Political transition in a small open economy: Retracing the economic trail of South Africa's long walk to democracy

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Abstract

This paper seeks to offer an economic explanation for the emergence of democracy in societies with high income inequality and narrow middle-class such as Apartheid South Africa. The presence of a credible threat of capital flight is shown to render democracy less unpleasant to the elites by making future tax concessions possible. However, inequality should be sufficiently low for the poor to have enough incentive to concede less redistribution to avoid capital flight. The development of the finance sector in South Africa in the later years of Apartheid made the exit option a major part of the democratic bargain.

JEL codes: P16, O55

Key words: democratization; capital mobility; inequality; South Africa; Africa

1 Introduction

So far as political dispensations affect resource allocation and vice versa, democracy owes its existence to economic fundamentals as much as to political forces. The origins of democratic transitions have been attributed to the rise of a broad middle class (Lipset, 1960) or the emergence of a moderately egalitarian income distribution (Acemoglu and Robinson, 2001). But there is little consensus as to what explains democratic transitions in highly unequal societies with narrowly constituted middle-class. According to Acemoglu and Robinson (2001), countries with high income inequality could democratize if repression proves too

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costly. However, democracy will have a hard time getting consolidated in such societies. Therefore, highly unequal societies will end up oscillating between episodes of democratization and coups. If wealth is mobile across jurisdictions, however, capital flight, instead of coups, may be the preferred form of elite response. Hence, in the face of high inequality, the elites could end up sending their capital away from a potentially redistributive democracy (Boix (2003), Freeman and Quinn (2012).

If income inequality is considered a central determinant of the prospect of democratization, capital mobility should have differential impact in countries with different levels of inequality. As much as capital mobility is used as a threat to forestall redistribution, its effectiveness depends on how strongly the majority in democracy care to avoid capital flight. This paper seeks to explain the joint impact of inequality and capital mobility on democratization in a dynamic framework where the future commitment of the median-voter depends on global market conditions. Specifically, the paper attempts to account for the equilibrium level of capital flight in democracies by identifying the link between the democratic bargain and factors such as initial inequality and expectation of global market conditions.

The conceptual questions in this paper are inspired by the story of South Africa's political transition in 1994. South Africa was and still continues to be a highly unequal country. On the eve of the transition, the middle-class of the country was mostly composed of a minority racial group. Indeed, repression had become costly towards the end of the Apartheid regime due to international alienation and sanctions. However, there must be a more nuanced set of economic explanations for the nature of the transition and the type of democracy South Africa has become. In the two decades following the fall of Apartheid, South Africa has not suffered a reversal of democracy in the form of a coup. Nor has it experienced the kind of mass exodus of financial and human capital that normally characterizes regime changes in economically and racially polarized places. It might seem obvious that the transition in South Africa happened due to concerted political pressure from inside and outside as well as due to the mere incompatibility of a system like Apartheid with the modern era. However, economic factors were at play even before the political pressure started to bite. A careful reading of South Africa's history reveals that a constellation of various economic forces shaped the way political pressure brought about the transition and the nature of the democratic equilibrium that has emerged after the transition. In the tradition of analytic-narrative studies, this paper draws on attributes that might be relevant in a country like South Africa to further refine an existing theoretical model. The model will later be applied to come up with a more structured narrative of South Africa's transition.

I follow the theoretical framework presented in Acemoglu and Robinson (2001, 2006) (referred to as AR framework henceforth) closely to introduce capital mobility in the strategic interaction between the elites and the poor in a non-democracy. One of the central propositions of the AR framework is that elites in highly unequal democracies may use the coup threat to secure a concession of lower taxes from the poor median-voter or to revert to non-

democracy altogether. The present version of the framework replaces the coup option with capital flight. By doing so, the new extension is supposed to bring the original framework closer to a world where capital and people are more mobile whereas coups are not commonly staged by economic elites. As in the AR framework, whether a society becomes democratic or not hinges mainly on the level of income inequality. However, due to the availability of an exit option, democratization may be preferred by the elites even when redistribution in a nondemocratic status quo could ward off revolution.

The framework maintains that the costs of revolution and repression are important determinants of the choice between repression and redistribution under non-democracy. Once democratization is considered as a third option, the composition of the portfolio of the elites in terms of mobile and immobile assets becomes an important factor determining whether democratization is a potentially viable outcome. If the structure of the economy is such that most of the wealth of the elites, including their human capital, is mobile, democracy will be bedeviled by capital flight and elite exodus. Conversely, if wealth is largely immobile, even a highly redistributive democracy will be tolerated though it is less likely that it would be instituted in the first place. If the degree of wealth mobility is somewhere between the above two extremes, the threat of capital flight may be used to obtain tax concessions. However, the amount of wealth that would be left behind in case of elite exit should be small enough for tax concession to be offered by the poor in democracy. Moreover, inequality should be sufficiently low for the majority to concede lower taxes. This is because even a small amount of wealth that would be left behind after capital flight could be too tempting for the majority to offer tax concession when the median-voter is extremely poor.

The South African narrative indicates that the stage for the emergence of democracy was already being set in the 1970s by rising cost of repression and higher probability of revolution. The cost of repression is captured by the ex-post loss of foreign direct investment and intensifying sanctions. The likelihood of revolution, on the other hand, can be proxied by the schooling of the African population which increased substantially in the 1970s. However, democratization could not have been inevitable until the wealth of the white (particularly, the Afrikaner) population became more diversified gaining further potential for international mobility. This development was bolstered by the emergence of a global environment in the 1980s and 1990s that was more conducive to capital mobility. Given mining was still a major part of the economy, however, capital mobility was not high enough to threaten mass withdrawal. Moreover, wage and human capital inequalities were showing a sign of decline in the 1980s, suggesting that an African majority would be willing to offer certain concessions after democratization.

The conceptual innovation in this paper is closely linked to the literature on exit. The recognition of the significance of exit as a way of expressing nonconformity with the status quo could be traced as far back as to Jean-Jacques Rousseau. In a seminal work that employs the logic of market competition to explain politics, Hirschman (1970) provides a juxtaposition of 'exit' and 'voice'

as the two major forms of reaction to economic and political discontent. The strategic use of the exit option is incorporated into a formal framework of democratization by Boix (2003). However, Boix's framework is static. This might have deprived it of potentially interesting results stemming from a dynamic framing of the commitment problem. On the empirical front, Freeman and Quinn (2012) examine the role of capital mobility on political regime change using cross-country data.

As far as the narrative is concerned, the role of economic factors in bringing about political change in South Africa has been the central focus of liberal social scientists (see Lundahl (1989) for summary). For instance, Porter (1978) and Lundahl (1982) present theoretical models describing the economic foundations of the Apartheid regime, particularly focusing on the role of labor repression. With regard to the transition, a few authors have offered their own theoretical frameworks to explain the emergence of democracy in South Africa. Rosendorff (2001) attributes the democratic transition in South Africa to the relative flattening of the income distribution after the 1970s. Inman and Rubinfeld (2011) credit the design of federal institutions as a means to protect the economic interest of the white elites for facilitating a smooth transition. Wood (2001) recognizes the role of economic interdependencies in reshaping the preference structure of economic elites in the face of insurgent resistance. Financial and human capital flight has often been presented in the public discourse as imminent threat that could come along with redistributive policies in South Africa. Nevertheless, the present paper is arguably the first attempt to analyze the role of capital mobility in the transition using a formal framework.

The rest of the paper is organized as follows. Section two presents the theoretical framework along with discussion of the main results. Section three presents the narrative from South Africa. In a latter part of section three, the main results of the analytic framework presented in section two will be interpreted using the South African narrative. Section four concludes.

2 Theoretical model

2.1 Preliminaries

2.1.1 The economic environment

Society is assumed to be composed of two distinct groups: the poor and the elites. Given a continuum one of agents, the elites make up a proportion δ of the agents while the poor constitute $1 - \delta$. By definition, the elites are a minority; hence $\delta < 1/2$. In essence, the elites are different from the poor because they own all the capital stock, K, in the economy. Each member of the elites owns a fraction δ of the capital stock. The poor supply one unit of labor each. Therefore, the total labor supply in the economy is $L = 1 - \delta$. The elites are assumed to supply no labor. A simple form of Cobb-Douglass production function is applied to combine labor and capital to produce a single numeraire

product:

$$Y = K^\theta L^{1-\theta} \equiv K^\theta (1-\delta)^{1-\theta}$$

Where $0 < \theta < 1$.

Let the capital stock depreciate to zero at the end of each period. To abstract away from consumption and investment decisions, assume the elites are endowed with an inexhaustible reservoir of assets that is used to replenish the capital stock at the beginning of each period. The endowment of assets consists of a variable combination of liquid and illiquid assets determining the degree of capital mobility.

In competitive markets factors of production are paid their marginal products, giving rise to the following factor prices:

$$w = (1-\theta)\left(\frac{K}{1-\delta}\right)^\theta$$

$$r = \theta\left(\frac{K}{1-\delta}\right)^{\theta-1}$$

where w is wage rate and r is the return to capital. Total income measured at the numeraire good is the same as total production. Accordingly, average income calculated for the continuum 1 population is the same as total income, $\bar{y} \equiv Y$.

The incomes of the poor and the elites follow directly from their ownership of factors of production. The elites earn the returns on their capital. Capital income is shared equally among the elites such that,

$$y^r = \frac{1}{\delta}\left(\theta\left(\frac{K}{1-\delta}\right)^{\theta-1} K\right) = \frac{\theta}{\delta}\bar{y} \tag{1}$$

Equation (1) shows that the relative position of the representative elite on the income distribution is determined by whether θ is bigger or smaller than δ. We assume $\theta > \delta$, implying that the elites earn over and above the average income.

The representative poor agent earns the wage for the one unit of labor supplied:

$$y^p = (1-\theta)\left(\frac{K}{1-\delta}\right)^\theta = \left(\frac{1-\theta}{1-\delta}\right)\bar{y} \tag{2}$$

Given $\theta > \delta$, the representative poor earns less than the average income. Hence,θ serves as a measure of overall income inequality between the poor and the rich in subsequent analysis.

In an infinite horizon economy, the identical preferences of individuals as represented by individual i at time t are given by the following discounted sum of post-tax incomes with discount factor $\beta \in (0, 1)$:

$$U^i = E_t \sum_{j=0}^{\infty} \beta^j \hat{y}_{t+j}^i \tag{3}$$

for $i = p$ (poor), r (rich), where $\hat{y}^i_t$ is post-tax income of agent i at time t, and E_t is the expectation operator conditional on all information available at time t. Post-tax income is given by:

$$\hat{y}^i = (1 - \tau)y^i + T$$

where τ is a linear tax rate and T is a lump-sum transfer from the government. I assume that taxation at the rate τ involves a cost, $c(\tau)$, implying that a deadweight of $c(\tau)Y$ is lost after taxation. c is twice continuously differentiable with $c(0) = 0$, $c'(0) = 0$, $c'(\tau) > 0$ for all $\tau > 0$, and $c'' \geq 0$. Hence, the government budget constraint for a balanced budget implies:

$$T = (\tau - c(\tau))\bar{y}$$

The utility function in equation (3) can now be rewritten as,

$$U^i = E_t \sum_{j=0}^{\infty} \beta^j ((1 - \tau_t)y^i + (\tau_t - c(\tau_t))\bar{y})$$

2.1.2 The political environment

Society is assumed to start in non-democracy at time $t = 0$. This means the elites, who constitute less than half of the population, control political decision making. In other words, the median voter who is poor is excluded from decision making. In the present setup, the only policy agenda that is determined through the political process is the level of redistribution. Therefore, the elites get to set their preferred tax rate and therefore determine the level of redistribution under non-democracy. Given the homogeneity of the elites, any positive tax will redistribute income away from the representative elite. Hence, the elites set $\tau = 0$ in non-democracy.

Even though the elites have dejure political power in a non-democratic status quo, the poor maintain defacto power to stage revolution whenever they find it feasible. If revolution is attempted, it will succeed leading to the poor expropriating all productive capacity in the economy. But revolution comes with a cost. It destroys a fraction μ of total income for all future periods. Hence, after revolution, a poor agent obtains a period return of $(1-\mu)\bar{y}/(1-\delta)$ forever. The elites lose everything after revolution for all future periods. Revolution is not always an imminent threat though. Its feasibility depends on factors such as the state of collective action among the poor at the beginning of each period. Let the cost of revolution, μ, capture the feasibility of it being staged such that $\mu = 1$ denotes no threat of revolution. If $\mu < 1$, there is some threat of revolution. Hence, the probability that $\mu < 1$ in any future period $t > 0$ is given by $\Pr(\mu_t < 1) = q$.

The elites may counter the threat of revolution in one of three distinct ways: they can promise to redistribute to the poor without giving up political power, they can voluntarily democratize, or they can use repression to maintain the status quo. Redistribution in non-democracy entails the setting by the elites of

a positive tax rate just enough to stave off the threat of revolution. Under this arrangement, the elites are free to reset the tax rate back to zero as soon as the threat of revolution recedes. Democratization means that the elites extend franchise to the poor rendering the median voter to set her most preferred tax rate, τ^p. Each of these potential forms of concession is judged against the feasibility of an option that seems to come more naturally to non-democratic elites, i.e. repression. I assume that if repression is launched, it will succeed in forestalling revolution. Nevertheless, repression imposes a cost, κ, on the period returns of both the elites and the poor.

Once democracy is installed, I assume it remains fully consolidated. But the elites can send their assets, therefore capital, away to other jurisdictions to avoid redistribution. The feasibility of capital flight depends on the external economic and financial environment that is assumed to be exogenous to what happens in the small-open economy considered in this setup. I assume that there are two possible states for international capital mobility revealed at the beginning of each period: conducive, ψ^H, and non-conducive, ψ^L. However, even when capital flight is feasible and the elites decide to move their capital out, they can do so only on the mobile portion of their assets. If capital flight happens, which I assume to imply the total exit of the elites from the domestic economy, the immobile portion of the asset endowment will be taken over by the poor. Hereafter, I will use 'capital flight' to refer to the complete relocation of the mobile portion of the human and physical asset endowment of the elites. Denote the immobile portion of the capital stock by $\phi \in (0, 1)$. I assume capital flight cannot be reversed. Therefore, the representative elite earns a fixed, external return on capital for all future periods following capital flight: $(1 - \phi)\hat{r}K/\delta$. A poor agent simply earns the average income with the leftover capital stock for all future periods: $(\phi K)^\theta (1 - \delta)^{1-\theta}/(1 - \delta)$.[1] I assume the external returns on capital are untaxed. To simplify the analysis by limiting the difference between the domestic economy and the alternative external economy to taxes only, the rate of return on capital is assumed to be the same in both cases, i.e. $\hat{r} = r$.

Given that society has been in non-democracy or democracy at time $t - 1$, the timing of events within a period at time t can be summarized as follows.

1. The state μ_t or ψ_t is revealed in non-democracy or democracy, respectively.

2. The elites set the tax rate if non-democracy; the poor set the tax rate if democracy.

3. In non-democracy, the elites decide whether to repress or democratize. In democracy, they decide whether to exit out or stay.

4. In non-democracy, the poor decide whether or not to stage a revolution if repression has not been launched already.

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[1] If the proportion of the asset endowment that is left behind by the elites is ϕ, the capital stock will be replenished proportionally to the amount of ϕK in all future periods following the exit.

5. Incomes are realized, consumption takes place and the period ends.

2.2 Analysis of the model

The strategic interaction between the elites and the poor is described as a dynamic game played over an infinite horizon. The solution concept I apply to characterize the equilibrium is pure strategy Markov Perfection. Accordingly, the strategies that are played by the agents depend only on the current state of the world regardless of what might have happened in the past. The state that is revealed at the beginning of each period, depending on whether society is in democracy or non-democracy, determines the best responses of each group of players to each other's actions. I begin analyzing the game by considering a period in which society is in democracy, denoted by D. Since democracy is always consolidated and capital flight is an absorbing state, it is analytically convenient to characterize the capital flight game under democracy first. I can then move on to define the democratization game under non-democracy given what the agents might expect to happen in democracy.

2.2.1 The capital flight game

In democracy, the stage game starts with the revelation of whether the economic environment is conducive for capital flight or not: $\psi \in \left\{ \psi^H, \psi^L \right\}$. When the state is ψ^L, there is no threat of capital flight. Therefore, the median voter sets her most preferred tax rate without any constraint. The perpetual returns to the poor and the elites, as seen from the current state at time t, are given by the following Bellman equation:

$$V^i(D, \psi^L) = y^i + \tau^p(\bar{y} - y^i) - c(\tau^p)\bar{y} + \beta[sV^i(\psi^H) + (1-s)V^i(D, \psi^L)] \quad (4)$$

for $i = p, r$. The term in square brackets in (4) represents the continuation payoff to the agent in the future as a function of the probability that the economic environment will be conducive for capital flight: $\Pr(\psi = \psi^H) = s$. The median voter tax rate is the rate that maximizes the pre-period indirect utility of the median (poor) agent:

$$\tau^p = \arg \max_{\tau} \left\{ y^p + \tau(\bar{y} - y^p) - c(\tau)\bar{y} \right\}$$

The first-order condition of the optimization problem, after applying the definition of y^p given in equation (2), gives,

$$c'^p) = \frac{\theta - \delta}{1 - \delta} \quad (5)$$

According to (5), in the case of perfect equality, $\theta = \delta$, the median voter sets $\tau^p = 0$. The median voter tax increases with inequality.

We now consider the payoff to agent i when the environment is conducive for capital mobility.

$$V^i(D, \psi^H, \tau^D) = y^i + \tau^D(\bar{y} - y^i) - c(\tau^D)\bar{y} + \beta[sV^i(\psi^H, \tau^D) + (1-s)V^i(D, \psi^L)]$$

where $\tau^D \leq \tau^p$.

First, note that a conducive environment for capital mobility does not automatically lead to capital flight. For capital flight to be an imminent threat, the portion of capital that is immobile should be small enough compared to the tax burden imposed by the median voter. This threshold is given by the following equation:

$$\phi^* = \frac{1}{\theta}[\tau^p(\theta - \delta) + \delta c(\tau^p)] \tag{6}$$

Proof: for proof of equation (6) see Appendix A.

If $\phi \geq \phi^*$, the elites will never find exit a viable strategy since too much of their capital stock is immobile. Therefore, the median voter always sets her most preferred tax rate and the democratic status quo will be maintained with no capital flight. Note that ϕ^* increases with inequality making less egalitarian democracies more prone to capital flight.

What happens if $\phi < \phi^*$? When the threat of capital flight becomes imminent, the poor may consider to concede some reduction in taxes to retain capital in the domestic economy. The poor will be willing to set the tax rate $\tau^D < \tau^p$ when the state is ψ^H as long as $V^p(D, \psi^H, \tau^D) \geq V^p(D, \phi)$. This means their expected payoff after staving off the threat of capital flight by reducing the tax rate should be at least as high as what they could have gotten in all future periods if the elites had exited with their capital. This condition is summarized by the threshold level of immobile capital that should remain in the economy to offset the loss from capital flight:

$$\hat{\phi} = [1 - \theta + (1 - \beta(1-s))(\tau^D(\theta - \delta) - (1-\delta)c(\tau^D)) + \tag{7}$$
$$\beta(1-s)(\tau^p(\theta - \delta) - (1-\delta)c(\tau^p))]^{\frac{1}{\theta}}$$

Proof: for proof of equation (7) see Appendix A.

Equation (7) stipulates that, in order for the poor to ignore the threat of capital flight, the amount of capital that will be left behind should be at least as large as the return for the poor from a concessionary regime weighted by the inverse of the productivity of capital.[2] High inequality reduces the willingness of the poor to offer concession for two reasons. First, a large θ lowers the share of income of the poor in a concessionary regime, thereby raising the temptation to take over whatever small wealth that might be left behind following the exit of elites. Second, the implied high return on capital in more unequal economies increases the benefit the poor might expect to gain from a given portion of leftover capital.

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[2] Due to the Cobb-Douglas specification of the production function, the productivity of capital is the same as the share of income of capital, θ.

As long as the portion of capital that will be left behind in the event of exit is lower than $\hat{\phi}$, the poor will offer to set a lower tax rate than what is optimal for the median voter whenever the state is ψ^H. The poor could go as far as setting $\tau^D = 0$ if the total productivity of the immobile portion of the capital stock is too small to offset the gain from maintaining the status quo (i.e. $\phi^\theta \leq 1 - \theta + \beta(1-s)(\tau^p(\theta - \delta) - (1-\delta)c(\tau^p)))$. The concessionary tax rate that is required to avert exit increases with ϕ. The equilibrium relationship between the degree of capital mobility and the concessionary tax rate is given in the following equation:

$$\tilde{\phi} = \frac{1}{\theta}[(1 - \beta(1-s)(\tau^D(\theta - \delta) + \delta c(\tau^D)) + \tag{8}$$
$$\beta(1-s)(\tau^p(\theta - \delta) + \delta c(\tau^p))]$$

However, no amount of concession might be sufficient to bar the elites from exiting if so much of the capital stock in the economy is mobile. In such situation, even $\tau^D = 0$ fails to stop capital flight because the poor cannot commit credibly to sustain the zero-tax regime once the external environment becomes less conducive for capital mobility. The threshold level of ϕ which demarcates the parameter space where no tax concession would work is given by the following:

$$\phi^{**} = \frac{1}{\theta}[\beta(1-s)(\tau^p(\theta - \delta) + \delta c(\tau^p))] \tag{9}$$

Proof: for proof of equation (9) see Appendix A

If $\phi < \phi^{**}$, the elites will exit the domestic economy as soon as the external environment for capital mobility switches to conducive. Note that $\phi^{**} = \beta(1 - s)\phi^*$. Hence, for a given ϕ^*, the higher the probability of a conducive external environment for capital mobility, the wider the room for concession.

Fig. 1 plots equations (7) and (8) for given values of τ^D and different levels of θ.[3] The area between the respective curves of $\hat{\phi}$ and $\tilde{\phi}$ where $\hat{\phi} > \tilde{\phi}$ represents the parameter space in which concession can prevent exit. A visual inspection of the area between lines $\hat{\phi}_{0.9}$ and $\tilde{\phi}_{0.9}$ (for which $\theta = 0.9$) as opposed to the one between lines $\hat{\phi}_{0.3}$ and $\tilde{\phi}_{0.3}$ (for which $\theta = 0.3$) demonstrates that higher inequality reduces the chance of averting capital flight with tax concession.

The following proposition characterizes the equilibrium of the capital flight game under democracy.

Proposition 1: *Suppose society is already in democracy. There is a unique Markov perfect equilibrium in the capital flight game such that:*

If $\phi \geq \phi^*$, the entire capital stock remains immobile. The poor set their most preferred tax rate $\tau = \tau^p$ all the time.

If $\phi < \phi^*$, the threat of capital flight is imminent. Therefore, if $\phi^{**} \leq \phi < \phi^*$ and $\phi \leq \hat{\phi}$, the poor set the concessionary tax rate $\tau = \tau^D < \tau^p$ whenever the state switches to $\psi = \psi^H$.

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[3]The parameter values used in this particular specification are: $\delta = 0.1$, $\beta = 0.05$, $s = 0.5$. Taxation is assumed to have the following cost function: $c(\tau) = \tau^{1.5}$.

If $\phi < \phi^{**}$ or $\phi^* > \phi > \hat{\phi}$, either or both parties are not ready to give/accept tax concessions. Therefore, the first time the state switches to $\psi = \psi^H$ capital flight takes place and the elites exit the domestic economy.

The next subsection takes the capital flight game in to account to define the democratization game which precedes it. Then it will be straight forward to characterize the overall equilibrium by connecting the sequential parts of the games through backward induction.

2.2.2 The democratization game

When society starts in non-democracy, the elites have de jure political power; therefore they move first. The stochastic state that influences the corresponding strategies of the poor and the elites is the threat of revolution. When there is no threat of revolution, $\mu = 1$, the status quo is maintained and the elites set the tax rate of $\tau = 0$. As soon as $\mu < 1$, revolution becomes a threat. In this case, first, the poor compare their potential payoff after revolution with their payoff under the default option of living in non-democracy with no redistribution forever.[4] Accordingly, revolution is a viable option as long as $V^p(R, \mu < 1) > V^p(N, \mu < 1, \tau = 0)$, where R and N denote the post-revolution and non-democracy regimes respectively. Therefore, the revolution constraint is binding if the following condition holds:

$$\frac{(1 - \mu)\bar{y}}{(1 - \delta)(1 - \beta)} > \frac{(1 - \theta)\bar{y}}{(1 - \delta)(1 - \beta)} \Rightarrow \theta > \mu \qquad (10)$$

The second inequality in (10) provides an intuitive interpretation of the revolution constraint: in highly unequal societies the prospect of the destruction that could be caused by revolution is less of an inhibition in the face of an impending revolution. The question of democratization is relevant only when $\theta > \mu$. Therefore, I restrict the analysis to the part of the parameter space where the inequality in (10) holds.

It is already defined in the setup of the current model that the elites have three options to preempt revolution: redistribution in non-democracy, democratization, or repression. Let me assume for the time being that repression is off the table. The viability of redistribution through a higher tax, $\tau = \tau^N > 0$, in non-democracy depends on whether it can actually prevent revolution. The payoff to the elites from a strategy of redistribution without democratization is given by:

$$
\begin{aligned}
V^r(N, \mu \ \ < \ \ 1, \tau = \tau^N > 0) = y^r + \tau^N(\bar{y} - y^r) - c(\tau^N) + \qquad (11) \\
\beta\left[qV^r(N, \mu < 1, \tau = \tau^N > 0) + (1 - q)V^r(N, \mu = 1, \tau = 0)\right]
\end{aligned}
$$

The maximum tax rate that the elites can set and which could potentially stop revolution is the median-voter tax rate $\tau = \tau^p$. Therefore as long as $V^p(N, \mu <$

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[4]The relevant strategy applies forever because I have restricted the set of equilibrium strategies to pure strategy equilibrium. That means, if the players adopt a certain strategy once, they play that strategy forever as long as the state remains the same.

$1, \tau = \tau^p) < V^p(R, \mu < 1)$, no amount of redistribution short of political democratization could stop revolution. The threshold cost of revolution less than which no redistribution will be effective is given by the following equation:

$$\mu^* = \theta - (1 - \beta(1-q))(\tau^p(\theta - \delta) - (1-\delta)c(\tau^p)) \tag{12}$$

Proof: for proof of equation (12) see Appendix A

According to (12), the greater the inequality, the more imminent revolution will be. On the contrary, if the poor expect to have more chances to threaten revolution in the future, they are more likely to forgo revolution today in favor of securing more frequent redistribution in the future in non-democracy.

Now I focus on the parameter space where $\mu \geq \mu^*$ such that revolution can be averted by redistribution. If there was no exit option through capital flight after democratization (as in the original AR framework), democratization would be a strictly dominated strategy that the elites resort to only if redistribution in non-democracy is not going to stop revolution. In the current setup, however, due to the availability of an exit option whenever the environment is conducive for capital mobility, the elites compare the payoff from redistribution under the status quo $(V^r(N, \mu < 1, \tau = \tau^N > 0))$ with the expected payoff after democratization $(V^r(D, \psi^L))$. I assume the period when democratization takes place is always characterized by non-conducive environment for capital mobility. The elites choose to preempt the threat of revolution with redistribution or democratization by comparing the returns from either option, given the potential mobility of their asset endowments.

Based on the capital mobility thresholds given in equations (6), (7), (9), if $\phi \geq \phi^*$, the elites always prefer redistribution in non-democracy to democratization because, under democracy, exit is not feasible and they will be subjected to maximum taxation in all future periods. If $\phi \in [\phi^{**}, \phi^*)$ and $\phi \leq \hat{\phi}$, the elites compare the level of probabilistic concession they should offer under the status quo with the level of probabilistic concession they could get after democratization by threatening exit. Accordingly, they would rather redistribute under the status quo than democratize if the following condition holds:

$$[(1-\beta(1-q))(\tau^N(\delta-\theta)-\delta c(\tau^N))] < \left[\begin{array}{c} ((1-\beta(1-S)(\tau^D(\delta-\theta)-\delta c(\tau^D))+ \\ (\beta(1-S)(\tau^p(\delta-\theta)-\delta c(\tau^p)) \end{array} \right] \tag{13}$$

The expression in (13) can be written more intuitively as follows,

*[(Discounted probability of revolution threat) × (Tax burden due to redistribution] is **less than** [(Discounted probability of threat of capital flight) × (Tax burden after concession under democracy) + (Discounted probability of capital immobility) × (Full median-voter tax burden)]*

If $\phi < \phi^{**}$ or $\phi^* > \phi > \hat{\phi}$, the relevant comparison will be between the respective payoff from redistribution under the status quo and capital flight following democratization. If the following expression is binding, the elites will offer to redistribute under the status quo rather than democratize:

$$[(1-\beta(1-s))(1-\beta(1-q))(\tau^N(\delta-\theta)-\delta c(\tau^N))-(1-\beta)(\tau^p(\delta-\theta)-\delta c(\tau^p))] > -\phi\beta s\theta \tag{14}$$

Let me now bring the repression option back to the table. Once the pairwise comparison has been made between redistribution and democratization for a given degree of capital mobility, the selected strategy will be compared with repression. If the elites choose to repress the first time that the revolution threat is present, due to our assumption of pure strategy, they will employ repression whenever $\mu < 1$. Therefore, the payoff to the elites when they keep revolution at bay with repression is given by the following:

$$V^r(N, \mu < 1, O|\kappa) = \frac{y^r - (1 - \beta(1-q))\kappa y^r}{1 - \beta} \tag{15}$$

where O denotes the use of repression in non-democracy (N).

Note that the returns from repression are subject to the cost, κ, of repression. When redistribution is preferred to democratization to avert revolution, the elites compare equations (11) and (15). What might make repression unattractive is the cost it entails for the period it is exercised. Hence, the threshold level of cost that leaves the elites indifferent between repression and redistribution is found by equating (11) to (15):

$$\tilde{\kappa} = \frac{1}{\theta}(\delta c(\tau^N) - \tau^N(\delta - \theta)) \tag{16}$$

The choice between repression and democratization depends on what exit options the elites may be faced with in democracy. Therefore, the threshold cost of repression that makes the elites indifferent between repression and democratization should be defined for each scenario of capital mobility. Accordingly, if $\phi \geq \phi^*$ and the elites expect to have no exit out of the domestic economy once democracy is installed, they choose between (15) and the payoff from living under median-voter democracy forever ($V^r(D, \psi^L, \tau^p)$. Such comparison leads to a new threshold cost of repression:

$$\kappa^* = \frac{1}{\theta(1 - \beta(1-q))}(\delta c(\tau^p) - \tau^p(\delta - \theta)) \tag{17}$$

If $\phi^{**} < \phi \leq \phi^*$ and $\phi \leq \hat{\phi}$, repression will be compared against the payoff from a democratic regime with probable concession from the poor ($V^r(D, \psi^L, \tau^D \leq \tau^p)$). Concession is offered only to the extent that it stops the elites from exiting with their capital such that the relevant threshold cost of repression depends on the degree of capital immobility $\phi \in [\phi^{**}, \phi^*)$:

$$\begin{aligned}
\kappa(\phi) &= \frac{1}{\theta(1 - \beta(1-q))}[(1 - \beta(1-s))(\delta c(\tau^D) - \tau^D(\delta - \theta)) + \quad (18) \\
&\quad \beta(1-s)(\delta c(\tau^p) - \tau^p(\delta - \theta))]
\end{aligned}$$

If $\phi < \phi^{**}$ or $\phi^* > \phi > \hat{\phi}$, the elites compare the returns from repression with their payoff from democracy with potential capital flight, leading to the following threshold value of κ:

$$\kappa^{**} = \frac{\beta s\phi\theta - (1 - \beta)(\tau^p(\delta - \theta) - \delta c(\tau^p))}{\theta(1 - \beta(1-s))(1 - \beta(1-q))} \tag{19}$$

I now combine the results of the capital flight game summarized in Proposition 1 with the results of the democratization game laid out in the preceding analysis to characterize the political transition equilibrium in the following proposition.

Proposition 2: *Assuming that society starts in non-democracy, there is a unique Markov perfect equilibrium in the democratization game such that:*

If $\mu \geq \mu^*$ and $\phi \geq \phi^*$ or (13) or (14) is binding, society remains in non-democracy. In periods when $\mu = 1$, the status quo is maintained with no redistribution. When $\mu^* < \mu < 1$ and $\kappa \geq \tilde{\kappa}$, redistribution occurs at $\tau = \tau^N > 0$. When $\mu^* < \mu < 1$ and $\kappa < \tilde{\kappa}$, repression is used to preempt revolution.

If $\mu < \mu^*$ or if $\mu \geq \mu^*$ and (13) or (14) does not hold, democratization becomes an option. Given democratization is an option:

1. *If $\phi \geq \phi^*$ and $\kappa \geq \kappa^*$, democracy is accompanied by stable capital stock tied up to the domestic economy forever. The poor set their most preferred tax rate $\tau = \tau^p$ all the time.*

2. *If $\phi^{**} < \phi \leq \phi^*$ and $\kappa \geq \kappa(\phi)$ democracy remains prone to capital flight. Therefore, as long as $\phi \leq \hat{\phi}$, the poor set the concessionary tax rate $\tau = \tau^D < \tau^p$ whenever the state switches to $\psi = \psi^H$.*

3. *If $\phi < \phi^{**}$ or $\phi^* > \phi > \hat{\phi}$, and $\kappa \geq \kappa^{**}$, democracy is established with the prospect of capital flight. Therefore, the first time the state switches to $\psi = \psi^H$ capital flight takes place and the elites exit the domestic economy.*

4. *If $\phi \geq \phi^*$ and $\kappa < \kappa^*$, or if $\phi^{**} < \phi \leq \phi^*$ and $\phi \leq \hat{\phi}$ and $\kappa < \kappa(\phi)$, or if $\phi < \phi^{**}$ or $\phi^* > \phi > \hat{\phi}$, and $\kappa < \kappa^{**}$, repression is used to avert revolution whenever $\mu < 1$.*

2.3 Discussion of key results

Recall that the policy space in the above theoretical framework is one-dimensional in the sense that redistribution is the only policy issue that is assumed to be relevant. Accordingly, the level of inequality is a critical variable influencing the political equilibrium. The revolution constraint in (10) depends crucially on inequality. For a given level of the cost of revolution, μ, there is a critical threshold of inequality, θ^*, below which revolution is not a threat on the elites. Democracy does not emerge in such societies as long as they remain sufficiently egalitarian. As θ increases, revolution becomes more appealing for the poor. Differentiating the various critical thresholds for redistribution in non-democracy and capital flight in democracy with respect to inequality gives the following results;

$$\frac{\partial \mu^*}{\partial \theta} > 0; \; \frac{\partial \phi^*}{\partial \theta} > 0; \; \frac{\partial \phi^{**}}{\partial \theta} > 0 \tag{20}$$

The above set of expressions implies that higher inequality makes revolution and capital flight more appealing for the respective parties. However, at the

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same time, an increase in inequality also reduces the relative cost of repression by raising the critical threshold values of κ:

$$\frac{\partial \tilde{\kappa}}{\partial \theta} > 0; \; \frac{\partial \kappa^*}{\partial \theta} > 0; \; \frac{\partial \kappa(\phi)}{\partial \theta} > 0; \; \frac{\partial \kappa^{**}}{\partial \theta} > 0 \qquad (21)$$

Hence, in line with the well-established result in AR (2001, 2006), inequality features a non-monotonic relationship with democracy whereby moderate levels of inequality induce democratization.

The present framework predicts that democracy emerges more often than in the AR framework because democratization may become a feasible option even when redistribution is sufficient to avert revolution. To see how a marginal increase in inequality that would not make qualitative difference in the absence of the capital flight option may potentially bring about democracy in the present framework, let us consider the following scenario. Suppose inequality increases from θ_1 to θ_2 where $\phi \geq \phi^*(\theta_1)$ and $\phi < \phi^*(\theta_2)$. Assume $\mu \geq \mu^*(\theta_2) > \mu^*(\theta_1)$. The revolution threshold could increase more slowly as a result of a rise in inequality than the exit threshold due to a relatively high probability of future revolt (i.e. q) which is not part of the calculation of ϕ. This means the elites can still maintain the status quo by redistributing whenever revolution becomes a threat. However, since the rise in inequality will have already made capital flight feasible, democratization becomes a viable strategy regardless of whether redistribution might work or not. In this case, the actual equilibrium depends on the relative frequency of revolutionary threat compared to the occurrence of conducive external environment for capital flight.

Note also that $\frac{\partial \phi^*}{\partial \theta} > \frac{\partial \phi^{**}}{\partial \theta}$.[5] Meaning, a rise in inequality does not make capital flight inevitable as much as it makes it feasible. If the external economic environment is expected to be conducive for capital mobility most of the time (i.e. s is close to 1), an increase in inequality barely affects the lower threshold of the parameter space over which tax concession can help to avert capital flight. In this case, the hike in inequality affects the actual equilibrium through its effect on the willingness of the poor to extend tax concession. Figure 1 illustrates the relationship between inequality and the feasibility of tax concession as a strategy to stave off capital flight. Overall, high inequality makes democracy more vulnerable to capital flight. But that is not necessarily because the elites are not ready to accept concessions; it might as well be because the poor are not willing to offer them in the first place.

I have shown above that the threshold values of capital mobility can be subject to the level of inequality. However, the equilibrium occurrence of capital flight is mainly a function of two variables: the ratio of liquid assets, represented by $1 - \phi$, and the conduciveness of the external environment for capital mobility, captured by s. Practically, a decline in ϕ in a given economy could mean increased monetization and growth of the financial sector. All other factors

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[5] $\frac{\partial \phi^*}{\partial \theta} = \frac{1}{\theta^2} \left(\delta \tau^p(\theta) - \delta c(\tau^p(\theta)) + (\theta^2 - \theta + \theta \delta c'(\tau^p(\theta))) \frac{\partial \tau(\theta)}{\partial \theta} \right)$, whereas $\frac{\partial \phi^{**}}{\partial \theta} = \frac{1}{\theta^2} \beta(1-s) \left(\delta \tau^p(\theta) - \delta c(\tau^p(\theta)) + (\theta^2 - \theta + \theta \delta c'(\tau^p(\theta))) \frac{\partial \tau(\theta)}{\partial \theta} \right)$

remaining constant, a decline in the ratio of illiquid assets renders democratization more likely by providing the elites with a guarantee against extreme redistribution. But the nature of the ensuing democracy, whether it will be subject to capital flight or not, features a non-monotonic relationship with the ratio of illiquid assets. In order to see this, let us limit our focus to cases where $\mu < \mu^*$ and $\kappa \geq \kappa^*$ such that redistribution is not enough to avert revolution and repression is too costly. As long as $\phi \geq \phi^*$, democracy exists with no capital flight. As the ratio of illiquid assets declines to eventually fall below ϕ^*, the elites begin to threaten exit in order to get tax concessions. However, unless the ratio of illiquid assets drops below $\hat{\phi}$, the poor will not be willing to offer concession. This is because the poor will be better off by letting the elites exit and owning the illiquid portion of the asset endowment which is not too low to force them to offer concessions. Therefore, democracy will be subjected to capital flight in the range where $\phi \in (\hat{\phi}, \phi^*)$. However, if the ratio of illiquid assets jumps below $\hat{\phi}$ but remains above ϕ^{**}, then the poor in democracy will be willing and able to avoid capital flight through tax concessions.

The conduciveness of the external environment for capital mobility can be readily represented by the level of financial integration of the global economy or regional blocs. Since global financial integration is captured in a time-effect that uniformly applies to all economies, cross-sectional differences in s could be interpreted as differences in effectiveness of the enforcement of capital controls.

3 South Africa's political transition[6]

3.1 One country, two systems: historical narratives

South Africa before 1994 can best be described as two countries wrapped in one. Particularly, after the creation of the union in 1910, the white polity was growing more democratic. On the contrary, Africans were becoming more disenfranchised with the imposition of systematic land alienation and discriminatory labor laws. Ironically, the deterioration in race relations was accompanied by further advances in democratization among the white community culminating in the coming to power of the Pact government in 1924. Being a coalition of white trade unions and white farmers, the Pact government moved swiftly to control the occupational mobility of African labor. The 1924 elections were a manifestation of the prominent cleavage between white capital and the white working class. Therefore, there are at least three groups - white capitalists, white working class and Africans - that are relevant to the analysis of the political economy of South Africa in the first half of the 20th century. This means further reflection on the dynamics between the three groups is needed before the two-group model presented in the previous sections could be applied to explain South Africa's political transition.

On the political front, the relationship between the white and African communities can be described using the standard two-group model (of non-democracy)

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[6] The sources of the data used in this section are listed in Appendix B.

because all whites were enfranchised while Africans were not. However, the white 'elites' are not homogenous economically. This heterogeneity would warrant redistribution within the democratic white polity. Practically, redistribution was achieved not by taxing white capital explicitly. It was rather achieved by repressing African labor. The average ratio of unskilled to skilled wage in South Africa in 1935 was about 0.13 for industry and gold mines. The same ratio in the United Kingdom for all male wage-earners in the same year was 0.69 (Feinstein, 2005). Although the direct cost of redistribution was borne by African labor, white capital in industry was taxed implicitly through the deadweight loss resulting from having to pay higher wages to no more efficient white labor.

The installation of Apartheid in 1948 can be seen as the climax of the attempts of the white working class to foreclose the participation of African labor in the growing urban economy. Table 1 shows that the share of white employment in industry was declining through the 1930s and 1940s while, on the contrary, the share of industry in the economy was growing. Apparently, there was divergence in the preferences of white capitalists and the white working class in terms of the use of African labor in industry. That is why the faster pace of modernization in the post-World War II era called for a stricter means to enforce collective action among the white polity. That is one of the main reasons why Apartheid was instituted.

For the world economy in general, the period between the end of World War II and the onset of the oil crisis in the early 1970s was an era of robust economic expansion. Output across all sectors of the South African economy grew during that period. Particularly, manufacturing real value added grew sixfold between 1948 and 1974. The apartheid edifice insured that most of the benefit of the growth remained in the white polity. Moreover, the share of income of the top one percent of the population declined from 22.1 percent in 1948 to 12.9 percent in 1971 (Alvaredo and Atkinson, 2010). These developments demonstrate that a great deal of the benefit of the boom accrued to the white middle-class which normally consists of white labor, white farmers and the bureaucracy. On ethnic dimensions as well, that particular period witnessed a rapid increase in capital accumulation among the Afrikaner segment of the white polity (Lipton, 1985).

In addition to the boost to the incomes of the white working class and capital accumulation in manufacturing, the post-war period was marked with substantial expansion in tertiary education in South Africa. As Fig. 2 shows, the number of degrees awarded each year in the white university system more than tripled in the two decades between 1954 and 1974. The number of degrees in the African university system also grew from 104 in 1960 to 691 in 1974. However, the bias towards the white community was palpable. As of 1970, almost 97 percent of degrees awarded in the South African tertiary education system were issued by universities intended for just 17 percent of the population.

The peculiarly important impact of the rise in the human capital of the white community comes from the fact that it changes the preference structure of the white working class. This claim, of course, is grounded on two assumptions. First, it is assumed that the number of degrees that were earned by the white

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working class was at least proportional to the size of the group. Second, it is assumed that there is complementarity between human capital and labor in the South African economy. Accordingly, the preference of the white community for highly discriminatory labor policies changes as its human capital stock expands (see Lowenberg (1989) for econometric evidence). This development aligns the preferences of the growing white middle class with that of the white capitalist class. This implies that the aversion of the white 'political elites' to full democracy emanates more from fear of redistribution under democracy than the urge to maintain labor marker privileges. Therefore, after the mid-1970s, most of the political economy features of South Africa can be claimed to have become amenable to analysis using the two-group model of political transition.

3.2 Explaining the transition: analytic-narrative application of the model

This subsection combines a cursory exploration of the relevant statistics and a brief review of the historical narratives to shed light on the path of the political transition in South Africa in 1994. By doing so, I aim to find empirical representations of the relevant equilibrium and the key parameters determining political transition in the theoretical model presented in section two. Table 2 provides a list of the parameters of the model which are deemed to be relevant in South Africa's transition along with a list of the corresponding empirical proxies. To start with the bigger picture, the regime type of South Africa (as a single polity) before 1994 was non-democracy. But, practically, democracy is hardly a dichotomous indicator. Even if universal franchise is not extended - as was the case in South Africa before 1994 - there could be latent movements with respect to the democratic frontier in terms of de jure political and civil rights. Accordingly, the index of political and civil rights depicted in Fig. 3 shows the variable 'depth' of the non-democratic equilibrium in South Africa before the 1990s. The dive that the rights index took around 1948 and its further decline through the 1950s shows how deeply undemocratic South Africa became after the National Party took power.

Whether or not non-democracy is sustained by repression, according to the theoretical model, depends on the cost of revolution as well as the cost of repression. The bar graph in Fig. 3 displays an index of political instability. If there is political instability and the rights index is low, it means non-democracy is maintained using repression. For instability to be there, there should first be a threat of revolution; and that threat should be met with some form of repression. I take the rate of school enrollment of the African population to be a proxy for the probability of revolution.[7] When more Africans are educated, they will be able to mobilize collective action more efficiently, thereby raising

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[7] The role of schooling in promoting political consciousness is one of the major tenets of modernization theory (see, for example, Lipset 1960). Recent evidence suggests that the Arab Spring revolts in North Africa and the Middle East were mainly driven by the rise of educational opportunities in spite of lack prospects of productive employment for the youths (Campante and Chor, 2012).

the threat of revolution. The nature of the existing equilibrium, therefore, is determined by the nexus between de-jure rights, education of the African population and the level of political instability. In South Africa's case, the cost of repression may be captured by the ex-post loss of foreign direct investment due to the ensuing instability or by external sanctions. In the theoretical model, the level of inequality is shown to be the central determinant of the type of political regime. In comparative terms, South Africa has always been a highly unequal country. In 1914, the top one percent of the population was earning more than 22 percent of total income. Hence, at a basic level it can be maintained that non-democracy in South Africa coexisted with income inequality. However, the causality of the relationship between regime type and inequality, as can be seen in the discussion below, is less determinate.

I use the two watershed moments in the history of the Apartheid regime to divide the sample period (in Fig. 3) in three phases. The first watershed moment is the Sharpeville massacre in 1960 which claimed the lives of 69 African protestors. The second watershed moment is the Soweto uprising of 1976.

Phase one: In Fig. 3, the period before 1960 is denoted as Phase one. The value of the average African income as percentage of the average white income (AWI) is the closest indicator that could be found to approximate the inequality parameter (θ) in the theoretical model. With 69 percent of the population (i.e. Africans) earning just a little over eight percent of what the 19 percent (i.e. whites) earned, South Africa was a highly unequal place during Phase one. Therefore, the deterioration of the rights index could be seen as the emergence of a more undemocratic equilibrium in response to high inequality. Much of the deterioration is accounted by Apartheid segregation laws which were intended to lower the concentration of the African population in urban areas. The segregation was partly aimed at reducing the revolution threat (by lowering q). Apart from the revolution threat, the white working class was also keen on avoiding potential competition from cheaper African labor in case of desegregation. The less-endogenous proxy of the threat of revolution, as indicated above, is the education of the African population. Although it was increasing gradually, the rate of school enrollment of the African population was not high enough to make mass revolts feasible in Phase one. The moderate level of political instability that occurred in the 1950s was caused by preemptive repression waged in the form of the enforcement of such laws as the Suppression of Communism Act. All in all, Phase one could be considered an equilibrium characterized by low revolution threat, moderate repression and deteriorating rights.

Phase two: The Sharpeville massacre marked the beginning of a mutually reinforcing escalation of revolts and repression. On the one hand, the likelihood of revolution was increasing with the gradually climbing number of educated Africans and the unraveling of colonialism in most parts of the African continent. On the other hand, the cost of repression was not so high. This is because the newly-growing Afrikaner capitalist class (represented by conglomerates like Sanlam and Rambrandt Group) were ready to buy out the assets of foreign investors who might be withdrawing due to fear of instability (Feinstein, 2005). The rights index declined further in Phase two until it bottomed out towards the

end of the 1960s. This outcome implies that repression proved an effective tool to sustain non-democracy in this period. In the theoretical model, redistribution in non-democracy is shown to be the alternative to repression to maintain the status quo. Given the increasing inequality signified by a lower AWI value in Phase two, redistribution can be ruled out as a means that might have been used to sustain non-democracy in Phase two. The increase in inequality that was mostly caused by the benefit of the boom years accruing disproportionately to the white population indicates that inequality can hardly be exogenous to the political system. In summary, Phase two can be characterized as high revolution threat - high repression - low rights equilibrium.

Phase three: The symbolism of the Soweto uprising to the overall anti-apartheid resistance lies in the fact that it was initiated by students. Fig. 3 shows that the uprising in 1976 was preceded by a rapid increase in the enrollment of Africans to schools. Particularly, one of the unintended effects of the segregated school system happened to be forging a new sense of collective identity. This led to a more radical form of political consciousness in urban schools instead of the ethnocentric consciousness that was common in rural areas (Glaser, 1994). This has contributed to a better chance of revolution. On the contrary, the cost of repression might have increased for two reasons. First, due to the global economic slowdown of the 1970s, the potential cost of a loss of foreign direct investment has increased. Second, in the aftermath of the Soweto uprising, the international hostility to apartheid had intensified leading to various sanctions. Hence, the massive spike in political instability that is observed in the second half of the 1980s is mostly driven by the relative ease of organizing revolution. As repression was becoming very costly, there must have been some form of 'redistribution' given the share of income of the African population has increased in Phase three. The redistribution was not achieved through the regular fiscal mechanism though. Rather, it was executed through raising the real wages of African workers through the 1970s.[8] "By 1976 average real earnings for African workers in manufacturing were almost 40 percent higher than in 1970" (Feinstein, 2005, pp. 231). The slight improvement in income inequality was followed by advancement in de-jure rights towards the second half of the 1980s which would culminate in democratization. Accordingly, Phase three can be characterized as high revolution threat - moderate repression - moderate redistribution - improving rights equilibrium.

The confluence of rising cost of repression and higher chance of revolution in Phase 3 of the apartheid era indicates that political liberalization was becoming more likely towards the end of the 1980s. But what sort of exit options would the white population have to ward off extreme redistribution in the event of democratization? According to the theoretical model, the degree of capital mobility determines whether the elites could threaten exit after democratization in order to acquire tax concession. Such threat is credible only so far as the

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[8] "...In 1971, Theo Gerdener, Minister of the Interior, expressed anxiety about low black wages and instructed the Public Service Commission to prepare a report on how to close the wide wage gap in the public service, warning that 'such gigantic differences in living standards...would lead to murder and violence"' (Lipton, 1985, pp. 65).

external environment is conducive for capital mobility. Moreover, the poor offer concession if the amount of immobile capital is too low and if inequality is not too high.

I use the Feldstein-Horioka (FH) coefficient of capital mobility provided in Taylor (1996) as an indicator of the conduciveness of the external environment for capital mobility.[9] The lower the FH coefficient, the more conducive is the global environment for capital mobility. Fig. 4 shows that capital became considerably more mobile across national borders in the 1980s compared to, particularly, the 1940s.[10] This means Apartheid was instituted in an era that is known for the lowest level of global capital mobility since the mid-19th century. From the point of view of the white elites in the second half of the 1980s, the prospect of more conducive global environment for capital mobility would be even stronger after eventual democratization given the triumph of capitalism as a dominant ideology around the same time. This implies that the probability of threatening exit (represented by s in the theoretical model) was sufficiently high for South Africa of the 1990s.

Regardless of the global environment, the key issue for a small open economy such as South Africa, however, would be how much of the total wealth in the economy is potentially mobile. The proxy I use to measure the mobile portion of capital (captured by the parameter $(1 - \phi)$ in the model) for South Africa is the value-added of finance and related sectors in the economy compared to the total fixed capital stock tied up in traditional sectors such as agriculture and mining. This particular indicator is chosen to measure capital mobility because wealth in finance and other tertiary sectors is assumed to be more ready to flee the country than capital sunk in agriculture or mining. Fig. 4 shows that the relative importance of the finance and related sectors began increasing substantially in the 1960s. The level of the value added of those sectors reached nearly half of the total capital stock in agriculture and mining towards the beginning of the 1970s. That is about the same time as the business community in South Africa began entertaining the idea of reform. The ratio of value-added in finance did not increase after that period until the end of the 1980s.[11] This trend of tapering growth in the ratio demonstrates that the potential of capital mobility was just enough to secure tax concessions after eventual democratization. But it was

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[9] The Feldstein-Horioka approach employs saving-investment correlations to measure capital mobility indirectly. "Feldstein and Horioka reasoned that, in a world of perfectly mobile capital, domestic savings would seek out the highest returns in the world capital market independent of local investment demand, and by the same token the world capital market would cater to domestic investment needs independent of domestic savings supply" (Taylor, 1996, pp. 6). Therefore, in a world of perfect capital mobility, domestic savings and investment would be uncorrelated.

[10] The set of coefficients I use in this paper are estimated using cross-sectional data from 12 countries that are believed to be representative of global capital markets in the 20th century: Argentina, Australia, Canada, Denmark, France, Germany, Italy, Japan, Norway, Sweden, U.K., U.S.A.

[11] The ratio of value-added in finance and related sectors to the capital stock in agriculture and mining declined slightly in the second half of the 1970s most likely because gold reserves became increasingly more difficult to extract and the process became capital intensive as a result.

not high enough to cause a mass exit of capital regardless of concessions (the parameter space where $\phi < \phi^{**}$ in the model). Recall that the extent to which the poor would be willing to offer concession after democratization depends on the level of inequality ($\hat{\phi}$ is a function of θ). It can be seen in Fig. 3 that AWI increased from 7.45 to 8.5 in Phase 3. Therefore it can be claimed that Africans became potentially more willing to concede lower taxes in response to a threat of exit as the 1990s approached.

As far as exit is concerned, it is not only financial capital that has the potential to flee. Human capital can flee too in anticipation of extreme redistribution. Accordingly, changes in the educational attainment of the white population could be taken as an indicator of potential human capital mobility. Fig. 2 displays the steep increase in the number of degrees awarded by white universities in the 1960s and 1970s. When it comes to overall school enrollment, which might be more relevant for the rural and working class white populations than the number of degrees, Fig. 5 shows that the gross enrollment rate was already reasonably high as early as the beginning of the apartheid era. But the output-adjusted enrollment rate for whites was only 69 percent of the gross enrollment rate in 1948.[12] That means there was substantial gap between the quantity and the quality of the white human capital. The output-adjusted enrollment rate had grown to 93 percent of the gross enrollment rate by 1990. In contrast, the output-adjusted enrollment rate for the African population was negative before 1970. The quality of human capital of the African population has been improving ever since albeit slowly and erratically. Therefore, human capital inequality had somehow declined towards the second half of the 1980s. Given the trend of the improvement in human capital inequality, Africans could be expected to offer a certain level of concession on taxes levied on the return to human capital after democratization.

Finally, in order to have a more complete understanding of the democratic equilibrium in South Africa, it is worthwhile to have an overview of the post-democratization outcomes in terms of capital mobility and brain drain. This helps to determine, at least tentatively, whether the kind of equilibrium that the theoretical model predicts based on the initial conditions has actually prevailed in South Africa after 1994. In terms of capital flow, foreign direct investment as percentage of GDP increased substantially after the transition although it has become markedly volatile (see Fig. 6). That volatility seems to have been aided by the capital account liberalization in 1995. Portfolio investment also saw a mixture of periodic increases and sharp declines throughout the first decade of the 2000s. But there was no indication of systematic capital flight similar to the one that took place since the beginning of the 1980s until the transition was completed in the mid-1990s. Similarly, the percentage of South African emigrants with tertiary education in the six major receiving countries declined to 6.6 percent in 1995 from its peak of 19 percent in 1980.[13] Hence, it is reasonable

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[12] The output-adjusted enrollment rate is calculated by subtracting the matriculation fail rate from the enrollment rate.

[13] An alternative dataset covering all OECD destination countries puts the rate of emigration of tertiary educated South African at 4.95 percent in 1995 as opposed to 18.22 percent in

to conclude that democratization in South Africa has not been accompanied by the mass exit of the elites. Considering the fact that overall inequality has actually increased after democratization, the political regime in post-1994 South Africa can be described as a democratic equilibrium characterized by tax concessions supported by a credible threat of exit.[14]

4   Conclusion

In this paper, I have introduced the exit option to the theory political transition formulated by Acemoglu and Robinson (2001, 2006). By doing so, I have tried to analyze the interaction between two of the most important socioeconomic phenomena in present day societies - income inequality and capital flight - in relation to democracy. The costs of revolution and repression are the basic parameters that determine whether a certain level of inequality is tolerable to sustain non-democracy. However, whether the elites have a viable exit option in the face of eventual redistribution under democracy influences their decision to repress or to democratize. The presence of an exit option for financial and human capital does not necessarily imply the prevalence of capital flight and brain drain following democratization. The existence of a credible threat might be sufficient to secure concessions from the majority in democracy, provided that the majority have the incentive to ward off capital flight.

The political transition in South Africa in 1994 is usually attributed to internal and external political pressure. However, there is strong economic dimension to how the political pressure played out in effecting regime change. The increase in the likelihood of revolution coupled with the rise in the cost of repression in the late 1970s and 1980s forced the political and economic elites to ponder the costs and benefits of democratization. The fact that the global economic space was becoming increasingly more conducive for capital mobility in the last quarter of the 20th century brought the exit option to the table. Moreover, the composition of the portfolio of the white elites was changing in favor of mobile assets. Given wage and human capital inequalities had declined slightly in the 1980s, the elites might have been convinced that a majority government would be willing to concede lower redistribution as long as there was a credible threat of exit. The pattern of capital flow and emigration in post-1994 South Africa seems to confirm that tax concession was indeed an integral part of the democratic bargain.

There are a few more innovations that could be introduced in future research on this area. First, despite the recognition in section three of this paper that labor repression was a centerpiece of the Apartheid regime, the theoretical model works with the assumption that factors of production are paid their marginal

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1980. Although this rate has climbed to 12.10 percent as of 2010, the post-1994 rates can still be considered to be much lower than the pre-1990 rates (Source: Institute for Employment Research, Brain Drain Dataset).

[14] Given inequality in South Africa is to a large extent a result of skewed patterns of accumulation in the past, the fact that there is no outright expropriation of property or a wealth tax testifies to the level of concessions offered by the majority in the new democracy.

products. Although the key results of the present model do not crucially depend on this particular assumption, it would produce additional interesting results if labor repression was incorporated in the model. Second, a three-agent model would be more powerful in explaining the South African story than a two-agent model. Specifically, the pre-1994 period would be better portrayed with a distinction between the white capitalist class and the white working class. Equivalently, the post-1994 period would be better captured by a model that distinguishes between the African political elites and the African working class.

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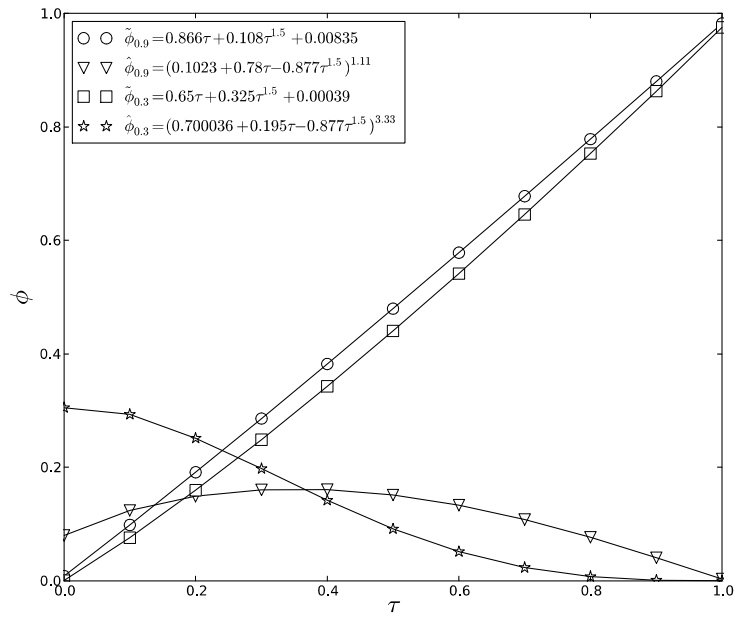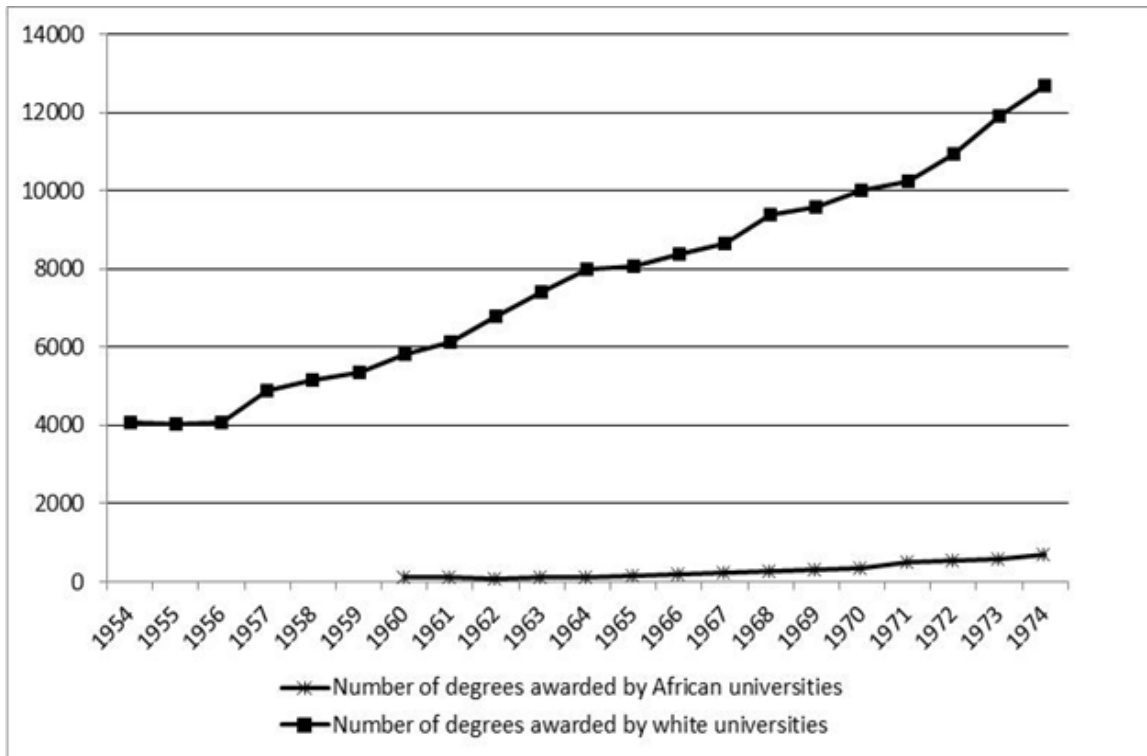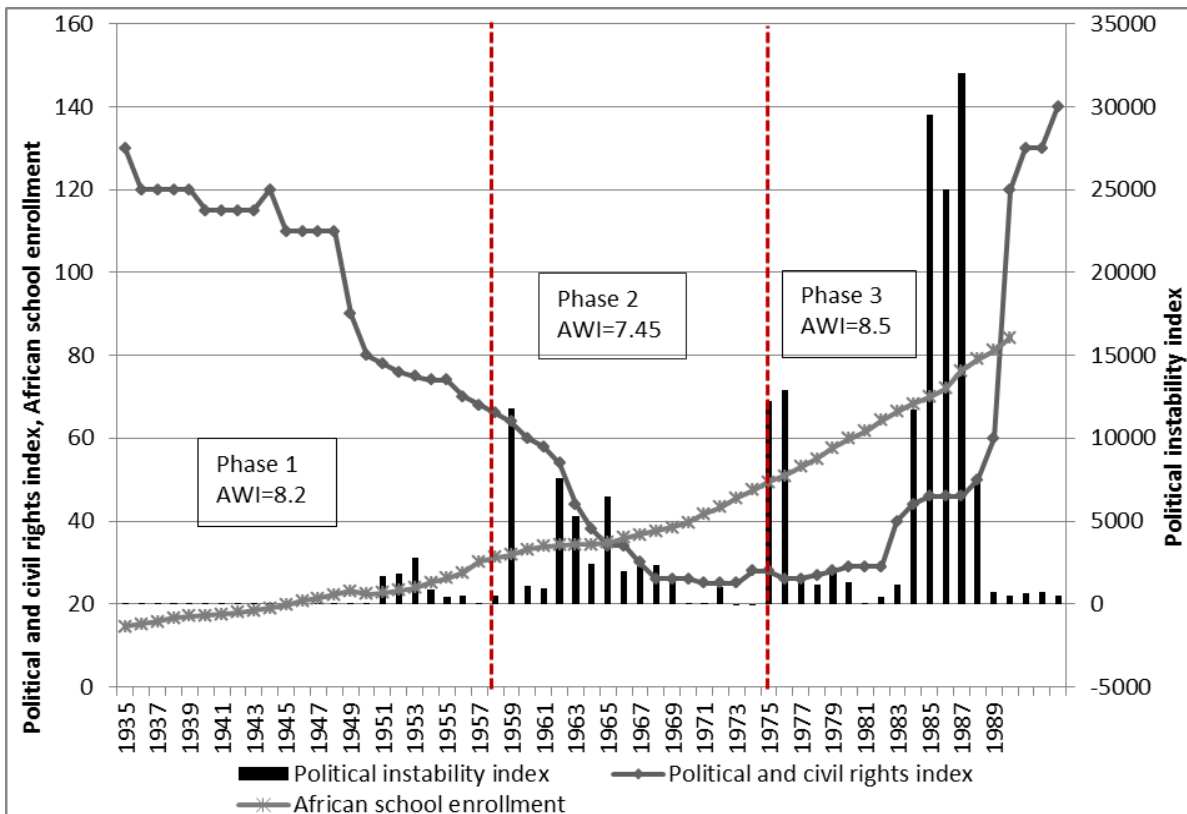
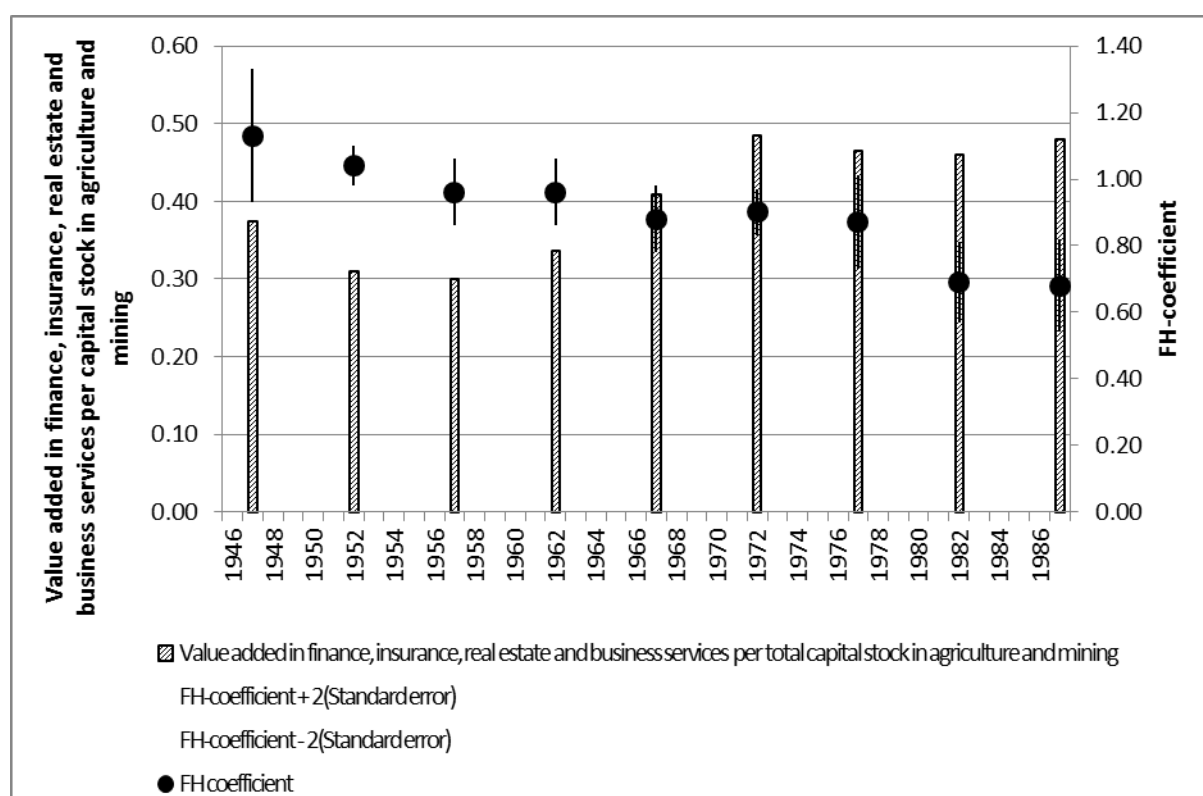Figure 1: Parameter space for tax concession at different levels of inequality

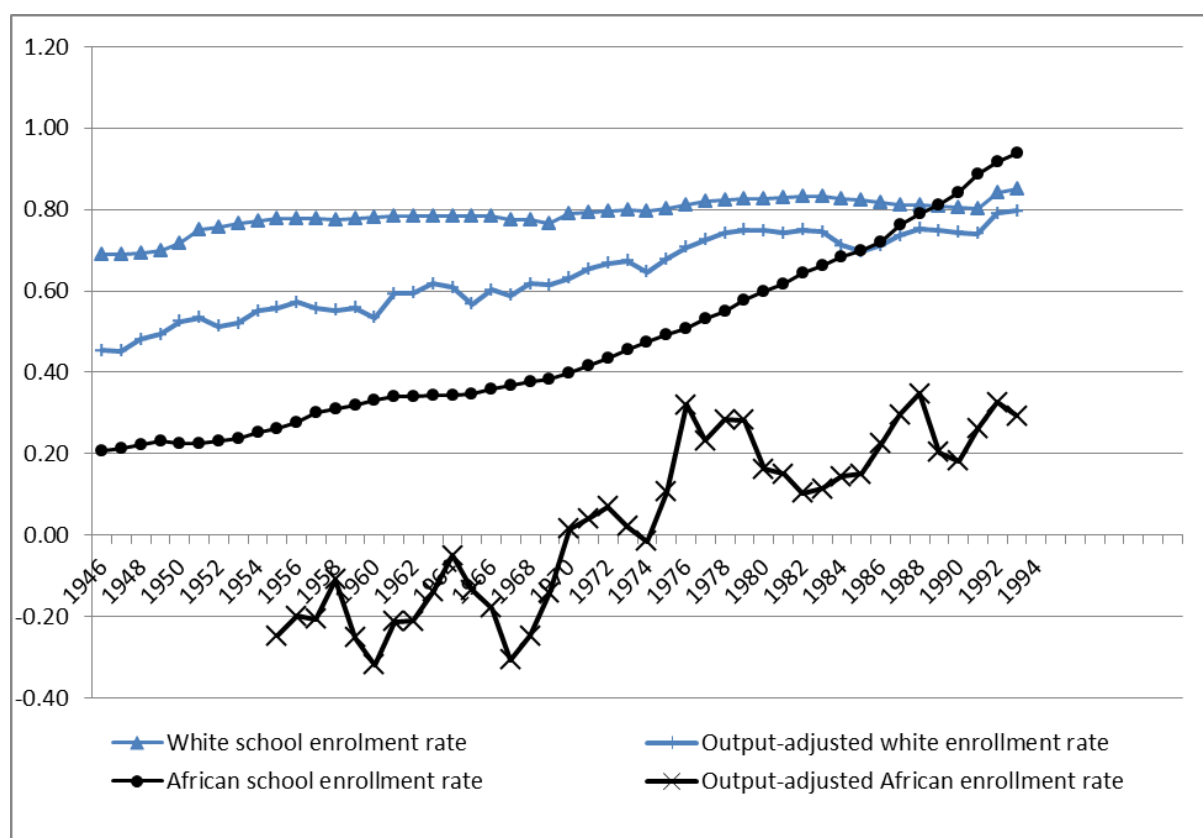## Figure 2: Number of university degrees by race group

Figure 3: Costs and outcomes of revolution and repression: political and civil rights, instability and African education
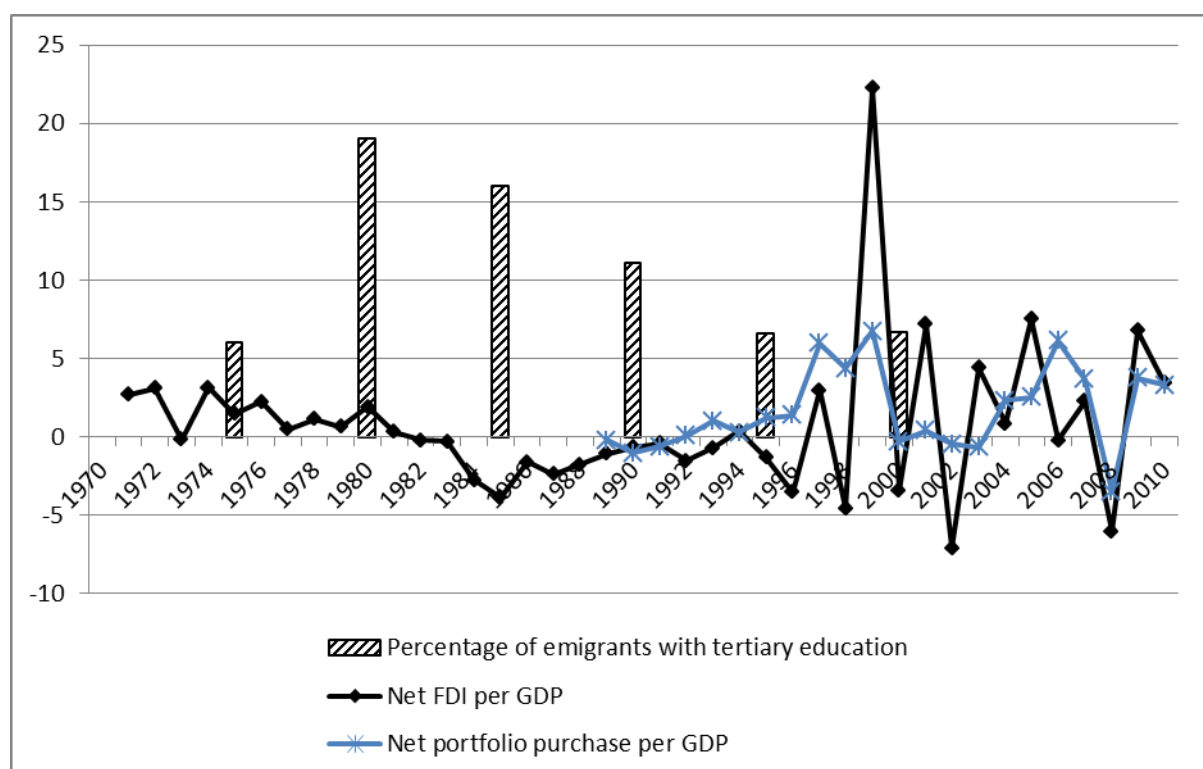
Figure 4: Global environment for capital mobility and ratio of potentially mobile capital in South Africa

Figure 5: Gross and output-adjusted school enrolment rates by race group

Figure 6: Capital flow and emigration in pre- and post-democratization periods

Table 1: Share of industry and white employment in the lead up to Apartheid

Year	Industry output as percentage of GDP	Percentage of white employment in industry
1929	12.4	41.6
1939	17.0	41.1
1948	23.3	34.1

Table 2: Summary of model parameters, empirical proxies and directions of movement over the three phases from 1948 to 1990

Parameter	Description	Empirical proxy	Direction of movement of parameter (Phase 2 taken as benchmark)		
			Phase-1 (1948-59)	Phase-2 (1960-75)	Phase-3 (1976-90)
θ	Income inequality	Average income of African population as percentage of average income of white population	_	0	_
q	Probability of revolution	School enrollment rate of African population	_	0	+
κ	Cost of repression	Ex-post FDI outflow, external sanctions	_	0	+
s	Probability of conducive external environment for capital mobility	FH-Coefficient	_	0	+
$(1-\phi)_1$	Ratio of mobile assets - financial	Value-added in finance, insurance, business services and real estate as percentage of total fixed capital in agriculture and mining	_	0	+
$(1-\phi)_2$	Ratio of mobile assets - human capital	Output-adjusted school enrollment rate of the white population	_	0	+

APPENDICES

Appendix A: Detailed proof of equations

Proof of equation (6)

The exit threshold ϕ^* is computed by comparing the external return to the elites in case of exit with the return under median-voter democracy subjected to the tax rate τ^P all the time. The elites exit if,

$$V^r(D,\phi) > V^r(D,\psi^L,\tau^P)$$

$$\Rightarrow \frac{(1-\phi)\hat{r}K}{\delta(1-\beta)} > \frac{1}{1-\beta}\left(\frac{rK}{\delta} + \tau^P(\bar{y} - \frac{rK}{\delta}) - c(\tau^P)\bar{y}\right)$$

Using the assumption $r = \bar{r}$ and the relationship between y^r and $\bar{y}$ given in (5), the critical threshold is shown to be,

$$\phi^* = \tfrac{1}{\theta}[\tau^P(\theta - \delta) + \delta c(\tau^P)].$$

Proof of equation (7)

The concession threshold $\hat{\phi}$ is determined by the following equation:

$$V^P(D,\psi^H,\tau^D) = V^P(D,\phi)$$

Solving for $\hat{\phi}$, we need to first come up with the reduced form expression for $V^P(D,\psi^H,\tau^D)$, which is given as:

$$V^P(D,\psi^H,\tau^D) = y^P + \tau^D(\bar{y} - y^i) - c(\tau^D)\bar{y} + \beta[sV^P(\psi^H,\tau^D) + (1-s)V^P(D,\psi^L)]$$

Using $V^P(D,\psi^L) = y^P + \tau^P(\bar{y} - y^P) - c(\tau^P)\bar{y} + \beta[sV^P(\psi^H) + (1-s)V^P(D,\psi^L)]$ and solving the two equations simultaneously, we find:

$$V^P(D,\psi^H,\tau^D) = \frac{y^P + (1-\beta(1-s))(\tau^D(\bar{y}-y^P) - c(\tau^D)\bar{y}) + \beta(1-s)(\tau^P(\bar{y}-y^P) - c(\tau^P)\bar{y})}{1-\beta}$$

The payoff to the poor in case of the absorbing state of capital flight is give as

$$V^P(D,\phi) = \frac{\phi K^\theta(1-\delta)^{1-\theta}}{(1-\delta)(1-\beta)}$$

Equating the above two expressions and solving for ϕ yields,

$$\hat{\phi} = [1 - \theta + (1-\beta(1-s))(\tau^D(\theta - \delta) - (1-\delta)c(\tau^D)) + \beta(1-s)(\tau^P(\theta - \delta) - (1-\delta)c(\tau^P))]^{\frac{1}{\theta}}.$$

Proof of equation (9)

The condition for the inevitability of capital flight is given by the following inequality:

$$V^r(D,\phi) > V^r(D,\psi^H,\tau=0) \ .$$

The return from a zero-tax concession regime (i.e. the second term in the above inequality)

can be written as $V^r(D,\psi^H,\tau=0) = \frac{1}{1-\beta}(\frac{rK}{\delta} + \beta(1-s)(\tau^P(\bar{y}-\frac{rK}{\delta}) - c(\tau^P)\bar{y}))$.

Using $V^r(D,\phi) = \frac{(1-\phi)\hat{r}K}{\delta(1-\beta)}$ and solving for ϕ, we find:

$$\phi^{**} = \frac{1}{\theta}[\beta(1-s)(\tau^P(\theta-\delta) + \delta c(\tau^P))].$$

Proof of equation (12)

The revolution threshold, μ^*, can be found by comparing the value function of redistribution

at the maximum rate, τ^P, with the return from revolution (i.e. $V^P(N,\mu<1,\tau=\tau^P)$ vs.

$V^P(R,\mu<1)$).

The first value function can be written as:

$$V^P(N,\mu<1,\tau=\tau^P) = y^P + \tau^P(\bar{y}-y^P) - c(\tau^P)\bar{y} + \beta[qV^P(N,\mu<1,\tau=\tau^P) + (1-q)V^P(N,\mu=1)]$$
$$\text{where,} \ V^P(N,\mu=1) = y^P + \beta[qV^P(N,\mu<1,\tau=\tau^P) + (1-q)V^P(N,\mu=1)]$$

Solving the above equations simultaneously, I find:

$$V^P(N,\mu<1,\tau=\tau^P) = \frac{y^P + (1-\beta(1-q))(\tau^P(\bar{y}-y^P) - c(\tau^P)\bar{y})}{1-\beta} \ .$$

On the other hand, $V^P(R,\mu<1)$ is given as the value function of the absorbing state of

revolution:

$$V^P(R,\mu<1) = \frac{(1-\mu)\bar{y}}{(1-\delta)(1-\beta)}$$

Equating the above two equations and applying the relationship between y^r and $\bar{y}$ given in

(5), the critical threshold is found to be,

$$\mu^* = \theta - (1-\beta(1-q))(\tau^P(\theta-\delta) - (1-\delta)c(\tau^P)).$$

Appendix B: Data source

Location	Variable	Source
Table 1	Industry output as percentage of GDP	Feinstein (2005)
Table 1	Percentage of white employment in industry	Feinstein (2005)
Figure 2	Number of degrees awarded by African universities	Fedderke et al. (2003)
Figure 2	Number of degrees awarded by white universities	Fedderke et al. (2003)
Figure 3	Average African income as percentage of average white income (AWI)	Leibbrandt et al. (2010)
Figure 3	Political instability index	Fedderke et al. (2001)
Figure 3	Political and civil rights index	Fedderke et al. (2001)
Figure 3 & Figure 5	African school enrollment rate	Fedderke et al. (2000)
Figure 4	Value added in finance, insurance, real estate and business services per total capital stock in agriculture and mining	South African Reserve Bank
Figure 4	FH-coefficient	Taylor (1996)
Figure 5	White school enrollment rate	Fedderke et al. (2000)
Figure 6	Percentage of emigrants with tertiary education	Defoort (2006)
Figure 6	Net FDI per GDP	South African Reserve Bank
Figure 6	Net portfolio purchase per GDP	South African Reserve Bank