Political Transitions and Foreign Intervention*

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Abstract

The recent literature on the emergence and consolidation of democracies or autocracies focuses on closed economies and highlights domestic economic factors, such as economic growth or inequality, as the main determinants of political transitions. In this paper, we argue that international capital flows and intervention of foreign governments to protect specific economic interests is an important, yet overlooked, trigger of regime transitions and consolidations. Building on recent work by Acemoglu and Robinson (2001), we develop a formal model of political transitions in economies with access to international capital markets and allow a foreign government to influence the political development in other countries. International capital flows and the possibility of foreign intervention significantly affect regime dynamics and expand the set of sustainable political regimes. The model identifies new channels through which economic factors can affect regime choices and demonstrates that the impact of economic growth and business cycle shocks on regime transitions is very different in an open economy with foreign intervention compared to a closed economy. The model casts new light on the history of political transitions in many parts of the world and demonstrates why monetary transfers or loans to new political regimes can have a destabilizing effect and identify conditions under which they help to consolidate a democracy.

Keywords: Political transitions, democracy, autocracy, foreign investments; foreign government intervension

JEL Classification: D72; D74; H71, 015, P16.

1 Introduction

This paper analyses the influence of foreign governments on the development of domestic political institutions. Though the emergence and consolidation of different political regimes have been studied by political scientists for decades, formal analysis from a political economics perspective is relatively new. Indeed, there is a vigorously emerging literature in economics that attempts to identify causes and origins of political institutions.

Two different yet complementary streams of literature may be identified. Both share the focus on the elite's interest in extending the political franchise. On one hand, democratization is a consequence of some economic or political change that makes democracy

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more profitable for the elite. This might be the case if property rights are better protected under democracy (Gradstein, 2006) or if democracy enhances faster human capital accumulation (Bourguignon and Verdier, 2000). On the other hand, democracy is the consequence of a compromise reached by the elite and the population to avoid a revolution that would eventually expropriate all the assets of the economy. According to this framework, developed by Acemoglu and Robinson (2000, 2001, 2006), a democratic regime would emerge under the threat a revolution and concessions are insufficiently credible (see also a discussion by Robinson (2005) and Conley and Temimi (2001)). Transitions from democracy to autocracy have also been studied within this framework: the members of the elite have greater incentives to mount a coup in unequal societies, as they will suffer from more redistribution under democracy as the median voter cannot promise credible tax concessions.

We contend that this literature has overlooked the role played by foreign governments and investors. Previous work has mainly focused on societies with no interaction with the rest of the world. However, there are plenty of examples in history where a foreign government has played a critical role in altering the political process of a country. Examples of foreign influence on the transition to autocracy range from the coups d'état in Iran in 1953 and Guatemala 1954, sponsored by the US, to Chile in 1973 and Nigeria 1974, where coups d'état were facilitated by the US and France, respectively. Democratization has also been induced or reinforced by foreign influence, as in the cases of Eastern Europe, Costa Rica and South Korea. It is also easy to find contemporaneous examples as the cases of Iraq, Venezuela, Bolivia and Ecuador, just to mention a few of a longer list. The evidence is, in fact, so abundant that there is a real need for theoretical analysis that can help us understood how and under which conditions a foreign government successfully can influence the political development of another country and for what reasons. This paper makes a contribution in this direction.

The origins of foreign intervention are sometimes political, as during the Cold War, but in many cases they serve to preserve or protect foreign economic interests in the affected economy. To capture this and analyze its consequences, we provide a framework that, building on Acemoglu and Robinson (2000, 2001 and 2006), incorporates strategic foreign investments into a theory of political transitions.

Introducing foreign investment has two effects. First, it enlarges the set of possible political regimes that can arise in equilibrium and allows for a better understanding of the emergence of more or less foreign investment-friendly political regimes. Second, we can investigate the incentives for foreign intervention and how this affects the establishment of political regimes. We show that foreign investment receives a different treatment depending on the type of political regime. This leads to very different investment environments and generates an incentive for the foreign government to intervene. We show that this incentive is enhanced as and when foreign investments are of substantial strategic value to the foreign government. Therefore, we emphasize that foreign intervention is driven by the strategic nature of the investment made abroad.

We find that a consolidated democracy, where poor citizens decide taxation, is unfriendly towards foreign investment compared with a consolidated autocracy under which the interests of elite and foreign investors go in the same direction. A foreign government would like to improve the domestic investment environment and can do so by helping or hindering political transitions. The optimal type of intervention depends on the current political regime. For instance, a foreign government can help an autocracy to reduce the revolution threat by funding counter-revolutionary activities. It can also make concessions easier and more credible. Both interventions help to consolidate autocracies. However, by making concessions credible in a democracy, foreign intervention can also facilitate democratic consolidations: if an autocracy is threatened by a revolution, giving concessions to a democratic regime will induce democratization as it reduces the redistribution.

We find the following results: An increase in the risk facing foreign investors and the associated capital flight makes foreign intervention likelier which reduces the stability of democracies. This may also enhance the persistence of autocracies. Under autocracy, a rise in the risk premium will favor intervention through obstruction of democratization and a subsidy to the elite to help its counterrevolutionary efforts. Foreign interventions are more likely in recessions than in booms. This reduces the chances of democratization. As a corollary, democratization, under foreign influence, tends to occur during economic booms. More foreign intervention is to be expected in unequal societies. This helps to understand why democracies are less stable the more concentrated are the means of production in a country. These results are different in absence of foreign intervention.

As political regimes are not equally influenced by the rest of the world and the nature of foreign investment differs across countries, this can explain the difficulties in identifying causal relationships between, for instance, democracy and other economic variables (See Acemoglu et. al. 2006).

In other cases, foreign intervention takes the form of debt relief or new external funding. We consider this case by investigating the effect on political transitions of a "golden hallo scheme" to a new regime. IMF agreements may be considered as an example of this. We have identified 42 cases between 1956 (Chile and Bolivia) and 1990 (Jordan) in which the government of a new political regime, surprisingly in most cases a new autocracy, has signed an agreement with the IMF within the first year of its establishment. We show that a golden hallo tend to destabilize democracies but be to the benefit of foreign investors because the investment environment becomes friendlier. We can also show how a golden hello may induce democratization: if the golden hallo to a new democracy is sufficiently large, the elite might extend the franchise and create a democracy in order to share in external transfer.

The rest of this paper is set out as follows. Section 2 develops the basic model. Section 3 studies political transitions in the absence of foreign intervention in societies that are initially autocratic. Foreign interventions are introduced in section 3.1 as a continuous intervention. The possibility of a golden hallo is introduced in Section 3.2. Section 4. concludes.

2 The Model

We consider a world with two economies: a domestic and a foreign economy. The foreign economy is populated with investors, who can invest in the domestic economy or at the world market, and is governed by a foreign government which may attempt to influence the choice of political regime in the domestic economy. The domestic economy is small relative to the world economy and is populated by two types of agents: capitalists (the elite) and workers. The political regime (S_t^P) can be either democratic ($\mathcal{D}$), autocratic ($\mathcal{A}$) or socialistic ($\mathcal{S}$), i.e., $S_t^P \in \{\mathcal{D}, \mathcal{A}, \mathcal{S}\}$. In a democracy, the tax structure is decided by the median voter, who is a worker; in an autocracy, the elite decides the tax structure; and in a socialistic society, capital (including foreign investments) is nationalized and output is evenly distributed among workers. Transition between the three types of regimes can happen through coups against democracy; through a revolution that overturns an autocracy or through orderly democratization. We assume that the opportunities for coups and revolutions depend on the social state (S_t^s). When the social state is G conditions for social unrest in the form of either coups or revolutions are favorable, but when the social state is B, coups or revolutions are impossible. The probability that the social state is G is s and so, the probability that the social state is B is $1-s$.[1]

2.1 The Economic Structure

The domestic economy has infinite time horizon with $t = 0, 1, 2, ...$ There is a continuum of individuals with measure 1. A proportion L are workers and the rest K are capitalists. Each worker is endowed with one unit of labour each period, so the total supply of labour is L. The elite owns the production technology and shares the profits (Π) generated by production equally, i.e., each capitalist gets income $\frac{\Pi}{K}$ each period. We assume that $L \geq \frac{1}{2}$ so that the majority of the population are workers. We use the subscript W and C respectively to denote workers and capitalists. Utility is linear in income, net of taxes, and is discounted with the discount factor β.

Per-period aggregate output is produced from labour and foreign investments, K_f, using the production technology

$$Y = A\left(L - \frac{1}{2}L^2 + K_f - \frac{1}{2}K_f^2 + \gamma K_f L\right), \tag{1}$$

where $A > 0$ is a measure of aggregate productivity.[2] The parameter $\gamma \in (-1, 1)$ captures the degree of complementarity between domestic labour and foreign investments (FDI): if $\gamma > 0$, the two factors of production are complements, if $\gamma < 0$, the two factors are substitutes. This production technology exhibits decreasing returns to scale. We can think of the profits as the return to a fixed and immobile stock of capital such as land or to entrepreneurial talent (initially) owned by the elite. Output is sold at the world market at the fixed price $P = 1$. Labour and foreign investments are traded in competitive markets and aggregate factor demands are given by

$$\begin{aligned} \omega &= A(1 - L + \gamma K_f); \quad (2) \\ r_f &= A(1 - K_f + \gamma L), \quad (3) \end{aligned}$$

[1] We assume that the conditions for social unrest are independent of economic conditions. This is, of course, a simplification as social unrest is more likely during times of recession than in booms. It would be straight forward to capture this by making s an inverse function of economic conditions.

[2] We can interpret the production function as a linear-quadratic approximation to a more general production function.

where ω is the real wage and r_f is the real return to foreign capital invested in the domestic economy. Labour is in fixed supply so equilibrium employment is L. FDI are footloose and the supply is determined by the following arbitrage condition $r^* = r_f - \tau_f$. The parameter $r^* = r^{**} + \theta$ is the sum of the risk premium θ and the (exogenous) world interest rate (r^{**}) and $\tau_f \geq 0$ is a unit tax on FDI. The equilibrium inflow of foreign investments is, therefore, given by

$$K_f(\tau_f) = z_0 - \frac{\tau_f}{A}, \tag{4}$$

where $z_0 = 1 - \frac{r^*}{A} + \gamma L$.

The tax structure consists of three different taxes $\tau = (\tau_L, \tau_\pi, \tau_f)$ where τ_L is a tax on labour income, τ_π is a tax on profit income, and τ_f is the tax on FDI. Taxation is associated with deadweight costs. For simplicity, we assume that the deadweight cost functions associated with the labour and profit tax take the following forms:

It is possible up to a point (defined by $\overline{\tau}_L$ and $\overline{\tau}_\pi$) to tax labour and profit income without causing significant deadweight costs, but after that is becomes prohibitively expensive to do so.[3] Total tax revenues, $T = L\tau_L + K\tau_\pi + K_f\tau_f$, are recycled lump sum to all citizens and we assume that revenues cannot be targeted at specific groups. For a given tax structure, we can write the per-period utility of a representative capitalist as

$$v_C(\tau) = \frac{\Pi}{K} - \tau_\pi + T - C_L(\tau_L) - C_\pi(\tau_\pi). \tag{5}$$

where $\Pi = A\left(\frac{1}{2}L^2 + \frac{1}{2}K_f(\tau_f)^2 - \gamma K_f(\tau_f)L\right)$ is aggregate profit. Per-period utility of a representative worker is

$$v_W(\tau) = A(1 - L + \gamma K_f(\tau_f)) - \tau_L + T - C_L(\tau_L) - C_\pi(\tau_\pi). \tag{6}$$

In an autocracy, the elite sets the tax structure, but workers might attempt a revolution. A successful revolution leads to nationalization of all domestic assets (we assume that foreign investors can withdraw their capital before a revolution; see the time line below) and each worker's payoff after a revolution is

$$v_W(\mathcal{S}) = \frac{\Pi}{L} + \omega = A\left(1 - \frac{1}{2}L\right), \tag{7}$$

while a capitalist's payoff is zero. During the period of a revolution, however, some output, μ, is lost. How much depends on the social state. If $S_t^s = B$, the $\mu = \infty$ and workers will never attempt a revolution. If, on the other hand, $S_t^s = G$, then $\mu < \infty$ and workers might be willing to pay the price of a revolution.[4] A successful revolution leads to socialism and we follow Acemoglu and Robinson (2001) and assume that socialism is an absorbing state,

[3]This specification is chosen to simplify the analysis. Alternative, specifications would yield similar results, but make it harder to solve the relevant optimal taxation problems. What is important is that the deadweight cost functions are convex.

[4]As pointed out the Acemoglu and Robinson (2001), there is no free rider problem associated with revolution. A revolution yields private benefits to each worker and taking part in it does not involve any private costs. A similar argument applies to coups.

i.e., if the domestic economy transits to socialism, it stays there for ever after. The lifetime utility of workers following a revolution, therefore, is

$$V_W(\mathcal{S}) = \frac{v_W(\mathcal{S})}{1-\beta} - \mu. \tag{8}$$

The elite has a strong incentive to avoid a revolution and a transition to socialism since they lose everything. They can attempt to prevent a revolution by either giving tax concessions in such a way that workers prefer not to revolt or by extending the voting franchise to them. The latter option leads to a transition to democracy where the median voter is a worker.

In a democracy, the tax structure is decided by the median voter and the elite has no special influence on policy outcomes, except that it may attempt a coup. A successful coup leads to autocracy and puts the elite back in power. A coup is, however, costly because of the turmoil and a portion, f, of the each capitalists' income is lost during the period of the coup. How much is lost, however, depends on the social state. If $S_t^s = B$, then $f = \infty$ and capitalists never attempt a coup. If, on the other hand, $S_t^s = G$, then $f < \infty$ and capitalists might be willing to pay the price of a coup.

The timing of events within each period is as follows:

1. The social state $S_t^s \in \{G, B\}$ is revealed.
2. The foreign government may make an intervention (see below).
3. If a revolution has happened in the past, then the political regime is socialism and the period ends. If $S_t^P = \mathcal{D}$, workers propose a tax structure and if $S_t^P = \mathcal{A}$, the elite proposes a tax structure.
4. If $S_t^P = \mathcal{A}$, the elite may democratize. If $S_t^P = \mathcal{D}$, the elite may initiate a coup that leads to autocracy. If a political transition takes place the group that comes to power proposes a new tax structure.
5. If $S_t^P = \mathcal{A}$, workers can initiate a revolution which lead to socialism. If no revolution takes place, the tax structure from 3 or 4 is implemented.
6. Foreign investments are made, consumption takes place and the period ends.

This timing of events has two important implications. First, foreign investments are made *after* the type of the current political regime has become known and the associated tax structure is decided. This implies that foreign investors can react to political transitions by withholding investments and that domestic political decisions (both about the tax structure and about political transitions) are constrained by the response of foreign investors.[5] Second, the foreign government can intervene in the domestic economy *before*

[5] An alternative assumption is that investments are made before the tax structure and political regime is decided. In this case, FDI are sunk when tax decisions are made and a capital levy problem arises. Outcomes then depends critically on the credibility with which policy makers under different political regimes can commitments to tax rates. See Aidt and Magris (2005) or Persson and Tabellini (1994) for reasons why democracies might be better at making commitments than autocracies.

regime transition decisions are made with a view to avoid or encourage such transitions. We return to this aspect of the model in Section 3.1 and Section **??**. Finally, note that coups are only possible in a democracy regime and revolutions are only possible in an autocratic regime. This rules out that a coup and a revolution can happen within the same period.[6]

We shall treat the members of the elite as one player and the workers as another player of a dynamic game. We restrict attention of pure strategy Markov perfect equilibria, i.e., equilibria where the strategies of the two players only depend on the current state of the world (and prior actions taken within that period). The formal definitions of strategies and of the equilibrium are similar to those given in Acemoglu and Robinson (2001, p. 942-43). Briefly, the state of the domestic economy is either $\left(S^S, \mathcal{A}\right)$, $(S^S, \mathcal{D})$ or $\mathcal{S}$ where $S^S \in \{G, B\}$. The strategy of the elite is a function of the state and the tax decision by workers when the state is $(S^S, \mathcal{D})$ and a function only of the state when the state is $(S^S, \mathcal{A})$. The strategy determines the optimal action of the elite in each state. In state $(S^S, \mathcal{D})$ the action space of the elite is to mount a coup or not and if a coup is mounted, a to decide a tax structure. In state $(S^S, \mathcal{A})$, the action space of the elite consists of a decision to democratize or not and if democratization is not taking place, a decision on the tax structure. Since state $\mathcal{S}$ is absorbing, we need not specify the strategy of the elite in this state. The strategy of workers depends the state, the elite's decision to introduce universal suffrage and on the elite's proposed tax structure when the state is $(S^S, \mathcal{A})$. When the state is $(S^S, \mathcal{D})$ the strategy is simply a function of the state. The strategy determine the appropriate actions of the workers. In state $(S^S, \mathcal{A})$, their action space is a decision to mount a revolution or not, while in $(S^S, \mathcal{D})$, the only action workers need to make is on the tax structure. A pure strategy equilibrium can then be defined as a set of strategies for workers and the elite that are best responses to each other for all possible states.

We need to impose restrictions on the parameter space of the model to insure that $K_f \geq 0$ and $\tau_f \geq 0$ in all political regimes. To this end, we make the following (sufficient) assumption.

Assumption 1 $A > \max\{A_1, A_2\}$ *and* $\gamma > \frac{1}{K-2}$ *where* $A_1 = \frac{r^*}{1-\gamma K}$ *and* $A_2 = \frac{r^*}{1+2\gamma-\gamma K}$.

3 Transitions From Autocracy

In this section, we assume that the domestic economy is initially an autocracy. This assumption seems reasonable when considering long-run institutional development, as the typical society was governed by some form of autocracy in the past. We do, however, consider the alternative assumption – that the domestic economy is initially a democracy – in Section **??** where we consider if it is ever optimal for the foreign government to finance a coup.

We begin the analysis by deriving the optimal tax structure in a fully consolidated autocracy and democracy, respectively. By fully consolidated, we mean that the political

[6]Revolution against a democratic regime is an interesting possibility that we do not consider here due to the space constraint. The model can, however, easily be extended to accommodate this possibility.

regime is never under threat of a revolution or a coup: the group in power can each period and irrespective of the social state implement the tax structure that maximizes its per-period payoff. The first lemma characterizes these tax structures.

Lemma 2 *Let $\tau = (\tau_L, \tau_\pi, \tau_f)$ be an arbitrary (feasible) tax structure.*

Proof. See appendix ■

Under democracy, labour income is not taxed, but capital income and foreign investments are taxed fully. Under autocracy, the opposite is true: labour income is taxed fully, while profits and foreign investments are not taxed. We say that the tax structure under democracy is progressive and FDI-unfriendly, while under autocracy, it is regressive and FDI-friendly. More generally, we use the term "FDI-unfriendly" to refer to any situation where FDI are being taxed. The different attitude to taxation of foreign investments under the two regimes is easiest to grasp by assuming that $\gamma = 0$. In this case, the wage rate is independent of foreign investments and workers want to tax FDI to maximize revenues. Profits, on the other hand, are busted by FDI and for capitalists, this concern dominates the desire to raise extra revenue and they set $\tau_f = 0$.

To identify equilibrium configurations, it is useful to derive the coup and revolution constraint. We start with the coup constraint that determines if it is optimal for the elite to mount a coup or not. First, suppose that the current political state is democracy. If the social state is B, the elite will never mount a coup and workers can without any risk implement $\tau^{\mathcal{D}}$. However, if the social state is G, the elite may, depending on the cost of a coup f, attempt to overthrow the democracy and reintroduce autocracy. To avoid this, workers can adjust the tax structure to make the elite indifferent between a coup and democracy. Let $v_C\left(\tau, S^P\right)$ be the per-period payoff of a capitalist in political regime S^P if the tax structure is τ. The payoff to the elite if they undertake a coup is $v_C(\tau^{\mathcal{A}}, \mathcal{A}) - f + \beta W_C(\mathcal{A})$ while the payoff if they do not initiate a coup is $v_C\left(\tau, \mathcal{D}\right) + \beta W_C(\mathcal{D})$ where $W_C(S^p)$ is the continuation payoff for a capitalist starting from political state S^P before the social state is known. The elite will therefore initiate a coup if

$$v_C(\tau^{\mathcal{A}}, \mathcal{A}) - f + \beta W_C(\mathcal{A}) \geq v_C\left(\tau, \mathcal{D}\right) + \beta W_C(\mathcal{D}). \qquad (9)$$

This is the coup constraint: the capitalists will not attempt a coup if the payoff under autocracy after the coup is less that the payoff under democracy. To calculate the continuation payoff $W_C(\mathcal{A})$, we need to know what the elite will do in state $(G, \mathcal{A})$ to avoid a revolution. Since the current political state, by assumption, is democracy, and the initial political state was autocracy, it must be true that last time the state was $(G, \mathcal{A})$, the elite democratized and that was sufficient to head off a revolution.[7] Thus, along the equilibrium path, they will do so again the next time the state is $(G, \mathcal{A})$. In Appendix, we show that the coup constraint can be written as

$$v_C\left(\tau, \mathcal{D}\right) \leq \frac{v_C(\tau^{\mathcal{A}}, \mathcal{A}) - \left(1 - 2s\right)\beta v_C(\tau^{\mathcal{D}}, \mathcal{D}) - \left(1 - \left(1 - s\right)\beta\right) f}{1 - \left(1 - 2s\right)\beta} \equiv O(f). \qquad (10)$$

[7] We return to this issue below.

We can use the coup constraint to define two important cut-off values of the cost of a coup f. The first cut-off determines if workers need to make concessions or not to avoid a coup. Evaluating equation (10) at the tax structure most-preferred by workers, $\tau = \tau^{\mathcal{D}} = \left(0, \overline{\tau}_{\pi}, \tau_f^{\mathcal{D}}\right)$, we get

$$f_1 \equiv \frac{v_C(\tau^{\mathcal{A}}, \mathcal{A}) - v_C(\tau^{\mathcal{D}}, \mathcal{D})}{1 - (1-s)\,\beta}. \tag{11}$$

The cut-off f_1 has a natural interpretation. If workers do not give any concessions, the per-period difference between democracy and autocracy is $v_C(\tau^{\mathcal{A}}, \mathcal{A}) - v_C(\tau^{\mathcal{D}}, \mathcal{D})$. Since the elite anticipates that it has to grant voting rights to workers to avoid a revolution every time the state is $(G, \mathcal{A})$, it discounts this gain with the probability that the social state is B. Given that democratic rights were granted in the past, f_1 is the maximum the elite would ever want to pay to change the regime. Accordingly, if $f \geq f_1$, the coup constraint is irrelevant in the sense that even if workers make no concessions at all, a coup it not worthwhile. If, on the other hand, $f < f_1$, workers need to make concessions to avoid a coup.

The second cut-off determines if a coup can be avoided or not. It can be found by evaluating equation (10) at the tax structure most preferred by capitalists, $\tau^{\mathcal{A}} = (\overline{\tau}_L, 0, 0)$:

$$f_2 \equiv (1-2s)\,\beta f_1. \tag{12}$$

So for $f < f_2$, a coup cannot be prevented, but for $f \in [f_2, f_1]$ concessions are sufficient to make the elite indifferent between a coup and democracy. Again, the cut-off f_2 has a natural interpretation. Notice that $(1-2s)$ is the difference between the probability that the social state is B and G and recall that workers cannot commit to give concessions when the social state is B. Accordingly, if conditions are typically favorable for coups (s is larger), workers' promise to give concessions in the future becomes more credible and it is easier for them to head off the coup. In fact, for $s > \frac{1}{2}$, workers can avoid a coup for all $f \geq 0$.

The next lemma characterizes how workers optimally give concessions.

Lemma 3 *(Optimal tax concessions under democracy) Suppose that the political state is $\mathcal{D}$. Let $\tau' = (0, \overline{\tau}_{\pi}, 0)$ and define*

$$f_3 = \frac{\beta\,(1-2s)\left[v_C(\tau', \mathcal{D}) - v_C(\tau^{\mathcal{D}}, \mathcal{D})\right]}{1-(1-s)\beta} + \frac{v_C(\tau^{\mathcal{A}}, \mathcal{A}) - v_C(\tau', \mathcal{D})}{1-(1-s)\,\beta} \tag{13}$$

where $f_1 > f_3 > f_2$. To avoid a coup, workers adjust the tax structure as follows:

1. For $f \geq f_1$, the coup constraint is not binding and workers set $\tau = \tau^{\mathcal{D}} = \left(0, \overline{\tau}_{\pi}, \tau_f^{\mathcal{D}}\right)$ and the tax structure remain progressive and FDI-unfriendly.

2. For $f \in [f_3, f_1]$, the coup constraint is binding. Workers give concessions by reducing the tax on FDI to

$$\tau_f = \frac{(1-K)\,(z_0 - \gamma)\,A}{1-2K} - \frac{1}{1-2K}\sqrt{M} \tag{14}$$

where

$$M = 2KA(1-2K)O(f) + 2KA(1-2K)(1-K)\overline{\tau}_\pi + z_0 2\gamma K A^2 (K-1) + A^2K^2z_0^2 + A^2(K-1)^2\left(2K+\gamma^2-1\right). \tag{15}$$

while keeping the tax structure progressive: $\tau_L = 0$ and $\tau_\pi = \overline{\tau}_\pi$.

3. For $f \in [f_2, f_3]$, the coup constraint is binding and workers give concessions by reducing the tax on FDI to zero. The domestic tax structure becomes more regressive as workers increase the tax on labour, reduce the tax on profits or implement a combination of the two where

$$(\tau_L - \tau_\pi) = \frac{1}{1-K}\left(O(f) - \frac{A}{K}\left(\frac{1}{2}z_0^2 - \gamma z_0(1-K) + \frac{1}{2}(1-K)^2\right)\right). \tag{16}$$

4. For $f < f_2$, a coup cannot be avoided.

Proof. See Appendix ■

The Lemma shows that workers only need to give concessions when the cost of a coup is sufficiently low ($f < f_1$). The optimal concessions involve, first, a reduction in the tax on FDI. This is because this tax is distortionary and the "cheapest" way to please the elite (who would like the tax on FDI reduced to zero) is to be friendly to foreign investors. Eventually, when the cost of a coup falls below f_3, being FDI-friendly is not enough and workers need to adjust the domestic tax structure making it more regressive, either by increasing the tax on labour or reducing the tax on profits or a combination of the two.

Second, to derive the revolution constraint, suppose that the domestic economy is autocratic and let $v_W\left(\tau, S^P\right)$ be the per-period utility of workers when the political regime is S^P and the tax rate is τ. Workers never attempt a revolution when the social state is B. On the other hand, if they initiate a revolution when the social state is G and a transition to socialism takes place, they get

$$V_W(\mathcal{S}, G) = \frac{v_W(\mathcal{S})}{1-\beta} - \mu. \tag{17}$$

In principle, the elite can preempt a revolution either by offering concessions or by democratization. To insure that democratization can, in fact, achieve this objective, it must be sufficiently costly to initiate a revolution. Specifically, we make the following assumption.

Assumption 4 *Assume that*

$$\mu \geq \frac{v_W(\mathcal{S})}{1-\beta} - \frac{v_W(\tau^{\mathcal{D}}, \mathcal{D})}{1-\beta} - \frac{\beta s\left(v_W(\tau^{\mathcal{A}}, \mathcal{A}) - v_W(\tau^{\mathcal{D}}, \mathcal{D})\right)}{(1-\beta(1-2s))(1-\beta)} \equiv \underline{\mu}. \tag{18}$$

This right hand side of this condition is the difference between the present value of revolution and the present value of unstable democracy where democracy is granted by the elite every time the social state is G but the democracy is overthrown by a coup at the next opportunity. Since consolidated democracy and democracy secured by giving tax concessions are better for workers than unstable democracy, this is a sufficient condition that democratization can preempt revolution.[8]

Now, suppose that the elite uses concessions to prevent a revolution. Clearly, these are only given when $S_t^S = G$. This explains why the elite always prefers to give tax concessions to democratization if that is sufficient to avoid a revolution. The continuation value for a worker starting in state $(G, \mathcal{A})$ is $v_W(\tau, \mathcal{A}) + \beta W_W(\mathcal{A})$ where $W_W(\mathcal{A})$ is the expected present value for a worker under autocracy evaluated before the social state is known and τ is the tax structure offered by the elite. We can then write the revolution constraint as follows

$$\frac{v_W(\mathcal{S})}{1-\beta} - \mu \geq v_W(\tau, \mathcal{A}) + \beta W_W(\mathcal{A}). \tag{19}$$

The constraint simply says that a revolution is only worthwhile if the present value of socialism, inclusive of the cost of revolution, is larger than the continuation payoff under autocracy when tax concessions are granted each time the social state is G, but not otherwise. In Appendix, we show that the revolution constraint can be written as

$$v_W(\tau, \mathcal{A}) \geq \frac{\mu(1-\beta) + (1-s)\beta v_W(\tau^{\mathcal{A}}, \mathcal{A}) - v_W(\mathcal{S})}{(1-(1-s)\beta)} \equiv Q(\mu). \tag{20}$$

We can use equation (20) to define two important cut-off values for μ. The first cut-off determines if the elite is forced to democratize to head off the revolution and is found by letting the elite offer the maximum tax concession ($\tau = \tau^{\mathcal{D}}$). This defines

Then, for $\mu < \mu_1$, tax concessions cannot avoid a revolution and democratization is the only alternative open to the elite. For $\mu \geq \mu_1$, tax concessions can prevent a revolution. The second cut-off determines if tax concessions are needed or not. It is found by evaluating the revolution constraint at $\tau = \tau^{\mathcal{A}}$ and is given by

$$\mu_2 = \frac{v_W(\mathcal{S})}{1-\beta} - \frac{v_W(\tau^{\mathcal{A}}, \mathcal{A})}{1-\beta} > \mu_1. \tag{21}$$

For $\mu > \mu^2$, the revolution constraint is not binding. In the interval $\mu \in [\mu_1, \mu_2]$, tax concessions are sufficient to avoid a revolution. The next lemma shows how this is achieved.

Lemma 5 *(Optimal tax concessions under autocracy) Suppose that the political state is $\mathcal{A}$. Let $\tau' = (0, \overline{\tau}_\pi, 0)$ and define*

$$\mu_3 = \frac{(1-s)\beta\left(v_W(\tau', \mathcal{A}) - v_W(\mathcal{A})\right)}{1-\beta} - \frac{v_W(\tau', \mathcal{A}) - v_W(\mathcal{S})}{1-\beta} \tag{22}$$

where $\mu_2 > \mu_3 > \mu_1$. To avoid a revolution, the elite adjusts the tax structure as follows:

1. *For $\mu > \mu_2$, the revolution constraint is not binding and the elite sets $\tau^{\mathcal{A}} = (\overline{\tau}_L, 0, 0)$. The tax structure is FDI-friendly and regressive.*

[8] A proof of this is given in Appendix.

2. *For $\mu \in [\mu_3, \mu_2]$, the revolution constraint is binding and the elite sets $\tau_f = 0$ and uses a combination of (low) labour and (high) capital taxes to prevent a revolution where*

$$\tau_\pi - \tau_L = Q(\mu) - A(K + \gamma z_0). \tag{23}$$

   The tax structure is progressive, but remains FDI-friendly.

3. *For $\mu \in [\mu_1, \mu_3]$, the revolution constraint is binding and the elite sets*

$$\tau_f = \frac{1}{2}A(z_0 - \gamma) - \frac{1}{2}\sqrt{4A\left(A(K + \gamma z_0) + K\overline{\tau}_\pi - Q(\mu) + A^2\left(z_0 - \gamma\right)^2\right.} \tag{24}$$

   and $\tau_L = 0$ and $\tau_\pi = \overline{\tau}_\pi$. The tax structure is FDI-unfriendly and progressive.

4. *For $\mu < \mu_1$, a revolution cannot be avoid with tax concessions and the elite must democratize.*

Proof. See Appendix ■

The lemma shows that the elite offers tax concessions when the cost of a revolution fall below μ_2. At first, the elite pleases workers by making the domestic tax structure more progressive. This is done by reducing the tax on labour, increasing the tax on profits or both. Once the cost of revolution falls below μ_3, however, not even the most progressive tax structure is enough, and the elite must introduce distortionary taxes on foreign investments to raise revenue with which to please workers: the autocracy becomes FDI-unfriendly. For very low values of μ ($\mu < \mu_1$), not even $\tau^{\mathcal{D}}$ is sufficient to prevent a revolution and the elite has no choice but to give workers voting rights.

Before we combine the coup and revolution constraint to characterize equilibrium outcomes, it is useful to introduce some terminology. We say that a democracy is unstable if it is overturned by a coup each time the social state is G. We say that a political regime is semi-consolidated if those in power (either workers or the elite) by giving appropriate tax concessions can preempt coups or revolutions. Finally, we say that a regime is fully consolidated if those in power can implement their most-preferred tax policy without ever risking a coup or a revolution. The first proposition characterizes four types of democracy.

Proposition 6 *(Democracy) Let assumption 4 be satisfied and let $\mu \leq \mu_1$. Suppose that the domestic economy starts as an autocracy.*

1. If $f \leq f_2$, then domestic economy becomes an unstable democracy that switches regime each time the social state is G. The tax structure oscillates between being FDI-friendly and -unfriendly.

2. If $f \in (f_2, f_3]$, the domestic economy becomes a semi-consolidated democracy the first time the state is $(G, \mathcal{A})$. The tax structure is regressive, but FDI-friendly.

3. If $f \in (f_3, f_1]$, the domestic economy becomes a semi-consolidated democracy the first time the state is $(G, \mathcal{A})$. The tax structure is progressive, but FDI-unfriendly.

4. If $f > f_1$, the domestic economy becomes a consolidated democracy the first time the state is $(G, \mathcal{A})$. The tax structure is $\tau^{\mathcal{D}}$, i.e., FDI-unfriendly and progressive.

Proof. See Appendix ■

Democratization is triggered when the threat of revolution is sufficient serious ($\mu \leq \mu_1$) and the elite in order to avoid a revolution has no choice but to grant universal suffrage. Whether democracy becomes consolidated or not, however, depends on the cost of a coup f and the Proposition makes a distinction between *four different types of democracy*, as illustrated in Figure 1. Firstly, when coups are cheap ($f \leq f_2$), the elite democratizes each time conditions for social unrest are favorable, but reverses the decision by mounting a coup as soon as the opportunity presents itself. This leads to unstable democracy and oscillation between autocracy and democracy. The resulting tax structure is also highly unstable, and, as a consequences, the domestic economy experiences large swings in the flow of FDI: FDI is floating in under autocracy to take advantage of the zero tax on foreign investments, but retreats under democracy to avoid being taxed at the rate $\tau_f^{\mathcal{D}}$. Second, when coups are very expensive ($f > f_1$), coups are not optimal for the elite, not even when conditions for social unrest are favorable. Accordingly, once universal suffrage is granted, a consolidated democracy that is not threatened by coups is established. The median voter can implement his most-preferred tax structures, which is progressive and FDI-unfriendly (see Lemma 2). Thirdly, for intermediate values of f, a semi-consolidated emerges and workers need to adjust the tax structure to preempt coups. This gives rise to two distinct types of democracy: FDI-friendly and FDI-unfriendly democracy. When the threat of a coup is relatively low ($f \in (f_3, f_1]$), workers can get away with a reduction in the tax on foreign investments (below $\tau_f^{\mathcal{D}}$) and need not adjust the domestic tax structure (τ_L and τ_π) to avoid a coup. Thus, this regime continues to be FDI-unfriendly. However, as the threat of a coup increases, workers must give more and more tax concessions and eventually (when $f \in (f_2, f_3]$) they have to stop taxing foreign investments and start taxing labour income and/or reducing the tax on profits: the threat of a coup forces democracies to become FDI-friendly.

Given that a transition to democracy is unavoidable (as we maintain the assumption that $\mu < \mu_1$), we can draw a number of conclusions from Proposition 6 regarding the type of democracy that will eventually emerge.[9] We focus on the empirically relevant case where $s \leq \frac{1}{2}$, so that conditions for social unrest are rarely favorable. First, recall that r^* is the sum of the world market interest rate, r^{**}, and the risk premium, θ. An increase in the risk premium (or in the world market interest rate) leads to capital flight. This reduces profits irrespective of the political regime. However, under democracy the median voter reacts to capital flight by reducing the tax on foreign investments and, relatively speaking, the welfare of the elite falls less under democracy. As a consequence, capital flight helps consolidate democracy ($\frac{\partial f_i}{\partial r^*} < 0$). Second, economic crisis, represented by a fall in A, also helps consolidate democracy ($\frac{\partial f_i}{\partial A} > 0$). Again, this is because the median voter during an economic crisis attempts to tease in more foreign investments by taxing FDI more leniently. This reduces the incentive of the elite to instigate a coup and semi- or

[9]The derivation of the comparative statics can be found in Appendix.

fully consolidated democracy more likely. Conversely, economic growth (represented by a sustained increases in A) tends to destabilize democracy. Thirdly, since K is the fraction of the population with access to the means of production, we can interpret a society with a higher K as a more equal society. The comparative statics with respect to K depends on the degree of complementarity between labour and foreign investments. In the special case with $\gamma = 0$, inequality tends to destabilize democracy. The reason is that rights to profit income are more concentrated and that enhance the elite's incentive to instigate a coup ($\frac{\partial f_i}{\partial K} < 0$).

The second proposition identifies three types of autocracy and defines the boundary between democracy and autocracy.

Proposition 7 *(Autocracy) Let assumption 4 be satisfied. Suppose that the domestic economy is initially an autocracy. For $\mu \geq \mu_1$, the domestic economy remains an autocracy. Moreover,*

1. *If $\mu \in (\mu_1, \mu_3]$, then the tax structure of the semi-consolidated autocracy is FDI-unfriendly and progressive.*

2. *If $\mu \in (\mu_3, \mu_2]$, then the tax structure of the semi-consolidated autocracy is FDI-friendly and progressive.*

3. *If $\mu > \mu_2$, then the tax structure of the fully consolidated autocracy is $\tau^{\mathcal{A}}$, i.e., FDI-unfriendly and regressive.*

Proof. See Appendix ■

Without a sufficiently strong threat of a revolution ($\mu \geq \mu_1$), the domestic economy remains an autocracy. This, however, does not imply that the threat of a revolution is irrelevant: whether the autocracy is consolidated or not depends on μ. Proposition 7 makes a distinction between three types of autocracy, as illustrated in Figure 1. Firstly, when the cost of a revolution is extremely high ($\mu > \mu_2$), autocracy is fully consolidated. The elite needs not make any concessions and it implements its most-preferred FDI-friendly tax policy (see Lemma 2). Secondly, for $\mu \leq \mu_2$, the elite must give concessions to avoid a revolution. As long as the threat level is relatively low ($\mu \in (\mu_3, \mu_2]$), the elite prefers to cater for foreign investors leaving $\tau_f = 0$ but making the domestic tax structure more progressive to head off a revolution. However, as the threat level increases ($\mu \in (\mu_1, \mu_3]$), the elite is eventually forced to start taxing foreign investments: an autocracy facing a real threat of revolution is FDI-unfriendly.

While Proposition 6 tells us about the type of democracy that will emerge given that a transition to democracy is inevitable, Proposition 7 tells us when a transition from autocracy to democracy happens. Under the assumption that the complementarity between foreign capital and domestic labour is relatively weak ($\gamma \simeq 0$), we can draw a number of unambiguous conclusions. First, an increase in the risk premium (or in the world market interest rate) causes capital flight and an important component of the tax base disappears.

This makes it more difficult for the elite to give tax concessions and a transition to democracy becomes more likely ($\frac{\partial \mu_1}{\partial r^*}\big|_{\gamma=0} > 0$). Thus, *capital flight can cause democratization.* Second, the impact of the business cycle (represented by fluctuations in A) on democratic transitions is ambiguous. On the one hand, during a boom, the inflow of foreign investments is plentiful. This enlarges the tax base from which the elite can offer concessions and a transition to democracy becomes less likely. On the other hand, during a boom there is more output to be expropriated after a revolution. This makes workers more eager to revolt and it becomes harder for the elite to head of revolutions with tax concessions and, as a consequence, they must resort to universal suffrage more often. Third, more unequal societies are more likely experience a transition to democracy ($\frac{\partial \mu_1}{\partial K}\big|_{\gamma=0} < 0$). This is due to the fact that it is more expensive to give tax concessions to a large than to a small working class. This makes it harder to use concessions to prevent a revolution and democratization becomes more likely.

The model highlights the economic foundations of political transitions with a particular focus on the role of foreign investments. Although foreign investors cannot affect the regime choice directly, the fact that they can react to the regime choice through their investment decision expands the set of feasible political regimes and has important implications for the circumstances under which regime transitions take place. We can summarize the main insights as follows: an increase in the world market interest rate (or the country risk premium) tends to destabilize autocracies by causing capital flight and to consolidate democracies by forcing the median voter to adopt a more regressive tax structure and to tax FDI more leniently; economic recessions and crisis forces democracies to be FDI-friendly as workers adopt a counter-cyclical tax policy and reduce the tax on FDI during a slum; higher inequality facilitates transitions to democracy, but also tends to destabilize a democracy once the transition has taken place.

3.1 Foreign Intervention

Foreign investors can observe the political regime and the associated tax structure before they make their investments. As a consequence, they are, at equilibrium, indifferent between investing in the domestic economy and at the world market. However, foreign investments may serve a strategic purpose that puts a wedge between the private return and the return as perceived by the foreign government. This provides the foreign government with an incentive to protect its citizens' investments abroad. A leading example of this is investments in natural resources and agriculture. `[many more examples here]`

We introduce this strategic aspect into the model by assuming that the foreign government might subsidize coups or provide funding to suppress revolutions in order to maximize the net value of foreign investments:

$$v_f(\tau_f) = ((r_f - \tau_f) - r^* + \varepsilon)K_f(\tau_f). \tag{25}$$

The parameter $\varepsilon > 0$ captures the strategic interest of the foreign government and the larger is ε, the higher is its stake. The foreign government discounts the net value of foreign investments with the discount factor β and makes the intervention decision after the social state is observed, but before any regime transition takes place (see the time line). This implies that the foreign government can intervene to change or consolidate a political regime. It is clear that the foreign government ideally wants the the tax on FDI to be zero. Accordingly, it would never intervene in favor of a regime that opts to tax foreign investments and foreign interventions take the form of a transfer to the elite. The transfer can either be a subsidy to coups (which reduces f) or funds that help the elite prevent a revolution by increasing μ.

In order to emphasize the scope of foreign intervention, we assume that the society would become a consolidated democracy in absence of any foreign intervention (i.e. $\mu < \mu_1$ and $f > f_1$). Therefore, if the foreign government decides not to intervene its discounted payoff is (see Appendix for details)

$$W_f(a) = [(\frac{s}{1-\beta})v_f(\tau_f^{\mathcal{D}}) + (1-s)v_f(0)]\frac{1}{1-(1-s)\beta}, \tag{26}$$

where a denotes the strategy of not intervening. The foreign government would ideally want the tax on foreign investments to be zero and thus to avoid a transition to consolidated democracy. It can achieve this in two ways. Firstly, it can allow the transition to democracy, but then subsidize the elite such that the coup threat become sufficiently salient that workers reduce the tax on foreign capital to zero to preempt the coup (when $S_t^S = G$). The cost of this strategy, which we denote strategy b, is $f - f_3$ and has to be paid each time conditions for a coup are favorable. Secondly, the foreign government can prevent the transition to democracy by helping the elite combat the threat of revolution. The cost of this strategy, which we denote strategy c, is $\mu_3 - \mu$ and has to be paid each time the social state is G.

Whether the foreign government wants to intervene or not and if so, by which means, depends on the costs and benefits of each strategy. If the foreign government decides to use strategy b, democratization takes place the first time $S_t^S = G$ and in that period foreign investments are taxed at the rate $\tau^{\mathcal{D}}$. In subsequent periods, foreign investments are only taxed when the social state is B as the foreign government intervenes, by donating $f - f_3$ to the coup kitty, whenever the social state is G, thereby inducing a reduction in the tax rate to zero. The net benefit of strategy b is (see Appendix for details)

$$W_f(b) = \frac{v_f(0)[(1-\beta)(1-s)+s^2\beta] + v_f(\tau_f^d)(s - s^2\beta) - (f - f_3)s^2\beta}{(1-(1-s)\beta)(1-\beta)}. \tag{27}$$

If the foreign government instead selects strategy c, the domestic economy stays autocratic. To avoid democratization whenever the social state is favorable for revolution, the foreign government needs to fund counterrevolutionary activities that neutralize the threat of revolution sufficiently to allow the elite to keep the tax on foreign investments at zero. As a consequence, $\tau_f = 0$ at all times. The net value of strategy c is

$$W_f(c) = s(v(0) - (\mu_3 - \mu) + \beta W_f(c) + (1-s)\left(v(0) - \beta W_f(c)\right) \tag{28}$$

and we get

$$W_f(c) = \frac{v_f(0) - s(\mu_3 - \mu)}{1-\beta}. \tag{29}$$

The foreign government chooses the strategy with the highest payoff as characterized by the next proposition.

Proposition 8 *Assume that* $\varepsilon \geq \max\{\varepsilon_f, \varepsilon_\mu\}$, *where* $\varepsilon_f = \frac{(f_1 - f_3)A}{z_0 - \gamma}$ *and* $\varepsilon_\mu = \frac{(\mu_3 - \mu_1)(1-(1-s)\beta)A}{z_0 - \gamma}$.

1. *There exist* (μ, f) *such that for* $(\mu, f) \in [f_1, f(\varepsilon)] \times [\mu(\varepsilon), \mu_1]$, *the foreign government wants to intervene, where*

$$\begin{aligned} f(\varepsilon) &= f_3 + \frac{\varepsilon(z_0 - \gamma)}{A} > f_1; && (30)\\ \mu(\varepsilon) &= \mu_3 - \frac{\varepsilon(z_0-\gamma)}{A(1-(1-s)\beta)} < \mu_1. && (31)\end{aligned}$$

2. *Let*

$$f(\mu) = f_3 + \frac{(1-(1-s)\beta)}{s\beta}(\mu_3 - \mu) - \frac{\varepsilon(z_0-\gamma)}{A}\frac{1-s\beta}{s\beta} \tag{32}$$

and suppose that $(\mu, f) \in [f_1, f(\varepsilon)] \times [\mu(\varepsilon), \mu_1]$. *Then there exist* (μ, f) *such that for* $f \leq f(\mu)$, *the foreign government prefers to intervene to create a FDI-friendly democracy (strategy b) while for* $f > f(\mu)$, *the foreign government prefers to intervene to consolidate a FDI-friendly autocracy (strategy c).*

Proof. Part 1. Intervention is better than the status quo if

$$\begin{aligned} W_f(b) - W_f(a) &= \frac{s^2\beta}{(1-\beta)(1-(1-s)\beta)}\left(\frac{\varepsilon(z_0-\gamma)}{A} + (f_3 - f)\right) > 0; && (33)\\ W_f(c) - W_f(a) &= \frac{s}{(1-\beta)(1-(1-s)\beta)}\left(\frac{\varepsilon(z_0-\gamma)}{A} - (1-(1-s)\beta)(\mu_3-\mu)\right) > 0 && (34)\end{aligned}$$

This requires that

$$f \leq f_3 + \frac{\varepsilon(z_0-\gamma)}{A} \tag{35}$$

and

$$\mu \geq \mu_3 - \frac{\varepsilon(z_0-\gamma)}{A(1-(1-s)\beta)}, \tag{36}$$

respectively. To insure that $f_3 + \frac{\varepsilon(z_0-\gamma)}{A} > f_1$ and $\mu_3 - \frac{\varepsilon(z_0-\gamma)}{A(1-(1-s)\beta)} < \mu_1$, we need

$$\varepsilon \geq \max\{f_1 - f_3, (\mu_3 - \mu_1)(1-(1-s)\beta)\}\frac{A}{z_0-\gamma}. \tag{37}$$

For a given ε such that condition (37) is satisfied, we conclude that the foreign government wants to intervene for $(\mu, f) \in [f_1, f(\varepsilon)] \times [\mu(\varepsilon), \mu_1]$ where $\mu(\varepsilon)$ is the solution to $W_f(c) =$

$W_f(a)$ and $f(\varepsilon)$ is the solution to $W_f(b) = W_f(a)$. Part 2. The foreign government is indifferent between the two types of intervention when

$$f = f(\mu) \equiv f_3 + \frac{(1-(1-s)\beta)}{s\beta}(\mu_3 - \mu) - \frac{\varepsilon(z_0-\gamma)}{A}\frac{1-s\beta}{s\beta}. \tag{38}$$

We note that $f(\mu)$ is decreasing in μ and that $f(\mu(\varepsilon)) = f(\varepsilon) > f_1$. This implies that the function $f(\mu)$ divides the region $[f_1, f(\varepsilon)] \times [\mu(\varepsilon), \mu_1]$ into two halves ■

Part 1 of Proposition 8 shows that it is optimal for the foreign government to intervene whenever the strategic interest ε is large enough. Part 2 shows that it is optimal to consolidate autocracies and thus to prevent democratization when the cost of revolution is not too low. Conversely, the optimal intervention strategy is to allow democratization, but provide just enough resources for coups to force workers not to tax foreign capital when the cost of a coup is not too high. This is illustrated in Figure 2 where intervention is optimal for f and μ within the square $\alpha\beta\gamma\sigma$. This is intuitive as a relatively high μ makes it cheap to subsidize counter-revolutionary activities and a low f makes it cheap to subsidize coups and force the median voter under democracy to give FDI-friendly concessions.

A number of interesting implications follow from Proposition 8.[10] First, an increase in the risk premium (or in the world market interest rate) and the associated capital flight makes foreign intervention more likely, i.e., $\frac{\partial \varepsilon_f}{\partial r^*} < 0$ and $\frac{\partial \varepsilon_\mu}{\partial r^*} < 0$ and foreign intervention becomes worthwhile for a lower ε. The reason is that the foreign government wants to reverse the outflow of capital. It achieves this by inducing more lenient taxation of FDI through a change in the political regime. As the "intervention square" in Figure 2 shifts to southwest, an increase in the risk premium (or the world interest rate), ceteris paribus, shifts the foreign governments intervention preference towards a subsidy to the elite to help its counterrevolutionary efforts (strategy c). Second, foreign interventions are more likely in recessions than in booms ($\frac{\partial \varepsilon_f}{\partial A} > 0$ and $\frac{\partial \varepsilon_\mu}{\partial A} > 0$). In a recession, it is despite the downwards adjustment of the tax on foreign investments under democracy, less attractive to invest in the domestic economy. Thus, to encourage a more FDI-friendly environment, the foreign government is more like to intervene. Moreover, the favoured strategy during times of recession or economic crisis is to support counterrevolutionary efforts thereby preventing a transition to democracy. The opposite is true in a boom. Third, the foreign government is more likely to intervene in a society with an unequal distribution of the means of production ($\frac{\partial \varepsilon_f}{\partial K} < 0$ and $\frac{\partial \varepsilon_\mu}{\partial K} < 0$).[11] In an unequal society, the means of production are concentrated in the hands of a small elite and under consolidated democracy, it is optimal to tax FDI heavily. The resulting discouragement of foreign investors increases the foreign government's incentive to intervene.

Incorporating foreign intervention into the analysis sheds new light on the relationship between economic factors and transitions between and consolidation of political regimes. To see this, compare the results obtained with and without active foreign intervention. A larger risk premium (or world market interest rate), which has a pro-democracy effect

[10] See Appendix for derivation of the comparative statics.

[11] $\frac{\partial \varepsilon_f}{\partial K} < 0$ requires that $A > \frac{r^*}{1-\frac{2}{3}K^2\gamma}$.

without foreign intervention, reduces the prospect of consolidated democracy with foreign intervention. Second, an economic recession triggers active foreign intervention in support of autocracy regimes, while in the absence of foreign intervention, the impact of the business cycle on the transition to democracy is ambiguous. Lastly, higher inequality always destabilizes a democracy with foreign intervention while it encourages democratization without.

3.2 Golden Hallo

It is often the case that new regimes receive a transfer from abroad. This can be in the form of debt relief from international lenders, foreign aid or access to cheap credit `[more example on this]`. The transfers – a golden hallo – are typically motivated by a desire to stabilize and consolidate the new regime. However, this motivation ignores the dynamic implications and the net result might, in fact, be that a golden hallo has a destabilizing effect.

To analyze this, we introduce into the baseline model from section 2 the possibility that the new government after a transition to either democracy or autocracy (after a coup) receives a one-off gift or transfer from abroad.[12] We assume that the transfer is distributed equally across the population and denote the transfers by $\sigma_i \geq 0$ with $i \in \{\mathcal{A}, \mathcal{D}\}$. The presence of a golden hallo affects the coup and revolution constraints, but also introduces the possibility that the elite might want to democratize, not because of the threat of revolution but because of the golden hallo.

Suppose that $\sigma_i > 0$ and $\mu < \mu_1$ such that the elite in the absence of any golden hallo is forced to democratize to avoid a revolution. To see how the coup constraint, which controls what type of democracy is going to emerge, is affected by the presence of a golden hallo, we note that the elite will initiate a coup if and only if

$$v_C(\tau^{\mathcal{A}}, \mathcal{A}) - f + \sigma_{\mathcal{A}} + \beta W_C(\mathcal{A}) > v_C(\tau, \mathcal{D}) + \beta W_C(\mathcal{D}). \tag{39}$$

The golden hallo to a newly established autocracy reduces the cost of a coup. Moreover, the golden hallo to a newly established democracy increases the continuation value of autocracy $W_C(\mathcal{A})$ because the payoff associated with democratization when the social state is G is higher:

$$V_C(G, \mathcal{A}) = v_C(\tau^{\mathcal{D}}, \mathcal{D}) + \sigma_{\mathcal{D}} + \beta W_C(\mathcal{D}). \tag{40}$$

An implication, then, is that a golden hallo to a newly established democracy makes the elite more willing to democratize at the first opportunity after a coup. Going through the same steps as above, the coup constraint now reads

$$v_C(\tau, \mathcal{D}) \leq \frac{v_C(\tau^{\mathcal{A}}, \mathcal{A}) - (1-2s)\beta v_C(\tau^{\mathcal{D}}, \mathcal{D}) - (1-(1-s)\beta)(f - \sigma_{\mathcal{A}} - s\beta\sigma_{\mathcal{D}})}{1-(1-2s)\beta} \tag{41}$$

[12]Logically, there is a third possibility, namely that a socialistic regime (after a revolution) receives a transfer. Although this might have been important during the Cold War, we do not consider this in the present paper. We believe that the analysis of transitions to socialism is an important topic that deserves attention, but it goes beyond the scope of the present paper to provide a proper analysis.

and the three f-cutoffs become $\widehat{f}_j = f_j + \sigma_{\mathcal{A}} + s\beta\sigma_{\mathcal{D}}$ for $j = 1, 2, 3$. We see that the golden hallo both to a democracy and to an autocracy shifts the three cutoffs up. This has two implications for the type of democracy that is going to emerge. Firstly, unstable democracy becomes more likely. This is intuitive as a high frequency of regime change triggers frequent golden hallos. Secondly, consolidated democracy becomes less likely. This is because it is less costly to the elite to initiate coups and so, workers need to give concessions more often. This has the implication that the golden hallo might be to the benefit of foreign investors who, as a consequence, see the tax on their investments decline.

The golden hallo can lead to more regime instability not only when the revolution constraint is truly binding ($\mu < \mu_1$), but also when it is not binding ($\mu > \mu_2$) or can be relaxed through concessions ($\mu_1 < \mu < \mu_2$). Interestingly, in this case, the presence of the golden hallo introduces an new reason for democratization: the elite might hand over power to workers just to trigger the golden hallo. To see this, let us focus on the case where $\mu > \mu_2$ such that the elite in the absence of any golden hallo would not need to do anything to preserve autocracy because the threat of revolution is never real. The elite faces the choice between three options:

1. Never democratize: society continues to be autocratic and the elite gets $V_C(\mathcal{A}) = \frac{v_C(\tau^{\mathcal{A}},\mathcal{A})}{1-\beta}$.
2. Democratize: society becomes a consolidated democracy and the elite gets $V_C(\mathcal{D}) = \frac{v_C(\tau^{\mathcal{D}},\mathcal{D})}{1-\beta} + \sigma_{\mathcal{D}}$.
3. Democratize but initiate a coup at the next opportunity: the elite democratizes each time the political state is $\mathcal{A}$ and initiate a coup each time the state is $(G, \mathcal{D})$.[13] The value associated with option 3 is (see Appendix for details):

$$V_C(\mathcal{AC}) = \frac{v_C(\tau^{\mathcal{D}},\mathcal{D}) + s\beta v_C\left(\tau^{\mathcal{A}},\mathcal{A}\right) + (1-(1-s)\beta)\,\sigma_{\mathcal{D}} + s\beta(\sigma_{\mathcal{A}} - f)}{(1-\beta)\,(1+s\beta)}. \tag{42}$$

The next proposition shows some surprising political consequences of the golden hallo.

Proposition 9 *(The Golden Hallo and Democratization) Suppose that* $\sigma_{\mathcal{D}} > \widehat{\sigma}_{\mathcal{D}}$ *and that* $\mu > \mu_2$*. Define*

$$\widehat{f}\,(\sigma_{\mathcal{A}}) = \left(v_C\left(\tau^{\mathcal{A}},\mathcal{A}\right) + \sigma_{\mathcal{A}} - v_C(\tau^{\mathcal{D}},\mathcal{D})\right) + \frac{(1-(1-s)\,\beta)}{s\beta}\sigma_{\mathcal{D}}.$$

Then

[13] If f is such that democratization should be followed by a coup, it is never optimal for the elite to democratize and then not to initiate a coup the first time after that $S_t^S = G$. Thus, we can focus on the comparison of strategy 2 and strategy 3.

1. *For $f < \widehat{f}(\sigma_{\mathcal{A}})$, the society becomes an unstable democracy with frequent transitions between autocracy and democracy.*

2. *For $f \geq \widehat{f}(\sigma_{\mathcal{A}})$, the society becomes a consolidated democracy immediately.*

3. *The larger the golden hallo to an autocracy is, the more likely it is that society becomes an unstable democracy ($\frac{\partial \widehat{f}(\sigma_{\mathcal{A}})}{\partial \sigma_{\mathcal{A}}} > 0$).*

Proof. Define $\widehat{\sigma}_{\mathcal{D}} = \frac{v_C(\tau^{\mathcal{A}},\mathcal{A})}{1-\beta} - \frac{v_C(\tau^{\mathcal{A}},\mathcal{D})}{1-\beta}$. Then for $\sigma_{\mathcal{D}} > \widehat{\sigma}_{\mathcal{D}}$, the elite prefer consolidated democracy to autocracy. The choice is, therefore, between strategy 2 and 3. Let $\widehat{f}(\sigma_{\mathcal{A}})$ be the solution to $V_C(\mathcal{AC}) = V_C(\mathcal{D})$, then for $f < \widehat{f}(\sigma_{\mathcal{A}})$, $V_C(\mathcal{AC}) > V_C(\mathcal{D})$ and for $f \geq \widehat{f}(\sigma_{\mathcal{A}})$, $V_C(\mathcal{AC}) \leq V_C(\mathcal{D})$ ■

Proposition 9 demonstrates that the golden hallo may induce democratization in situations where autocracy would otherwise have been secure What is required is that the transfer to a newly established democracy is sufficiently large. How stable the emerging democracy is depends on the cost of a coup and for low values of f society experiences repeated regime switches. For sufficiently high values of f, a consolidated democracy emerges. Importantly, a large golden hallo to autocracy (and democracy) inevitably leads to unstable democracy. It is also interesting to note that even if $\sigma_{\mathcal{D}} = 0$ and a newly established democracy is not rewarded with a golden hallo, it is still possible that the elite may democratize. This happens if unstable democracy yields higher payoff than consolidated autocracy (which with $\sigma_{\mathcal{D}} = 0$ is preferred by the elite to consolidated democracy), i.e., when $V_C(\mathcal{AC}) \geq V_C(\mathcal{A})$. A simple calculation shows that this requires that $\sigma_{\mathcal{A}} \geq \frac{v_C(\tau^{\mathcal{A}},\mathcal{A}) - v_C\left(\tau^{\mathcal{D}},\mathcal{D}\right)}{s\beta} + f$. Thus, if the golden hallo to a newly established autocracy is sufficiently larger, it is optimal for the elite to democratize, not because this is desirable in itself, but because it gets a golden hallo when it takes power back in a future coup.

4 Conclusion

We have explored the influence of foreign governments on the development of political institutions. We did this by introducing strategic foreign investments into a model of political transitions. This allowed us to investigate the effects of the interaction between foreign intervention and the domestic social and economic factors that influence political transitions.

This paper has a number of empirical implications that help to understand the causal relationship between different political regimes and economic variables. We obtain the following predictions for economies that receive foreign investments in strategic sectors: An increase in the risk facing foreign investors and the associated capital flight makes it harder to obtain consolidated democracy. Democratization occurs under economic boom. Interestingly, the opposite is found for countries that receive low strategic foreign investment. Regardless of foreign investment, Democracies are less stable in unequal societies.

As political regimes are not equally influenced by the rest of the world and the nature of foreign investment differs across countries, this can explain the difficulties in identifying causal relationships between, for instance, democracy and other economic variables.

We also find that discrete payments to a political regime may have a great impact in the development of political institutions. We show that, in the presence of golden hallos, it becomes harder to consolidate democracies and that this benefits foreign investors through the establishment of friendlier investment environments. Finally, we find that a sufficiently high golden hello may induce democratization. These results altogether suggest that international institutions might play a more important role in relation to political transition than normally recognized.

To test the empirical relevance of our predictions constitute our future agenda.

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5 Appendix

Proof of Lemma 2 It is clear that $\tau_L^{\mathcal{D}} = 0$ and $\tau_\pi^{\mathcal{D}} = \overline{\tau}_\pi$. The first order condition for τ_f is $\frac{1}{A}(Az_0 - A\gamma - 2\tau_f) \leq 0$. The second order condition is satisfied and the optimal tax is $\tau_f^{\mathcal{D}} = \frac{A}{2}(z_0 - \gamma)$. Assumption 1 ($A > A_1$) insures that $\tau_f^{\mathcal{D}} \geq 0$. Let $\tau^{\mathcal{D}} = \left\{0, \overline{\tau}_\pi, \tau_f^{\mathcal{D}}\right\}$. Per-period payoffs are

$$v_C(\tau^{\mathcal{D}}, \mathcal{D}) = \frac{AL^2}{2K} - \overline{\tau}_\pi(1-K) + \frac{(\gamma - 2K\gamma - 4L\gamma + z_0 + 2Kz_0)(\gamma + z_0)A}{8K} \tag{43}$$

$$v_W\left(\tau^{\mathcal{D}},\mathcal{D}\right) = AK + K\overline{\tau}_\pi + \frac{A}{4}\left(\gamma+z_0\right)^2 + A\gamma z_0 - K\overline{\tau}_L. \tag{44}$$

Part 2: Consolidated autocracy. A representative capitalist solves

$$\max_{\tau_\pi,\tau_L,\tau_f} \frac{\Pi}{K} - \tau_\pi + S - C_L(\tau_L) - C_\pi(\tau_\pi).$$

Clearly, we get $\tau_\pi^{\mathcal{A}} = 0$ and $\tau_L^{\mathcal{A}} = \overline{\tau}_L$.The first derivative with respect to τ_f is

$$\frac{1-2K}{AK}\tau_f - \frac{1-K}{K}\left(1-\frac{r^*}{A}+\gamma L\right) + \frac{\gamma L}{K}.$$

The second derivative is positive for $K < \frac{1}{2}$. Thus, the optimal solution is either $\tau_f = 0$ or $\tau_f = Az_0$ (the tax that prevents any FDI inflows). The payoff difference is

$$\frac{\left(1-\frac{r^*}{A}-\gamma L\right)Az_0}{2K},$$

which is positive if $A > \frac{r^*}{1-\gamma L} \equiv A'$. Note that for $\gamma \geq 0$, $A_1 > A'$ and for $\gamma \in [\frac{1}{K-2}, 0)$, $A_2 > A'$. Thus, Assumption 1 implies that the optimal tax on foreign investments is $\tau_f^{\mathcal{A}} = 0$. Let $\tau^{\mathcal{A}} = \{\overline{\tau}_L, 0, 0\}$. The per-period payoffs are:

$$v_C(\tau^{\mathcal{A}},\mathcal{A}) = L\overline{\tau}_L + \frac{AL^2}{2K} + \frac{Az_0}{2K}\left(z_0 - 2L\gamma\right); \tag{45}$$

$$v_W(\tau^{\mathcal{A}},\mathcal{A}) = KA + A\gamma z_0 - (1-L)\,\overline{\tau}_L. \tag{46}$$

Deriving the coup constraint Suppose the political state is $\mathcal{D}$. For the elite, the present value starting in state $(B,\mathcal{D})$ is

$$V_C\left(B,\mathcal{D}\right) = v_C(\mathcal{D}) + \beta W_C(\mathcal{D}) \tag{47}$$

where $W_C(\mathcal{D})$ is the continuation value of democracy and $v_C(\tau^{\mathcal{D}},\mathcal{D})$ is the one-payoff associated with consolidated democracy given in equation (43). The continuation value of democracy is

$$W_C\left(\mathcal{D}\right) = sV_C\left(G,\mathcal{D}\right) + (1-s)\,V_C(B,\mathcal{D}).$$

The present value starting in state $(G,\mathcal{D})$ depends on what the elite does at stage 4 of the time line. Suppose that it wants to undertake a coup if workers propose $\tau^{\mathcal{D}}$ in stage 3. To avoid the coup, workers might give concessions. Let $v_C\left(\tau,\mathcal{D}\right)$ be the one-period payoff of a capitalist under democracy when the tax vector is τ. We then get

$$V_C\left(G,D\right) = v_C(\tau,\mathcal{D}) + \beta W_C\left(\mathcal{D}\right). \tag{48}$$

Given the tax vector τ, the elite initiates a coup if and only if

$$v_C(\tau^{\mathcal{A}},\mathcal{A}) - f + \beta W_C(\mathcal{A}) \geq v_C(\tau,\mathcal{D}) + \beta W_C\left(\mathcal{D}\right) \tag{49}$$

where $v_C(\tau^{\mathcal{A}}, \mathcal{A})$ is given in equation (45). The continuation value of autocracy, $W_C(\mathcal{A})$, is given by

$$W_C(\mathcal{A}) = sV_C(G, \mathcal{A}) + (1-s)\left(v_C(\tau^{\mathcal{A}}, \mathcal{A}) + \beta W_C(\mathcal{A})\right). \tag{50}$$

$V_C(G, \mathcal{A})$ depends on what the elite needs to do to prevent a revolution (they always want to do something to avoid a revolution, if necessary give away the vote). Suppose that Assumption 4 is satisfied such that the elite *can* prevent a revolution by democratization. Democratization clearly dominates a revolution from the point of view of the elite, and is worse than giving tax concessions. So democratization gives a lower bound on what the elite might get in state (G, E).[14] Suppose they democratize such that

$$V_C(G, \mathcal{A}) = v_C(\tau^{\mathcal{D}}, \mathcal{D}) + \beta W_C(\mathcal{D}). \tag{51}$$

We can now rewrite the coup constraint by substituting equations (50) to (51) into equation (49) and rearrange:

$$\beta\left(W_C(\mathcal{A}) - W_C(\mathcal{D})\right) \geq f + v_C(\tau, \mathcal{D}) - v_C(\tau^{\mathcal{A}}, \mathcal{A}).$$

Note that

$$W_C(\mathcal{A}) - W_C(\mathcal{D}) = sV_C(G, \mathcal{A}) + (1-s)V_C(B, \mathcal{A}) - \left(sV_C(G, \mathcal{D}) + (1-s)V_C(B, \mathcal{D})\right). \tag{52}$$

Substitute equations (47), (48) and (51) into (52) and rearrange to get

$$W_C(\mathcal{A}) - W_C(\mathcal{D}) = \frac{(1-s)\,v_C(\tau^{\mathcal{A}}, \mathcal{A}) - (1-2s)\,v_C(\tau^{\mathcal{D}}, \mathcal{D}) - sv_C(\tau, \mathcal{D})}{1-(1-s)\,\beta}.$$

Substitute this back into the coup constraint (equation (49)) to get equation (10).

Deriving assumption 4 Democracy can take three different forms: fully consolidated democracy, unstable democracy and semi-consolidated democracy with tax concessions. If unstable democracy can prevent a revolution, then so can the other two types of democracy. Thus, we need to find a condition that insures that unstable democracy is better for workers than a transition to socialism. Formally,

$$\frac{v_W(\mathcal{S})}{1-\beta} - \mu \leq v_W(\tau^{\mathcal{D}}, \mathcal{D}) + \beta W_W(\mathcal{D}) \tag{53}$$

where

$$W_W(\mathcal{D}) = s\left(v_W(\tau^{\mathcal{A}}, \mathcal{A}) + \beta W_W(\mathcal{A})\right) + (1-s)\left(v_W(\tau^{\mathcal{D}}, \mathcal{D}) + \beta W_W(\mathcal{D})\right))$$

and $v_W(\tau^{\mathcal{D}}, \mathcal{D})$ and $v_W(\tau^{\mathcal{A}}, \mathcal{A})$ are given by equations (44) and (46), respectively. Furthermore, we have

$$W_W(\mathcal{D}) = s\left(v_W(\tau^{\mathcal{D}}, \mathcal{D}) + \beta W_W(\mathcal{D})\right) + (1-s)\left(v_W(\tau^{\mathcal{A}}, \mathcal{A}) + \beta W_W(\mathcal{A})\right).$$

[14] Note that state D could not have been reached in the first place if the elite does not use democratization to prevent a revolution.

This yields two equations in two unknown which we can solve to get

$$\begin{aligned} W_W(\mathcal{D}) &= \frac{s v_W(\tau^{\mathcal{A}}, \mathcal{A}) + (1 - \beta(1 - 2s) - s) v_W(\tau^{\mathcal{D}}, \mathcal{D})}{(1 - \beta(1 - 2s))(1 - \beta)} \\ W_W(\mathcal{A}) &= \frac{s v_W(\tau^{\mathcal{D}}, \mathcal{D}) + (1 - \beta(1 - 2s) - s) v_W(\tau^{\mathcal{A}}, \mathcal{A})}{(1 - \beta(1 - 2s))(1 - \beta)}. \end{aligned}$$

Substitution of this into equation (53) and rearrange gives condition (18).

Proof of Lemma 3 The problem that the workers face is:

$$\max_{\tau_f, \tau_L, \tau_\pi} AK + A\gamma K_f - (\tau_L - \tau_\pi) K + K_f \tau_f - C_\pi(\tau_\pi) - C_L(\tau_L)$$

subject to the coup constraint given by equation (**??**), $\left(z_0 - \frac{\tau_f}{A}\right) \geq 0$, $\overline{\tau}_L - \tau_L \geq 0$ and $\overline{\tau}_\pi - \tau_\pi \geq 0$. Expanding $v_C(\tau, \mathcal{D})$ in equation (**??**) the coup constraint reads:

$$\frac{\frac{1}{2}L^2 + \frac{1}{2}\left(z_0 - \frac{\tau_f}{A}\right)^2 - \gamma(1-K)\left(z_0 - \frac{\tau_f}{A}\right)}{K} A + \left(z_0 - \frac{\tau_f}{A}\right)\tau_f + (\tau_L - \tau_p)(1-K) - O(f) \geq 0$$

The first order conditions associated with this problem are

$$\tau_f : -\gamma + z_0 - 2\frac{\tau_f}{A} + \lambda\left(z_0 - \frac{2}{A}\tau_f + \frac{1}{AK}\left(A(1-K)\gamma - Az_0 + \tau_f\right)\right) \leq 0$$

$$\tau_L : -K + \lambda_c(1-K) \leq 0$$

$$\tau_\pi : K - \lambda_c(1-K) \leq 0$$

$$\lambda_c : \frac{\frac{1}{2}(1-K)^2 + \frac{1}{2}\left(z_0 - \frac{\tau_f}{A}\right)^2 - \gamma(1-K)\left(z_0 - \frac{\tau_f}{A}\right)}{K} A + \left(z_0 - \frac{\tau_f}{A}\right)\tau_f + (\tau_L - \tau_p)(1-K) - O(f) \leq 0,$$

where λ_c is the Lagrangian multiplier associated with the coup constraint.

Recall that $v_C(\tau, \mathcal{D})$ is a convex function of τ_f with a minimum at $\tau_f^{\mathcal{A}\min} = \frac{A(1-K)(z_0-\gamma)}{1-2K}$. Notice that $\tau_f^{\mathcal{A}\min} > \tau_f^{\mathcal{D}}$. This means that starting from $\tau_f = \tau_f^{\mathcal{D}}$, workers would have to reduce τ_f to increase the elite's welfare and it would not be optimal for workers to discretely increase τ_f. Importantly, since the marginal cost to workers of changing τ_f by a small amount is zero at $\tau_f = \tau_f^{\mathcal{D}}$, workers always begin by adjusting the tax on foreign capital and once it has reached zero, they begin increasing the tax on labour and decreasing the tax on profits. Formally,

- For $O(f) < v_C(\tau^{\mathcal{D}}, \mathcal{D})$, the coup constraint is not binding and a coup can be avoided by setting $\tau_f = \tau_f^{\mathcal{D}}$, $\tau_L = 0$ and $\tau_\pi = \overline{\tau}_\pi$.
- For $O(f) \in [v_C(\tau^{\mathcal{D}}, \mathcal{D}), v_C(\tau', \mathcal{D})]$ where

$$v_C(\tau', \mathcal{D}) = \frac{A}{K}\left(\frac{1}{2}(1-K)^2 + \frac{1}{2}z_0^2 - \gamma z_0(1-K)\right) - \overline{\tau}_\pi(1-K)$$

and $\tau' = (0, \overline{\tau}_\pi, 0)$, the coup is avoided by setting $\tau_L = 0$, $\tau_\pi = \overline{\tau}_\pi$ and

$$\tau_f = \frac{(1-K)(z_0-\gamma)A}{1-2K} - \frac{1}{1-2K}\sqrt{M}$$

where

$$\begin{aligned} M &= 2KA(1-2K)O(f) + 2KA(1-2K)(1-K)\overline{\tau}_\pi + z_0 2\gamma K A^2 (K-1) \\ &\quad + A^2K^2z_0^2 + A^2(K-1)^2\left(2K+\gamma^2-1\right). \end{aligned}$$

- For $O(f) \in (v_C(\tau', \mathcal{D}), v_C(\tau^{\mathcal{A}}, \mathcal{A})]$, the coup is avoided by setting $\tau_f = 0$ and setting

$$(\tau_L - \tau_\pi) = \frac{1}{1-K}\left(O(f) - \frac{A}{K}\left(\frac{1}{2}z_0^2 - \gamma z_0(1-K) + \frac{1}{2}(1-K)^2\right)\right).$$

- For $O(f) > v_C(\tau^{\mathcal{A}}, \mathcal{A})$, a coup cannot be prevented.

The proposition follows by noting that $f \geq f_1 \Leftrightarrow O(f) < v_C(\tau^{\mathcal{D}}, \mathcal{D})$, $f \in [f_3, f_1] \Leftrightarrow O(f) \in [v_C(\tau^{\mathcal{D}}, \mathcal{D}), v_C(\tau',\mathcal{D})]$, $f \in (f_2, f_3 \Leftrightarrow O(f) \in (v_C(\tau',\mathcal{D}), v_C(\tau^{\mathcal{A}}, \mathcal{A})]$, and that $f < f_2 \Leftrightarrow O(f) > v_C(\tau^{\mathcal{A}}, \mathcal{A})$, where f_3 is defined as the solution to $v_C(\tau',\mathcal{D}) = O(f)$ and given in equation (13).

Deriving the revolution constraint Suppose the political state A and let assumption 4 hold such that the elite can, in fact, prevent a revolution by democratization. Workers never initiate a revolution when the social state is B. If workers initiate a revolution when the social state is G there is a transition to socialism which is an absorbing state. Workers get

$$V_W(\mathcal{S}) = \frac{v_w(\mathcal{S})}{1-\beta} - \mu$$

where $v_w(\mathcal{S}) = A\left(1 - \frac{1}{2}L\right)$. A revolution can be prevented by democratization, but tax concessions might be sufficient. Suppose that the elite gives concessions. Clearly, these are only given if $S_t^S = G$. Let $v_W(\tau, \mathcal{A})$ be workers' per-period payoff when the elite offers the tax concession vector τ. We have

$$V_W(G, \mathcal{A}) = v_W(\tau, \mathcal{A}) + \beta W_W(\mathcal{A})$$

where

$$W_W(A) = s\left(v_W(\tau, \mathcal{A}) + \beta W_W(\mathcal{A})\right) + (1-s)\left(v_W(\tau^{\mathcal{A}}, \mathcal{A}) + \beta W_W(\mathcal{A})\right).$$

Solving this equation, we get $W_W(\mathcal{A}) = \frac{s v_W(\tau,\mathcal{A}) + (1-s) v_W(\mathcal{A})}{1-\beta}$. We can write the revolution constraint as

$$\frac{v_w(\mathcal{S})}{1-\beta} - \mu \geq v_W(\tau, \mathcal{A}) + \beta W_W(\mathcal{A}).$$

Substitution yields the revolution constraint as in equation (20).

Proof of Lemma 5 The problem solved by the elite is

$$\max_{\{\tau_L,\tau_\pi,\tau_f\}} \frac{\left(\frac{1}{2}L^2+\frac{1}{2}K_f^2-\gamma K_f L\right)A}{K}-\tau_\pi+K_f\tau_f+\tau_L L+\tau_\pi K-C_\pi\left(\tau_\pi\right)-C_L\left(\tau_L\right)$$

subject to the revolution constraint (equation (20)), $z_0-\frac{\tau_f}{A}\geq 0$, $\overline{\tau}_L-\tau_L\geq 0$ and $\overline{\tau}_\pi-\tau_\pi\geq 0$. Substituting for K_f from equation (4), we can write the revolution constraint as

$$A(K+\gamma z_0)-\gamma\tau_f-\tau_L+\tau_L L+\tau_\pi K+\tau_f z_0-\frac{\tau_f^2}{A}-Q(\mu)\geq 0,$$

where $Q(\mu)$ is defined in equation (20). The first order conditions are:

$$\begin{aligned}
\tau_L &: L-\lambda_r+L\lambda_r\leq 0\\
\tau_\pi &: K+K\lambda_r-1\leq 0\\
\tau_f &: z_0-\frac{2\tau_f}{A}+z_0\lambda_r-\gamma\lambda_r-\frac{2\lambda\tau_f}{A}+\frac{1}{K}L\gamma+\frac{1}{K}\left(\frac{\tau_f}{A}-z_0\right)\leq 0\\
\lambda_r &: A\left(K+\gamma z_0\right)-\gamma\tau_f-\tau_L+\tau_L L+\tau_\pi K+\tau_f z_0-\frac{\tau_f^2}{A}-Q\left(\mu\right)\leq 0
\end{aligned}$$

where λ_r is the Lagrangian multiplier on the revolution constraint. We get:

- For $Q(\mu)<v_W(\tau^{\mathcal{A}},\mathcal{A})$, the unconstrained optimal tax structure $\tau^{\mathcal{A}}=\{\overline{\tau}_L,0,0\}$ is sufficient to avoid a revolution.

- For $Q\left(\mu\right)\in\left[v_W(\tau^{\mathcal{A}},\mathcal{A}),v_W(\tau',\mathcal{A})\right]$, where $v_W(\tau',\mathcal{A})=A\left(K+\gamma z_0\right)+K\overline{\tau}_\pi$ and $\tau'=\{0,\overline{\tau}_\pi,0\}$, we have $\tau_f=0$. A combination of labour and capital taxes are used to satisfy the revolution constraint with

$$\tau_\pi-\tau_L=Q\left(\mu\right)-A\left(K+\gamma z_0\right).$$

- For $Q\left(\mu\right)\in(v_W(\tau',\mathcal{A}),v_W(\tau^{\mathcal{D}},\mathcal{D})]$, we get that

- For $Q\left(\mu\right)>v_W(\tau^{\mathcal{D}},\mathcal{D})$, the revolution constraint cannot be satisfied in any way by concessions.

The proposition follows by noting that $Q(\mu)<v_W(\tau^{\mathcal{A}},\mathcal{A})\Leftrightarrow\mu>\mu_2$, $Q\left(\mu\right)\in\left[v_W(\tau^{\mathcal{A}},\mathcal{A}),v_W(\tau',\mathcal{A})\right]\Leftrightarrow\mu\in[\mu_3,\mu_2]$, $Q\left(\mu\right)\in\left[v_W(\tau',\mathcal{A}),v_W(\tau^{\mathcal{D}},\mathcal{D})\right]\Leftrightarrow\mu\in[\mu_1,\mu_3]$ and $Q(\mu)>v_W(\tau^{\mathcal{D}},\mathcal{D})\Leftrightarrow\mu<\mu_1$, where μ_3 is the solution to $v_W(\tau',\mathcal{A})=Q\left(\mu\right)$ and given in equation (22).

Proof of Proposition 6 To be added.

Comparative statics with respect to f_i. and so $\frac{\partial f_3}{\partial y} = \beta(1-2s)\frac{\partial f_1}{\partial y}$ for $y \in \{r^*, A, \gamma\}$. First, we find that

$$\frac{\partial f_1}{\partial r^*} = \frac{(r^* - A(1-K\gamma))(3-2K)}{(1-(1-s)\beta)4AK} < 0,$$

as $A \geq A_1 = \frac{r^*}{1-\gamma K}$. Moreover, $\frac{\partial f_3}{\partial r^*} = \frac{\partial f_2}{\partial r^*} = \frac{\partial f_1}{\partial r^*}\beta(1-2s) < 0$. Second, we find that

$$\frac{\partial f_1}{\partial A} = \frac{(A\gamma K - A + r^*)(A\gamma K - A - r^*)(3-2K)}{8KA^2} > 0$$

as $A > A_1$. Moreover, $\frac{\partial f_2}{\partial A} = \frac{\partial f_3}{\partial A} = \frac{\partial f_1}{\partial A}\beta(1-2s) > 0$. Third, we find that

$$\frac{\partial f_1}{\partial \gamma} = \frac{r^*(3-2K)(r^* - A(1-K\gamma))}{4} < 0$$

as $A > A_1$. Moreover, $\frac{\partial f_2}{\partial \gamma} = \frac{\partial f_3}{\partial \gamma} = \frac{\partial f_1}{\partial \gamma}\beta(1-2s) > 0$. Forth, for $\gamma = 0$, we get

$$\frac{\partial f_1}{\partial K} = -\frac{3(A-r^*)^2 + 8K^2 A(\overline{\tau}_L + \overline{\tau}_\pi)}{8K^2 A(1-(1-s)\beta)} < 0.$$

Moreover, $\frac{\partial f_2}{\partial K} = \frac{\partial f_1}{\partial K}(1-2s)\beta < 0$ and

$$\frac{\partial f_3}{\partial K} = -\frac{3\beta(1-2s)(r^*-A)^2}{(1-(1-s)\beta)K^2 A} - \frac{(\overline{\tau}_L + \overline{\tau}_\pi)}{(1-(1-s)\beta)} < 0.$$

Proof of Proposition 7 To be added.

Comparative statics with respect to μ_i First, we find that

$$\frac{\partial \mu_1}{\partial r^*} = \frac{K\gamma}{A(1-\beta)} - \frac{(r^* - A + AK\gamma)(1-(1-s)\beta)}{2A(1-\beta)}$$

since $A > A_1$ the second term is negative. The first term is zero for $\gamma = 0$, so $\frac{\partial \mu_1}{\partial r^*}\big|_{\gamma=0} > 0$. Moreover, $\frac{\partial \mu_2}{\partial r^*} = \frac{\partial \mu_3}{\partial r^*} = \frac{\gamma}{1-\beta}$. Second, we find that

$$\frac{\partial \mu_1}{\partial A} = \frac{((1-2\gamma^2)(1-K) - 2\gamma)}{2(1-\beta)} - \frac{(r^* - A + AK\gamma)(AK\gamma - r^* - A)(1-(1-s)\beta)}{4A^2(1-\beta)}.$$

The last term is positive because $A > A_1$. The first term is positive for $\gamma \in [-1, \overline{\gamma}]$ and negative for $\gamma \in [\overline{\gamma}, 1]$ where $\overline{\gamma} = \frac{\sqrt{3-2K(2-K)}-1}{2(1-K)} > 0$. Moreover,

$$\frac{\partial \mu_2}{\partial A} = \frac{\partial \mu_3}{\partial A} = \frac{(1-2\gamma^2)(1-K) - 2\gamma}{2(1-\beta)},$$

which is positive for $\gamma \in [-1, \overline{\gamma}]$ and negative for $\gamma \in [\overline{\gamma}, 1]$. Thus, for $\gamma = 0$, μ_2 and μ_3 increase in A. The effect on μ_1 is ambiguous. Third, we have that

$$\frac{\partial \mu_1}{\partial \gamma} = \frac{(1-s)\beta K(r^* - A + AK\gamma)}{2(1-\beta)} + \frac{(2-K)(r^* - A + AK\gamma - 2A\gamma)}{2(1-\beta)} < 0$$

as $A > \max[A_1, A_2]$ and $\gamma > \frac{1}{K-2}$. Moreover,

$$\frac{\partial \mu_2}{\partial \gamma} = \frac{\partial \mu_3}{\partial \gamma} = \frac{(r^* - A - 2A\gamma + 2AK\gamma)}{1-\beta} < 0$$

if $A > \frac{r^*}{1+2\gamma(1-K)}$ and $\gamma > \frac{1}{2(K-1)}$. These conditions are satisfied for $\gamma = 0$. Forth, we have that

$$\frac{\partial \mu_1}{\partial K} = -\frac{(1-(1-s)\beta)\left(\overline{\tau}_\pi + \frac{1}{2}\gamma\left(r^* - A + AK\gamma\right)\right)}{1-\beta} - \frac{\frac{1}{2}(A - 2\gamma^2) - (1-s)\beta\overline{\tau}_L}{1-\beta}$$

which is negative for $\gamma = 0$ and $A > 2\left(1-s\right)\beta\overline{\tau}_L$. Moreover,

$$\frac{\partial \mu_2}{\partial K} = \frac{\frac{1}{2}\left(2\overline{\tau}_L - A + 2A\gamma^2\right)}{1-\beta}$$

which is negative for $\gamma = 0$ and $A > 2\overline{\tau}_L$. Finally,

$$\frac{\partial \mu_3}{\partial K} = -\frac{(1-(1-s)\beta)\,\overline{\tau}_\pi}{1-\beta} - \frac{\frac{1}{2}A - A\gamma^2 - (1-s)\beta\overline{\tau}_L}{1-\beta}$$

which is negative for $\gamma = 0$ and $A > 2\left(1-s\right)\beta\overline{\tau}_L$.

Deriving $W_f(a)$ Strategy a implies that the domestic economy becomes a consolidated democracy the first time the social state is G. The value for the foreign government is:

$$W_f(a) = s\left(v_f(\tau_f^{\mathcal{D}}) + \beta W_f(\mathcal{D})\right) + (1-s)\left(v_f(0) + \beta W_f(a)\right). \tag{54}$$

As $W_f(\mathcal{D}) = v_f(\tau_f^{\mathcal{D}}) + \beta W_f(\mathcal{D})$, we obtain $W_f(\mathcal{D}) = \frac{v_f(\tau_f^{\mathcal{D}})}{1-\beta}$. Substituting this into equation (54) yields

$$W_f(a) = [(\frac{s}{1-\beta})v_f(\tau_f^{\mathcal{D}}) + (1-s)v_f(0)]\frac{1}{1-(1-s)\beta}$$

Deriving $W_f(b)$ Strategy b yields

$$W_f(b) = s\left(v_f(\tau_f^{\mathcal{D}}) + \beta W_f(\mathcal{D})\right) + (1-s)\left(v_f(0) + \beta W_f(b)\right). \tag{55}$$

The expected value of democracy is

$$W_f(\mathcal{D}) = s\left(v_f(0) + (f - f_3) + \beta W_f(\mathcal{D})\right) + (1-s)\left(v_f(\tau_f^d) + \beta W_f(\mathcal{D})\right).$$

Solving this equation yields

$$W_f(\mathcal{D}) = \frac{s(v_f(0) - (f - f_3)) + (1-s)v_f(\tau_f^d)}{1-\beta}. \tag{56}$$

Substituting equations (56) into equation (55) yields the net present value of strategy b as given in equation (27)

Deriving $V_C(\mathcal{AC})$ The payoff to the elite starting from $S_t^p = \mathcal{A}$ is

$$W_C(\mathcal{A}) = v_C(\tau^{\mathcal{D}}, \mathcal{D}) + \sigma_{\mathcal{D}} + \beta W_C(\mathcal{D}) \tag{57}$$

because the elite is assumed to democratize in the first period and subsequently, immediately after a coup. The payoff to the elite starting in $S_t^p = \mathcal{D}$ is

$$W_C(\mathcal{D}) = s\left(v_C\left(\tau^{\mathcal{A}}, \mathcal{A}\right) + \sigma_{\mathcal{A}} - f + \beta W_C(\mathcal{A})\right) + (1-s)\left(v_C\left(\tau^{\mathcal{D}}, \mathcal{D}\right) + \beta W_C(\mathcal{D})\right)$$

We can solve for $W_C(\mathcal{D})$

$$W_C(\mathcal{D}) = \frac{s\left(v_C\left(\tau^{\mathcal{A}}, \mathcal{A}\right) + \sigma_{\mathcal{A}} - f + \beta W_C(\mathcal{A})\right) + (1-s)\, v_C\left(\tau^{\mathcal{D}}, \mathcal{D}\right)}{1-(1-s)\,\beta}. \tag{58}$$

Substitute this into equation (57) to get equation (42) where $V_C(\mathcal{AC}) = W_C(\mathcal{A})$.

Deriving the comparative statics with respect to ε_f and ε_μ Let $\varepsilon_f = \frac{f_1 - f_3}{z_0 - \gamma} A$ and $\varepsilon_\mu = \frac{\mu_3 - \mu_1}{z_0 - \gamma} A$ where f_1 and f_3 are defined in equations (11) and (12) and μ_1 and μ_3 are defined in equations (**??**) and (21). First, we find

$$\frac{\partial \varepsilon_f}{\partial r^*} = \frac{(1+2s\beta-\beta)\,(2K-3)\,A}{8\,(s\beta-\beta+1)\,K} < 0$$

as $K < \frac{1}{2}$ and

$$\frac{\partial \varepsilon_\mu}{\partial r^*} = -\frac{A\,(1-(1-s)\,\beta)^2}{4\,(1-\beta)} < 0.$$

Second, we find

$$\begin{aligned}
\frac{\partial \varepsilon_f}{\partial A} &= \frac{(r^* - 2A + 2AK\gamma)\,(1+2s\beta-\beta)\,(2K-3)}{8\,(s\beta-\beta+1)\,K} > 0 \\
\frac{\partial \varepsilon_\mu}{\partial A} &= -\frac{(1-(1-s)\,\beta)^2\,(r - 2A + 2AK\gamma)}{4\,(1-\beta)} > 0
\end{aligned}$$

because $A > A_1$ which implies that $(r - 2A + 2AK\gamma) < 0$ and $K < \frac{1}{2}$. Third, we find

$$\frac{\partial \varepsilon_f}{\partial K} = \frac{3\left(r^* - A + \frac{2}{3}AK^2\gamma\right)(1+2s\beta-\beta)\,A}{8\,(1+s\beta-\beta)\,K^2}$$

which is negative for $A > \frac{r^*}{1-\frac{2}{3}K^2\gamma}$ and

$$\frac{\partial \varepsilon_\mu}{\partial K} = -\frac{(1-(1-s)\,\beta)^2\,A^2\gamma}{4\,(1-\beta)} < 0.$$

Forth, we find

$$\frac{\partial \varepsilon_f}{\partial \gamma} = \frac{(1 + 2s\beta - \beta)(2K - 3) A^2}{8(1 + s\beta - \beta) K} < 0$$

$$\frac{\partial \varepsilon_\mu}{\partial \gamma} = -\frac{(1 - (1 - s)\beta)^2 A^2 K}{4(1 - \beta)} < 0$$

as $K < \frac{1}{2}$.