, by its mere existence, a big country B such that $\exists z, z_t^D \in \theta(z)$ creates the conditions for a tax haven to appear by its side.

Let me discuss the (admittedly strong) assumptions that underlie this expression. First, tax evasion may actually involve high costs c , especially in liberal democracies with strong civil societies. Tax evasion is more likely and more profitable when such societal controls are weak. Second, domestic motives play a role in limiting how low the candidate to tax haven status is willing to set the tax rate. Zucman (2013) estimates that one third of foreign liabilities in Swiss banks belong to Swiss nationals, a share which cannot be neglected in the elite's program. Nevertheless, it seems very likely that the offshore activity of other tax havens, especially the smaller ones, may account for a much bigger share of their activity. Unfortunately, this has not been documented so far, for want of relevant data. Third, even if domestic motives can indeed be neglected, the candidate to tax haven status may not be able to lower the costs of doing business beyond a certain point, in line with the analysis of Dharmapala and Hines Jr. (2009).

Keeping in mind these consideration, the constraint is binding and τ_t is on the “right” side of the Laffer-curve (that is, on the left side): $\tau_t < \tilde{\tau}$.⁹

⁹The proof is by contradiction. Suppose the constraint is not binding. Then $\tau_t = \tilde{\tau}$. The right hand-side of the inequality would then be $M(1) + \frac{z_t^D \tilde{\tau} l(\tilde{\tau})}{1 - z_t^D} < M(1) + \frac{\tilde{\tau} l(\tilde{\tau})}{1 - z_t^D}$, which by definition is less than $N(z_t^D)$.

Whenever there exists a z such that $z_t^D \in \theta(z)$, the elite vote on

$$\tau_t = \max[\tau(z) : z_t^D \in \theta(z)] = \tau(\max[z : z_t^D \in \theta(z)]) \quad (9)$$

(minus epsilon to break the tie). The effect of tax evasion on the political dynamics of the tax haven is ambiguous. The tax policy is “flooded” by foreign motives. The elite may set a higher tax rate to take advantage of the asset flight than they would in a closed economy, which would result into higher distortions and political rents, and a more likely polarized outcome. The shape of θ , however, makes the converse scenario, where they actually set a lower tax rate, more likely: this would result in less inequalities, less distortions, and possibly a transition to an inclusive political regime. Notice that such a transition illustrates the ambiguity of using political inclusiveness as a proxy for democracy: in a tax haven, inclusiveness may grow, though maybe not transparency, another key ingredient of democracy.

6.4 Tax evasion

Again, the existence of tax havens involves actual movements of assets. Let me therefore examine the resulting interests of the various stakeholders.

Proposition 7 *The tax evading elite expands iff $\pi^D < \rho M_t$, with $M_t = M(1) < M(z_t^D)$. It shrinks iff $\pi^D > N(z_t^D)$.*

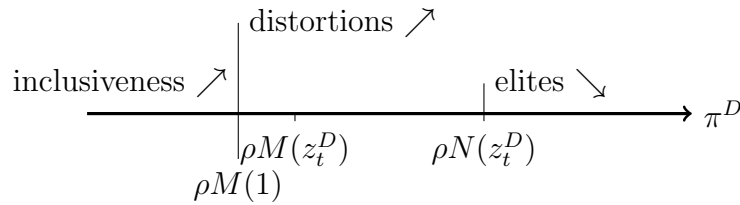


FIGURE 9: Political outcomes associated with tax evasion

Fig. n°9 illustrates the results of Prop. n°7. Due to tax evasion, taxes, distortions, rents and inequalities increase, which favors a polarized outcome in D . The elite in the tax haven are actually in a position to capture the whole rent surplus, and in the first order D 's elite derive no benefit from evading their own tax system.

A more careful analysis of the model reveals at least two mechanisms through which D 's elite may keep their share of the surplus (maybe then Fig. n°8 is a better illustration than Fig. n°9). First, arguably, D 's elite may

be the group of individuals best positioned to successfully create a tax haven. Theoretically, another group could possibly do so as well; however the elite's own tax haven is much more beneficial to the elite. In that case, the interests of the elite of C and D are obviously aligned, since they are the same actual individuals. Such a mechanism is consistent with the existence of several non-sovereign tax havens (see Dyreng et al., 2013, on Delaware as such an onshore tax haven), and with the very close association of the governments of even the most advanced liberal democracies with generally one, and sometimes a few tax havens. Second, even if D 's elite is not in a position to create their own tax haven, there may be an opportunity for the existence of not one, but several tax havens. The ensuing competition for the location of the assets may improve the bargaining position of D 's elite. As a result, in the model, the interests of both elites might in fact coincide in lowering c inasmuch as is in their control, to the detriment of the masses in D , who will try to increase c . The interests of C 's masses (if such a group actually exists) are unclear. If anything, capital flight may give an incentive to lower the level of taxes in the tax haven, and the incentives of the masses are more likely to be aligned with the interests of elites.

Does that mean that the fight against tax evasion is hopeless? No, but this analysis reveals that it is maybe illusory to expect the governments of even the most advanced liberal democracies to credibly threaten tax havens. Under the first mechanism, the tax haven is an essential determinant of their accumulation of wealth, and under the second one, they would favor the emergence of more tax havens, rather than risk reducing their own bargaining position against tax havens by reducing their ranks. The only credible actors in this fight necessarily come from the strong civil societies of liberal democracies, and in particular their judicial systems, inasmuch as they are indeed independent from the executive and legislative branches of the government.

7 Conclusion

This article has shown that capital mobility may be associated with positive as well as with negative spillovers between countries. It has emphasized the importance of the distribution of capital in such spillovers. When capital ownership is spread wide outside the elite, the threat of exit constrains the extent to which the elite may extract rents. Eventually, this may be a force towards the diffusion and spread of democracy, as predicated in Bates and Lien (1985):

One of the most striking features of the evidence is that in both

England and France it was the taxation of “moveable” property that promoted the conferral of political representation by revenue-seeking monarchs.

Conversely, when capital is narrowly controlled, the elite may increase rent extraction on the population, while taking advantage of an alternative jurisdiction to insulate their own assets. This would correspond to all situation where capital is sunk and easy to grab, such as point-source mineral resource-rich countries, or to central planning in an industrialized country. A key insight is the potentially dysfunctional role played by a neighboring country with good institutions. The article also suggests an endogenous path for the emergence of tax havens, and their symbiotic relationship with the tax-evading elites in large countries.

The new framework put forward in this article yields other predictions, such as the negative impact of tax evasion on the politics of the home country, or the aligned incentives of the elites in the Western world with those of patrimonial regimes. More generally, this framework has promising applications for future research in the field of comparative political economy.

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Appendix [For Online Publication]

A The profitability constraint

Let me take a closer look at the profitability condition, with $R_t = R(z_t) = \frac{\tau(z_t)l(\tau(z_t))}{1-z_t} - \pi$ when the fiscal policy is not externally constrained.

R increases in z_t , $R(0) = -\pi$, and $R(1) = \infty$: as long as the fiscal policy is unconstrained, there exists a unique \bar{z} such that $R(\bar{z}) = 0$. By analogy, when the fiscal policy is externally constrained, $R_t = R(z_t, \mathcal{T}_t)$. Since $1 - (1 - c)(1 - \mathcal{T}_t^B) < \tau(z_t) < \tilde{\tau}$, agents are on the left-hand side of the Laffer curve: R is an increasing function of both \mathcal{T}_t^B and z_t .

$R(\bar{z}, 1 - (1 - c)(1 - \mathcal{T}_t^B)) = 0$ therefore defines \bar{z} as a decreasing function of \mathcal{T}_t^B : it takes fewer members of the elite to exhaust the political rents. In other words, the profitability condition is unlikely to be binding when the external constraint is not binding or weak (exclusive jurisdiction abroad), but becomes much more present when the external constraint is strong (inclusive

jurisdiction abroad). Possibly, if c is high enough and π low enough, \bar{z} is constant (low) throughout.

Fig. n°10 describes Eq. n°7 when either of the two possible constraints is binding.

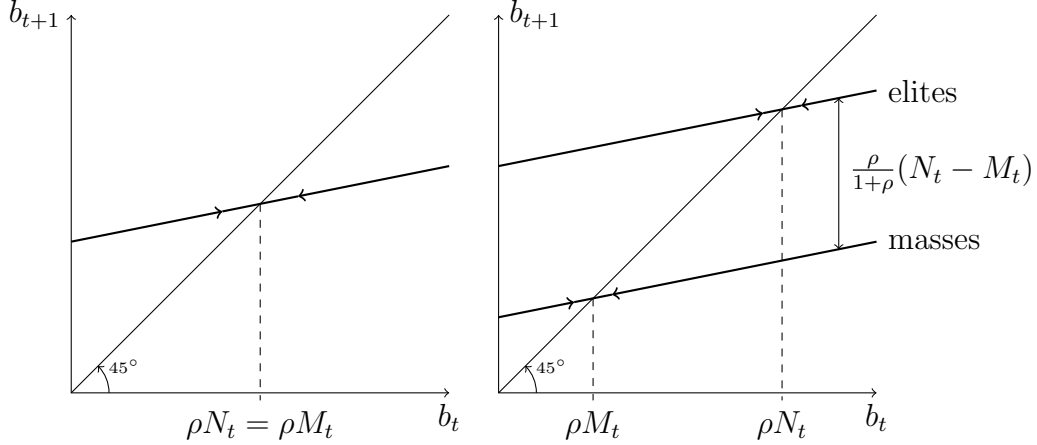


FIGURE 10: Dynamics of wealth accumulation for the elite and for the masses. Left: binding profitability constraint, right: binding liquidity constraint.

Either $q_t \geq \bar{z}$, and the liquidity constraint remains binding: individuals such that $b_t \geq \pi$ can pay the sunk cost necessary to being in the elite, and $z_t = q_t = F_t(\pi)$; or $q_t < \bar{z}$, and the binding constraint is the profitability constraint. In that case individuals with sufficient bequests are indifferent between being members of the elite and of the masses in equilibrium.

B The two-stage game of fiscal competition / the external constraint

In the chosen framework, the elite of B cannot hope to attract the capital owned by the masses of A . A Nash equilibrium of the game never involves a flow of the masses' asset from A to B . The concept unfortunately leads us no further: in terms of best response, B 's elite is indifferent between any level of \mathcal{T}^B . However, the rate which maximizes

$$l(\mathcal{T}^B) + \phi(1 - l(\mathcal{T}^B)) + \frac{\mathcal{T}^M(nl(\mathcal{T}^B) + l(1 - (1 - c)(1 - \mathcal{T}^B)))}{n(1 - z^B)},$$

is the hypothetical program of B 's elite when they believe they might attract capital from country A . It implicitly defines a tax rate $\mathcal{T}_t^B = \mathcal{T}(z^B, \frac{1}{n})$ as a function of z^B (the proportion of masses in the second country) and n , increasing in z^B .

This rate can be distinguished as the unique strategy yielding an extensive-form trembling hand perfect equilibrium. The game is also weak-dominance solvable, and this rate can be derived as the unique equilibrium of a process of iterated elimination of weakly-dominated strategies (the proof is below). Moreover, the two concepts are robust to alternative specifications of the game. The only important assumption is that the first country be able to make the last move in setting the tax rate, which adequately accounts for a fiscal policy under an external constraint. In other words, it is easy to provide a formal model of $\mathcal{T}_t^B = \mathcal{T}(z_t^B, \mathcal{I}_t)$, the "natural" rate to describe the external constraint. \mathcal{I}_t is the amount of asset inflows this elite is trying to attract, and \mathcal{T} is an increasing function of z_t^B .

Proof that the two-stage game of fiscal competition is weak-dominance solvable. The proof proceeds by iterated elimination of weakly dominated strategies, which can yield one undominated strategy only if done correctly. Let me consider the game in normal form with two countries i and j , where a strategy for the elite of country i can be written $\{\mathcal{T}^i, t^i\}$, where \mathcal{T}^i is the tax rate set in period 2 and t^i is a mapping which to any tax rate \mathcal{T}^j set by the elite of country j in stage 2 associates a tax rate $t^i(\mathcal{T}^j)$ set by the elite of country i in stage 3:

$$t^i : \mathcal{T}^j \longrightarrow t^i(\mathcal{T}^j).$$

For notational convenience, let me write $\mathcal{T}^{i*} = \mathcal{T}(z^i, n)$ and $\mathcal{T}^{j*} = \mathcal{T}(z^j, \frac{1}{n})$. Let me consider one process of iterated elimination which yields only the desired strategy.

1. Any strategy $\{\mathcal{T}^i, t^i\}$ such that $\exists \mathcal{T}^j, t^i(\mathcal{T}^j) < \min[1 - (1-c)(1-\mathcal{T}^j), \tau(z^i)]$ is weakly dominated by the strategy $\{\mathcal{T}^i, \mathcal{T}^j \longrightarrow \max[t^i(\mathcal{T}^j), \min[1 - (1-c)(1-\mathcal{T}^j), \tau(z^i)]]\}$, and can therefore be eliminated (for country i and j , implicitly from now on).
2. Any remaining strategy $\{\mathcal{T}^i, t^i\}$ such that $\mathcal{T}^i > \mathcal{T}^{i*}$ is weakly dominated by the strategy $\{\mathcal{T}^{i*}, t^i\}$.
3. Any strategy $\{\mathcal{T}^i, t^i\}$ such that t^i is not nondecreasing is weakly dominated by the strategy $\{\mathcal{T}^i, \mathcal{T}^j \longrightarrow \max_{t \in [0, \mathcal{T}^j]} t^i(t)\}$. Obviously $\mathcal{T}^j \longrightarrow \max_{t \in [0, \mathcal{T}^j]} t^i(t)$ is nondecreasing.

4. Any remaining strategy $\{\mathcal{T}^i, t^i\}$ such that $t^i(\mathcal{T}^{j*}) > 1 - (1 - c)(1 - \mathcal{T}^{j*})$ is weakly dominated by the strategy $\{\mathcal{T}^i, \mathcal{T}^j \rightarrow \min[t^i(\mathcal{T}^j), t^i(\mathcal{T}^{j*})]\}$.
5. Any remaining strategy $\{\mathcal{T}^i, t^i\}$ such that $\mathcal{T}^i < \mathcal{T}^{i*}$ is weakly dominated by the strategy $\{\mathcal{T}^{i*}, t^i\}$.
6. Any remaining strategy $\{\mathcal{T}^{i*}, t^i\}$ such that $\exists \mathcal{T}^j, t^i(\mathcal{T}^j) > \min[1 - (1 - c)(1 - \mathcal{T}^j), \tau(z^i)]$ is weakly dominated by the strategy $\{\mathcal{T}^{i*}, \mathcal{T}^j \rightarrow \min[1 - (1 - c)(1 - \mathcal{T}^j), \tau(z^i)]\}$.

The only strategy standing at the end of the iterated elimination process is $\{\mathcal{T}^{i*}, \mathcal{T}^j \rightarrow \min[1 - (1 - c)(1 - \mathcal{T}^j), \tau(z^i)]\}$. Notice that the proof does not exclude the possibility that another rate could also be standing at the end of another iterated elimination process.

C Proof of Prop. 1

When $\rho N_t < \pi$, the number q of individuals who can pay the cost π of entering the elite decreases between time t and $t + 1$ (cf. Fig. n°2).

The sequence q_t is bound upward by 1, so it converges toward a limit. That limit cannot be lower than \bar{z} . The proof is by contradiction. N is a function of z only, which is stable equal to \bar{z} when the profitability constraint is binding. In that case $q_{t+s} = F_{t+s}(\pi) = F_{t+s-1}(\frac{1+\rho}{\rho}\pi - N) = F_t(\frac{1+\rho^s}{\rho} - \rho N(1 - \frac{1+\rho^s}{\rho}))$ which converges to 1.

Therefore there exists an s for which $q_{t+s} > \bar{z}$, a point at which the liquidity constraint becomes binding. When the liquidity constraint is binding, $z_t = q_t$ is an increasing sequence, and so is $N_t = N(z_t)$. There exists a finite time $S > 0$ such that $\rho N_S < \pi \leq \rho N_{S+1}$. The proof is again by contradiction. Suppose for all $t > 0$ we had $\rho N_t < \pi$. Since z_t is increasing and bounded, it must converge. N tends to ∞ when z tends to 1, so since N_t is bounded, by continuity, the limit of z_t must be lower than 1. That means the dynasty with the largest endowment should forever stay in the elite. An argument similar to the previous paragraph shows this is impossible.

When $\rho M_t \leq \pi \leq \rho N_t$, which can be the initial situation or the outcome of the previous situations, there is no social mobility in the economy (cf. Fig. n°3).

Lastly, when $\pi < \rho M_t$, the number q of individuals who can pay the cost π of entering the elite increases between time t and $t + 1$ (cf. Fig. n°4).

In other words $q_{t+1} < q_t$. The sequence q_t is bound downward by 0, so it converges toward a limit. One more time, that limit cannot be higher than \bar{z} .

In other words the liquidity constraint cannot remain binding forever in that scenario. When the profitability constraint is binding, q_t is decreasing and converges towards 0. The group of people able to apply for elite status grows until it encompasses the whole population, but in equilibrium, individuals of that group are indifferent between becoming elite or remaining in the masses, and do no better than individuals who remain liquidity constrained.

D Extension 1: Public inputs

In the standard setup, I considered the state only as an instrument of predation for the elite. However, the state and the elite have traditionally fulfilled another important function: they also provide public goods essential for economic activity (public inputs). Obvious examples are education, health, transport and communication infrastructure, public institutions and defense. In fact, this second function of providing essential public inputs arguably accounts for a much larger share of the state's revenue than rent-extraction.

As I show here, in the standard, most general case, fiscal competition should both increase the provision of public inputs and decrease the fiscal pressure: the state should only be forced to become more efficient, from the productive sector's point of view. Except for that important reinterpretation, public inputs provision is here presented only as an extension of the model, because it does not substantially alter the conclusions of a competition limited to taxes. All previous results extend here.

D.1 The setup

In this section, I extend the model to account for the provision of public inputs. The elite use part of the revenue of taxation to finance public inputs. What remains is the political rent they manage to extract.

Let me follow Ades and Verdier (1996) to account for a positive and equal effect of the provision of public inputs on the productivity of the formal and informal activities. Technology in the formal sector is such that l_t units of capital produce $h(g_t)l_t$ units of output, and in the informal sector such that l_t units of capital produce $h(g_t)\phi(l_t)$ units of output. g_t is the per capita amount of public inputs provided by the state. The marginal return of public inputs provision is assumed to be positive and increasing, so $h' > 0$, $h'' < 0$. For there to be any public input provision, the marginal benefit of the first unit of public input must be higher than the cost of public funds: $h'(0) > 1$. The structure of the game is the same as the first game of tax competition with

no public input provision, except that in stage 2, the elite can now choose both the tax rate and the way in which the resulting tax revenue is allocated between redistribution (to itself) and the provision of public inputs: g_t if it keeps its national asset only.

Now that the informal sector can be directly affected by the policy of the elite, eg. public input provision, I need to actually make an assumption on the location of an individual's informal asset. For simplicity, let me assume that any individual can only have his activities, both formal and informal, in the same country. In other words, an individual cannot benefit from the high provision of public inputs in the informal sector of a country and from the low tax rate in the formal sector of another country. Under this useful assumption, whether the public input affects either or both of the formal and informal sector becomes irrelevant. This assumption, reasonable as it may sound, is not straightforward, and I discuss its implications later.

D.2 Fiscal policy

Solving the game backwards, in that case, the equal effect of public inputs on both domestic sectors ensures that the capital supply still depends only on the effective tax rate (to still be interpreted as the cost of doing business, which fully accrues to the elite) τ_t born by the individual. It can still be defined by $1 - \tau_t = \phi'(1 - l_t)$, and therefore still by $l_t = l(\tau_t)$. With public inputs, the economic income should now be written $Y(g_t, \tau_t) = h(g_t)M(\tau_t)$.

By analogy, the external environment can be characterized by a tax rate \mathcal{T}_t , and by a provision \mathcal{G}_t of public inputs. As in the case without public input, the masses never allocate their asset abroad in equilibrium: indeed, suppose the elite decided to allow the asset flight. They would derive an income $\mathcal{Y}_t = Y(\mathcal{G}_t, 1 - (1 - c)(1 - \mathcal{T}_t))$, and since there is no domestic activity to tax, no economic rent. By setting for instance $\tau_t = \mathcal{T}_t$, however, they ensure that they would be able to match the other country's provision of public input; and if they do, they would derive an economic income $Y(\mathcal{G}_t, \mathcal{T}_t) > \mathcal{Y}_t$, plus a nonnegative political rent from taxing the domestic asset. Therefore the elite are always better off making sure they retain the national assets on the domestic territory.

In stage 2, the the program of the elite can therefore be written:

$$\begin{aligned} & \max_{\tau_t, g_t} Y(g_t, \tau_t) + \frac{\tau_t h(g_t) l(\tau_t) - g_t}{1 - z_t} \\ \text{s.t. } & \begin{cases} \tau_t h(g_t) l(\tau_t) \geq g_t (\geq 0) & \text{budget constraint} \\ Y(g_t, \tau_t) \geq \mathcal{Y}_t & \text{no asset export} \end{cases} \end{aligned}$$

Writing λ_t the Lagrange multiplier for the budget constraint in stage 3 and μ_t the Lagrangian multiplier for the no asset export constraint, this program yields the following first order conditions

$$\begin{cases} -(1 + \mu_t)l + (\tau_t l' + l) \left(\frac{1}{1-z_t} + \lambda_t \right) = 0 \\ (1 + \mu_t)h'B + (h'\tau_t l - 1) \left(\frac{1}{1-z_t} + \lambda_t \right) = 0 \end{cases} \quad (10)$$

and exclusion conditions $\lambda_t > 0$ if $\tau_t h l = g_t$, $\lambda_t = 0$ if $\tau_t h l > g_t$, $\mu_t > 0$ if $Y(g_t, \tau_t) = \mathcal{Y}_t$ and $\mu_t = 0$ if $Y(g_t, \tau_t) > \mathcal{Y}_t$. In equilibrium, political rents will never be less than π , which implies that $\lambda_t = 0$. As without public inputs, I will first consider the unconstrained fiscal policy ($\mu_t = 0$), and then the impact of the constraint ($\mu_t > 0$).

D.3 Unconstrained fiscal policy

When a country is unconstrained by the fiscal competition of another, $\mu_t = 0$ too. Under condition (C1), the elite sets $\tau_t = \tau(z_t)$ in stage 2, the same as without public inputs. Notice that this tax rate is determined independently from the level of public input provision. This is good news, as it ensures the model is robust to changing the specification to one where public input provision can only happen once the taxes have been raised. Also, the tax rate is still decreasing in the size of the elite (increasing in z_t).

The provision g_t of the public input results from the optimal allocation of tax revenue between public inputs and transfers to the elite itself. At the margin, public input provision affects positively the income of the elite through two channels: through its increased own economic income, and through a wider tax base. Since public input provision comes at a marginal cost of $\frac{1}{1-z_t}$ in terms of transfers, the elite balance the costs and benefits by providing the optimal level of public inputs $g_t = g(z_t)$ such as $((1 - z_t)M(z_t) + \tau(z_t)l(\tau(z_t)))h' = 1$. g is a decreasing function of z_t . In other words, as the size of the elite increases, the amount of state revenue allocated to the provision of public inputs increases. The intuition is simple: as the elite broadens, transfers have to be shared among more elites, and the return to allocating tax revenue to transfers decreases.

The political rent can therefore be written $R_t = R(z_t) = \frac{\tau(z_t)h(g(z_t))l(\tau(z_t)) - g(z_t)}{1-z_t}$, with R an increasing, continuous function of z_t , $R(0) = 0$ and $R(1) = \infty$. In stage 1, the same conditions determine entry into the elite: first, $b_t \geq \pi$, and second $R_t \geq \pi$. There exists a unique \bar{z} such that $R(\bar{z}) = \pi$.

A quick word on the composition of the elite. The liquidity condition is the same here as it was without any public input provision; the profitability

condition, on the other hand, is much more stringent, and also much more realistic. The dynamics of the elite now explicitly focus on small elites, though all is conceptually equivalent. The dynamics of wealth accumulation, and therefore of the dynamics of the elite, are essentially the same as without public inputs, as described by Eqs. n°6 and 7, with incomes now defined by

$$\begin{cases} N_t = N(z_t) = Y(g(z_t), \tau(z_t)) + R(z_t) \\ M_t = M(z_t) = Y(g(z_t), \tau(z_t)). \end{cases}$$

Public inputs are only provided if $h'(0) > 1$, in which case the simple existence of the public inputs raises the income of the masses, and reduces the political rent extracted by the elite. As could be expected, inequalities are unequivocally lower than in the case without public inputs. Yet the nature of the political dynamics is not modified by the provision of public inputs: as without public inputs, A and B are respectively increasing and decreasing in z_t .

When π is high, eg. when $\rho N_t < \pi$, the elite shrinks until it stabilizes in a finite time. The tax rate increases, and as a novelty, the provision of public input diminishes. Political rents and economic distortions still increase. Once again, the definition of inequalities would need to be further specified in order to provide a prediction, but this is not central to this analysis. After the size of the elite stabilizes, taxes and public input provision remain constant.

When π is intermediate, eg. when $\rho M_t \leq \pi \leq \rho N_t$, the elite remains stable at its initial size, with no entry or exit. The tax rate, public input provision, political rents, distortions and inequalities remain constant.

Finally, when π is low, eg. when $\pi < \rho M_t$, the size of the elite increases as fewer individuals are liquidity constrained. As more people get involved in the fiscal decision making, taxes, distortions and political rents fall, as well as inequalities. Meanwhile, provision of the public input increases: the state becomes more productive and less redistributive. Because of a smaller tax burden and a better allocation of tax revenue to market activities, output increases until the profitability constraint becomes binding (which happens faster than without public inputs, since \bar{z} is higher), and the output stabilizes.

To summarize, allowing the state to provide public inputs confirms the findings of Prop. n°1. The political and economic nexus allocates resources in a more efficient way as there are less political rents, and a faster spread of political access. When taking into account that the elite can provide public inputs, a reduction in the cost of political participation π has two effects. First, it reduces allocative distortions by lowering the tax rate imposed on manufacturing activities. Second, it improves the allocation of tax revenue, by increasing the share devoted to the provision of the productive public input.

D.4 The external constraint

In equilibrium, the elite would always manage to retain the assets of the masses by providing them with an income $Y(g_t, \tau_t) \geq \mathcal{Y}_t$. Following the same line of arguments as without public inputs, in a two-country setup, I can provide a model of \mathcal{T}_t^B and \mathcal{G}_t^B where they are the unique strategy to yield an extensive-form trembling hand perfect equilibrium, and the unique strategy resulting from a process of iterated elimination of weakly dominated strategies: the program of the foreign elite can be written

$$\begin{aligned} & \max_{\mathcal{T}_t^B, \mathcal{G}_t^B} Y(\mathcal{G}_t^B, \mathcal{T}_t^B) + \frac{\mathcal{T}_t^B h(\mathcal{G}_t^B) (l(\mathcal{T}_t^B) + nl(1 - (1-c)(1 - \mathcal{T}_t^B))) - (1+n)\mathcal{G}_t^B}{1 - z_t^B} \\ \text{s.t. } & \mathcal{T}_t^B h(\mathcal{G}_t^B) (l(\mathcal{T}_t^B) + nl(1 - (1-c)(1 - \mathcal{T}_t^B))) \geq (1+n)\mathcal{G}_t^B. \end{aligned}$$

The constraint is not binding. The elite therefore vote on $\mathcal{T}_t^B = \mathcal{T}(z_t^B, \frac{1}{n})$, the same as without public inputs. Notice that this tax rate is determined independently from the level of public input provision. This is good news, as it ensures the model is robust to changing the specification to one where public input provision can only happen once the taxes have been raised. Also, the tax rate is still decreasing in the size of the elite (increasing in z_t^B). The elite also vote on $\mathcal{G}_t^B = \mathcal{G}(z_t^B, \frac{1}{n})$ such that $(1 - z_t^B)M(\mathcal{T}_t^B) + \mathcal{T}_t^B (l(\mathcal{T}_t^B) + nl(1 - (1-c)(1 - \mathcal{T}_t^B)))h' = 1 + n$. The first partial derivative of \mathcal{G} is negative. In other words, as the size of the elite increases, the amount of state revenue the elite are willing to allocate to the provision of public inputs increases.

Let $\mathcal{Y}_t^B = \mathcal{Y}(z_t^B, \frac{1}{n}) = Y(\mathcal{G}(z_t^B, \frac{1}{n}), 1 - (1-c)(1 - \mathcal{T}(z_t^B, \frac{1}{n})))$ be the economic income an individual can derive from allocating his asset abroad. The fiscal constraint is effectively binding when $\mathcal{Y}_t^B > Y(g_t, \tau_t)$, which also corresponds to $\mu_t > 0$. \mathcal{G} is decreasing and \mathcal{T} increasing in z_t^B , so Y is decreasing in z_t^B . In other words, the income offered on an investment abroad is higher if the polity abroad is more inclusive, which we take as a reasonable description of the external constraint on the fiscal policy, and a very straightforward extension of the standard model.

D.5 Constrained fiscal policy

Let me now consider stage 2, when the fiscal policy is externally constrained. In that case, the program of the elite can be simplified into

$$\begin{aligned} & \max_{\tau_t, g_t} h(g_t)\tau_t l(\tau_t) - g_t \\ \text{s.t. } & h(g_t)M(\tau_t) \geq \mathcal{Y}_t^B \end{aligned}$$

where the constraint is now binding, and can be defined as an increasing function in the (τ_t, g_t) -plane. This function moves northwestward when \mathcal{Y}_t^B increases.

Once again, this program is compatible with an alternative setting where public input is provided only once the taxes have been raised. The problem yields two first order conditions in τ_t and g_t . Eliminating μ_t between these two expressions can be shown to yield

$$\frac{1}{h'(g_t)} = \frac{l(\tau_t) + \tau_t l'(\tau_t)}{l(\tau_t)} M(\tau_t) + \tau_t l(\tau_t). \quad (11)$$

For a well defined concave problem,¹⁰ the right hand side of this equality is a decreasing function of τ_t , while the left hand side is an increasing function of g_t . Therefore the first order condition defines a decreasing function in the (τ_t, g_t) -plane, independent of \mathcal{Y}_t^B . As a consequence, when the no export constraint is binding and \mathcal{Y}_t^B increases, the elite both lower the level of taxes and expand the provision of public inputs.

Proposition 8 $\frac{d\tau_t}{d\mathcal{Y}_t^B} < 0$ and $\frac{dg_t}{d\mathcal{Y}_t^B} > 0$.

As when the country is fiscally independent, the dynamics of wealth accumulation are essentially the same when taking into account the provision of productive public inputs. Inequalities are unequivocally lower than in the case without public inputs. Props. n°2 and 3 can be immediately extended here. Prop. n°8 characterizes the provision of public inputs during the transition and in equilibrium. When π is high, the elite shrinks until it stabilizes in a finite time. Taxes are lower than if the country were independent, and a higher public input provision further depresses the income of the elite, whose depletion is accelerated as a result. Political rents and economic distortions are lowered by the fiscal competition, and the output is higher, thanks to an expanded provision of public inputs. When π is intermediate, the elite remains stable at its initial size, with no entry or exit. As previously, taxes, distortions and political rents are lower than if the country were fiscally independent, and public input provision is higher. Finally, when π is low, applies. The size of the elite increases and fewer individuals are liquidity constrained. Taxes, distortions, political rents and inequalities fall, while public input provision increases.

¹⁰The derivative of the right hand side has the same sign as $l(\tau_t)l'(\tau_t) + \tau_t l(\tau_t)l''(\tau_t) - \tau_t l'(\tau_t)^2$. Under (C1), this expression is negative. I am making no further assumption here.

Similarly the intuitions of Props. n°4, 5, 6 and 7 survive the introduction of public inputs.

Prop. n°8 therefore offers a novel insight, accounting for a simultaneous decrease of the costs of doing business and increase in the provision of public inputs in the face of an external constraint. Under fiscal competition, public input provision and the tax policy are complementary tools for the rent-seeking elite who wish to avoid an asset flight, quite intuitively: if the tax rate is interpreted as accounting for the costs of doing business, the public input can after all be considered as a negative cost. The state is more productive and less redistributive (towards the elite) than without the external constraint. Under the budget constraint, without rent extraction, a lower tax revenue would mechanically translate into less public expenditure. Taking into account rent extraction, however, shows that the fiscal competition impacts the rents extracted, not the provision of public inputs.

This proves that in the main model, “taxes” were rents extracted, strictly speaking, inefficiencies associated with distortions of the productive sectors, the costs of doing business with no matching institutions or public inputs.

E Extension 2: Mineral rents

Suppose that the country contains mineral resources, which can possibly provide a period income of W . Point-source resources are controlled by the state, and in the absence of a mechanism of violent overthrow of the elite, are uncontested by the masses. The asset supply function is independent from the presence of minerals. Logically, income derived from mineral extraction is not taxed (or if it is, it is strictly for show, since the beneficiaries of the tax proceeds coincide with those who bear the burden of the tax). Therefore, the tax policy of the elite remains unchanged, as well as the income of the masses, whether $M(z)$, $M(z, \mathcal{T})$ or $M(1)$, in the corresponding situations.

The income of the elite, however, is increased relative to each of these situations. This additional mineral rent is shared among elites, who thus derive an additional individual income of $\frac{W}{1-z}$ from mineral extraction. The equilibrium dynamics are the same, with one exception: if W is big enough, eg. $W \geq \pi$, the profitability constraint is never binding. The logic of Props. n°1 and 2 is maintained throughout, at least when π is not too low. When π is low, if $W \geq \pi$, the elite expands until its size reaches 1, with all members of the society sharing the benefits of the mineral rent.

Keeping the notation N_t and M_t for the incomes of the elite and of the masses without the mineral rents, the following proposition ensues:

Proposition 9 *The elite expands iff $\pi < \rho M_t$, and taxes shrink to 0 in a finite time iff additionally $W \geq \pi$. It shrinks iff $\pi > \rho N_t + \frac{W}{1-z_t}$.*

In any of the cases under consideration in this paper, the presence of mineral rents may allow a wider elite to maintain itself in control. While in the current period they do not affect taxes, dynamically and in equilibrium they may therefore favor lower taxes and distortions imposed on the productive sector. They unequivocally increase the level of inequalities, in the dynamics and in equilibrium (except when $\pi < \rho M_t$: in this case, the society eventually reaches a state of perfect equality, as without rents). Mineral rents, however, do not change the outcome if the political process is to become inclusive ($\pi < \rho M_t$) or to remain polarized ($\rho M_t \leq \pi$).

This simple framework is maybe too simple, and cannot provide further insights. Any further discussions of the role of mineral rents in tax evasion, for instance, would require assumptions with an important risk that they would be *ad hoc*, or would lead to a much more complex model than used in this paper.

F Differentiated mobility and the dynamics of the elite

As studied in Wong (2008), the elite may have some degree of control over the relative mobility of their own asset *vs.* that of the masses. They may be able to discriminate assets based on intrinsic characteristics, but also based solely on ownership: they are in a position to enact *ad hoc* regulations to legally protect the mobility of assets owned by members of the elite (at least to a certain extent). The paper has studied extensively two scenarios: one where all assets are mobile, irrespective of elite status; and another where the masses are captive, while the elite are mobile. A more realistic scenario may involve imperfectly mobile masses, and fully mobile elite.

In any case, mobility of the masses' assets is constrained by the best effort of the elite to capture and tax them. Yet the best effort of the elite may be more or less successful, depending on the asset's intrinsic characteristics. Being elite helps to make one's asset more mobile. But does intrinsically higher mobility of one's asset influence the chances of making it into the elite?

Assume that the population is now composed of individuals owning one of two distinct assets, invested in their respective formal sector. As before, the elite face two opposite motives when setting the tax rate on both sectors. First, rent extraction pushes them to tax as close as possible from $\tilde{\tau}$, the top of

the Laffer curve. Second, efficiency will drive those elite who own a fraction of either asset to lower the tax rate on this factor relative to this maximum. Since the elite is now possibly composed of agents with differing interests, the tax policy may be arbitrated according to several rules. It is reasonable, however, to argue that the weight of the efficiency motive in the final decision is going to increase with the fraction of individuals who own the corresponding asset. Representation in the elite lowers the tax rate on an asset.

Suppose now that the first asset is less mobile than the second. In other words, the cost c of shifting the latter is lower. Let me assume that c is low enough for another jurisdiction to constrain the domestic taxation of that asset. Strictly speaking, the tax rate on the more mobile asset may still be higher than on the more captive asset, if the elite is mostly composed of owners of the captive asset and if the mobility effect is small. In that case, or if the return on the mobile asset is too low, the *status quo* is maintained, and the model yields no new intuition.

In the general case, however, the mobile asset will be taxed at a lower rate than the captive one. Relative to the situation where the captive asset was alone, the economic income M_t^{mob} of mobile asset owners increases. The economic income of captive asset owners M_t^{cap} decreases if their asset represents a lower share of the elite.

The effect of the introduction of a second, more mobile asset, on the political rents R_t , is ambiguous. Additionally, the heterogeneity of the elite could possibly lead to different sharing rules among different elite subgroups, and therefore to differentiated effects between the two groups. Nevertheless, let me simplify this question. While I remain agnostic as to the relative influence of the two groups in setting the tax rate, let me assume that elites continue to receive equal shares of the political rents. All else kept equal, increased mobility of one asset reduces the aggregate rent extraction, and thus the individual political rents. It is likely, however, that increased mobility may be associated with higher returns. Higher returns can only reinforce the effects previously mentioned on M_t^{mob} , but they may also reverse the negative effect on political rents.

To summarize so far: the disposable income of the more mobile asset owners increases unambiguously, whether they belong to the masses or to the elite. If anything, the disposable income M_t^{cap} of less mobile members of the masses decreases. The disposable income N_t^{cap} of less mobile members of the elite can increase or decrease.

The ambiguous effect of mobility on the political rents generates several possible scenarios. It would be fastidious to describe them all. It would also exceed my purpose, which is to examine who makes it into or out of the elite

during one stage. Still, even when dropping the comparison with the baseline scenario, where everyone is mobile, there are two cases left.

If $M_t^{mob} \leq N_t^{cap}$ (cf. Fig. N°11), the composition of the elite remains stable for intermediate values of π , that is when $\rho M_t^{mob} \leq \pi \leq \rho N_t^{cap}$. For lower intermediate values of π , that is when $\rho M_t^{cap} \leq \pi < \rho M_t^{mob}$, then the children of a cohort of mobile asset owners only will gain access to the elite in the next period. For low values of π , the children of a cohort of both more and less mobile asset owners will gain access to the elite. For higher intermediate values of π , that is when $\rho N_t^{cap} < \pi \leq \rho N_t^{mob}$, then the children of a cohort of less mobile assets owners only will fall out of the elite in the next period, while the children of mobile asset owners remain in the elite, and benefit from the fallout. For high values of π , the children of a cohort of both more and less mobile asset owners will fall out of the elite.

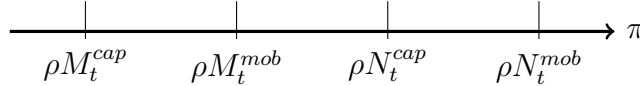


FIGURE 11: Small mobility benefits

If $N_t^{cap} < M_t^{mob}$ (cf. Fig. N°12), which may happen when mobility entails a sufficient advantage, then for intermediate values of π , that is when $\rho M_t^{cap} < \pi < \rho N_t$, social mobility goes simultaneously in the two directions. While the children of a cohort of mobile asset owners will gain access to the elite in the next period, the children of another cohort of less mobile asset owners will fall out of the elite. The other cases remain identical.

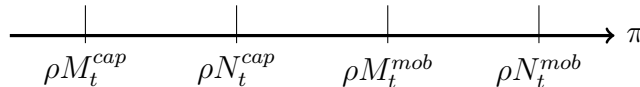


FIGURE 12: Large mobility benefits

Whether mobile asset owners get their children into the elite faster while less mobile asset owners don't, whether the children of captive asset owners fall out of the elite while more mobile asset owners manage not to, or both at the same time, the composition of the elite in the next period is shifted towards the children of individuals who dispose of more mobile assets. Beyond the regulatory aspect of mobility described in the introduction of this section, this framework offers some insights why owners of more mobile assets are more likely to make it into the elite. For these two reasons, endogenous regulation and exogenous advantage in making it into the elite, the scenario where the

assets owned by the elite are more mobile than those owned by the masses seems like a more realistic one.