Choosing Democracy

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October 27, 2000

Abstract

In an autocracy, the ruling elite allocates resources to unproductive contest activities in order to protect its power. This paper establishes that a flatter income distribution, and a slow–growing or shrinking capital stock, and a decrease in the relative size of the workforce increases the likelihood of a decision by the ruling elite to negotiate a transition to democracy. In a model of economic cooperation and political conflict, the losses from ceding control over the tax rate may be lower than the costs of defending minority privilege. These predictions are evaluated in the light of the South African and other recent transitions.

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INSTITUTIONAL CHOICE

In the recent period we have witnessed a widespread tendency for authoritarian governments to choose to terminate their rule, and negotiate a transition to democracy. Huntington's "third wave" flowed from Southern Europe in the 1970s, through the Southern Cone of Latin America in the early 1980s, into Eastern Europe in the late 1980s, and hit Africa in the early 1990s (Huntington 1991). By the end of 1994, fully 45% of sub-Saharan African countries had obtained the minimal attributes of democracy with most of these transitions occurring in the 5 years between 1989 and 1994 (Bratton 1997, p. 76).

Many of these transitions were the outcome of a process of bargaining and negotiation, in which competing groups forged pacts which governed the exercise of political power. While competing for political power and control over the design of new institutions, these groups simultaneously "co-operate" in the economic sphere, engaged in mutually beneficial market based exchange. This interaction in both the economic and political sphere suggests that political and economic outcomes are simultaneously determined, and that the institutional equilibrium outcome is often some form of democracy. This has reignited a fundamental interest in the process of democratization: how and when do elites decide to negotiate a transition to democracy? What are the crucial interactions between the political and economic spheres and how do they influence the decision to democratize?

This paper builds a simple model of the decision by a ruling elite to democratize. The elite, while holding onto power, faces the threat of an insurrection that may lead to expropriation of the elite's productive assets. As this conflict intensifies, protection of its political power may become prohibitively expensive. A transition to democracy may increase the degree of redistribution (away from the elite) but may be preferable to an expensive protracted power struggle. This decision to democratize is shown to be significantly influenced by the income distribution, the size of the capital stock available in the economy, and the relative sizes of the competing groups.

The predictions of the model are evaluated in the light of the South African and a number of other recent transitions to democracy.

DEMOCRATIZATION AND ECONOMIC CONDITIONS

The debate on the relationship between economic conditions (inequality in particular), and political regime change is deep and long-standing in political science. The major cleavage in theorizing transition divides those who argue that improved economic conditions induce regime transition, and those that view political regimes and the transitions between them as contingent on the strategic interaction by politically influential groups with differing institutional and resource constraints. That is, does democracy emerge "naturally" and impersonally as a consequence of growth and development, or does it arise instrumentally as an outcome of the inter-related decisions and actions of individuals and groups?

Lipset (1959) suggested that democracy is related to economic development, a process termed "modernization"[1]. The reduction in inequality was presumed to play an important role: "A society divided between a large impoverished mass and a small favored elite would result either in oligarchy (dictatorial rule of the small upper stratum) or in tyranny (popularly based dictatorship)" (p. 75). A larger middle class plays a mitigating role in moderating conflict; it is able to reward moderate and democratic parities and penalize extremist groups (p. 83), whereas an elongated pyramid income structure provides 'bleak' conditions for perpetuation of democracy" (p. 101). Huntington (1991) and Moore (1966) concur with the view that democracy is the product of growth and that concentrated inequalities make democracy difficult to establish and sustain. More recent structuralists such as Huber, Rueschmayer and Stephens (1993) argue the emergence of an organized working class and the weakening of the landlord classes is associated with democratization. The flattening of the income distribution means a balance of class power, and increased difficulty for elites to exclude them politically.

Rustow (1974) criticized this structural approach to democratization as being deterministic: no agent is active in bringing about the fall of autocracy and choosing to take actions in favor of democracy. In contrast to the passive view that transitions to democracy are determined by objective conditions, a later generation of scholars has focused on the choices made by elites. When conflicting elites *voluntarily* choose to negotiate, the outcome is often an agreement or "pact" which defines a set of rules that govern the exercise of power during the transition. Przeworski (1991), following O'Donnell and Schmitter (1986), argues that "all transitions to

democracy are negotiated;" democracy cannot be dictated – it emerges from bargaining (p. 80)[2].

This "negotiated transition" approach rejected Lipset's modernist view and with it, consideration of the income distribution[3]. There remains therefore a paradox: the modernists argue that democracy emerges as the income distribution flattens with development; the negotiated transition argument points to an increased susceptibility to democratization as capital accumulation slows (or a reverses), and if income distribution is relevant, democratization occurs when the distribution is inegalitarian.

This paper resolves this tension between these opposing views: both arguments are (partially) correct. It is the central proposition of this paper that a flatter income distribution ceteris paribus increases the likelihood of a negotiated transition from autocracy to democracy. A corollary concerns economic crisis: a slow growing or shrinking capital stock leads to an increased likelihood of democratic transition. Essentially, we provide a bidirectional link between the modernists' insistence on the importance of the flattening of the income distribution, with the negotiated transition view that individual decision–making and self-interested action determine the timing and nature of the democratic transition.

Inequality

A number of recent authors have addressed inequality as a determinant of regime change in the context of an elite faced with an insurrectionary threat. Acemoglu and Robinson (2000), in their analysis of the extension of the franchise in England and Germany in the 19th century, suggest that the only credible commitment to redistribute (in the form of an education subsidy) is to shift the identity of the median voter in the direction of the poor by extending the franchise. They focus on democracy as a commitment device (drawing on North and Weingast, 1989) to a redistributive scheme. Franchise extension occurs when inequality is large enough to make insurrection valuable to the poor (they redistribute by force), and therefore the revolutionary threat is made credible. High inequality leads to franchise extension. This view is altered somewhat in a later work (Acemoglu and Robinson 1999); highly unequal autocracies do not democratize; autocrats repress instead. Similarly, unequal democracies make the redistributive

burden of the rich severe, leading to the threat of a coup (led by the rich). Inequality leads to instability and away from democratization. In both of these papers, however, the threat of insurrection is exogenous, and there is no cost to either party of either launching a revolutionary attack or to defend against it. In this work, we focus on the costs of defending autocracy as a crucial element in the decision to democratize.[4]

Recent work by Feng and Zak (1999) addresses both the role of the income distribution and the growth of the capital stock and find some support for the modernization thesis. They test a model that predicts that higher incomes lead to greater political activism for civil liberties (a normal good). Higher incomes however, mean that the opportunity cost of revolutionary activities increases, leading to less political activity. If the wealth effect dominates the wage effect, (which is likely to occur as the economy grows richer and as income distribution becomes flatter), then there is a greater tendency for democratization. They find evidence that the transition to democracy is more likely the higher is per capita GDP, and the more equal is the distribution of wealth.

Results consistent with the notion that democratization occurs when income distributions are flatter are found by Bourguignon and Verdier (2000). If political participation depends on the level of education, and where the level of education has strong enough external effects (educating the poor is good for the productivity of the rich), then the rich may provide education to (some of) the poor (thereby increasing the political participation of the poor). Educating the poor increases the size political active class, however, and reduces the power of the elite. Education transfers are provided if the productivity gains are not wiped out by the anticipated further redistribution away from the rich. Hence redistribution and democratization occurs if the anticipated further redistribution is not too large, i.e. if the income differential between rich and poor is not that large. This result is similar in flavor to the model below: that a crucial cost to the transition is the degree of anticipated redistribution away from the rich after the transition.

A key distinction of the model presented below is that insurrection or revolution (and its deterrence) require resources that could otherwise have been put to productive use. The likelihood of a successful insurrection depends on the relative levels of resources dedicated to conflict, modelled as a contest [5]. The choice across regimes is made by an elite concerned about the costs of conflict relative to the gains from holding power.

THE CENTRAL PROPOSITION

Consider the choices to be made by the wealthy ruling minority: it computes the expected losses associated with a democratic transition. Given that the median voter is poor, the expected tax rate on wealth or income is expected to be higher under democracy. If there is a vast discrepancy in the levels of wealth, some minority wealth will be taxed away leaving a more equitable distribution as desired by the (poor) median voter. Hence a minority wealth holder will be willing to spend significantly to prevent a transition to democracy, and to ensure the stability of the autocratic status quo. If instead, the income distribution is flatter to begin with, the losses associated with a democratization will not be large. In such a scenario, the minority may decide that democratization would be preferred – the losses associated with a higher tax rate may be smaller than the costs of supporting the oligarchic bureaucracy.

What are the costs of holding on to power? While the minority may hold onto its wealth and avoid confiscation and redistribution while in power, they must, simultaneously, allocate part of this wealth to protecting themselves and the *status quo*. Expenditure on a police force (to ensure that the minorities' property rights remain secure), on a defense force (often used to control the movement and activities of the majority of the population and to protect vital assets against attack), on a bureaucracy (to manage complex laws governing ownership and control of productive assets, movement of its subjects, not to mention an implicit income redistribution device – sheltered employment for its ranks) are vital to protect the regime against claims on its wealth and from the demands for a transition.

Such an economy, under stress from internal conflict may find that continued contest is too expensive. The gain to the minority elite is the elimination of the need to dissipate resources on unproductive contest activities, even though control over the tax rate is conceded.

In periods of economic crisis, the capital stock (relative to the labor supply) shrinks; there is less for the elite to protect, and less resources are available for defending the regime. Transition then is the rational choice for the autocratic elite even at higher degrees of income inequality.

THE MODEL

The players in this game are an elite (indexed E) who own or control capital K (in the aggregate), and $L \geq 2$ identical workers (j), each of whom own a unit of labor[6]. The size of the elite is normalized to unity and all workers behave identically. The aggregate labor available is L, and the size of the population is $1 + L$.

The Economy

There is single consumption good that can be produced using one of two technologies. A market technology, with standard constant returns to scale $F^m(K, L^m)$, where K is the capital employed by the elite and L^m is the labor time allocated to market production by workers, and a non-market, "subsistence" technology $F^s(L^s) = L^s$, where L^s is the labor allocation to subsistence production. Of course, $L^m + L^s = L$. The units of the output are chosen such that its price is 1, and therefore the nominal wage is also 1. The elite receive the residual $R(K, L^m) = F(K, L^m) - L^m$ once the levels of L^m and K are chosen. Since the wage rate is fixed at 1, $R(K, L^m)$ can be interpreted as the ratio of elite to worker income. We will denote R (without arguments) to be the value of $R(K, L^m)$ when all resources are optimally employed.

Assumption 1 Per capita elite income is larger than per capita worker income when resources are fully employed, i.e. $R > 1$.

Utility for each of the players is a function of consumption of the produced good:

$$u_E(c_E, K) = c_E \text{ and } u_j(c_j, L_j) = c_j \text{ for } j = 1...L \tag{1}$$

Workers allocate all their labor, either to the firms owned by the elite or to the subsistence activity. The elite however, can employ their capital abroad (capital flight), and produce $\Pi(K)$ units of output when K units of capital are employed abroad. Again, denote Π (without arguments) to be the value of $\Pi(K)$ when all the elite's capital is employed abroad.

Assumption 2 $R > \Pi > 0$.

The return to capital domestically is higher (in gross terms) than that available abroad[7], both of which are positive.

Autocracy

Autocracy is characterized by a regime in which the elite maintains ownership and control of the accumulated wealth and income, but must allocate some portion of that income to protecting itself from attack. For example, resources can be spent on defense or the police. Similarly, workers allocate part of their resources to contest activities such as labor strikes, civil unrest, and other expropriative activities.

Aggregate expenditure on contest/protection/military by the elite is m, and by each worker j is n_j where m and n_j are measured in utility units. The aggregate allocation by all workers then is $N = \sum_{j=1}^{L} n_j$. Let $N_{-i} = \sum_{j \neq i} n_j$.

In addition, the autocratic elite place a second burden on the workers: the state enforces a tax on worker's earnings at rate a, and the revenues collected accrue entirely to the elite. The autocratic tax rate is bounded above by $\frac{1}{2}$.

In any period where autocracy is in place, the elite suffers the risk that the insurrection is successful, in which case two changes in the regime occur: Firstly, workers are no longer required to pay the autocratic tax, $(a = 0)$ and secondly, a fraction of the elite's resources is expropriated and is distributed uniformly among the worker population. We assume throughout this paper that the elite is expropriated entirely.

Under autocracy both workers and the elite choose a level of effort (how much capital K and labor L to allocate to productive activity) and a level of contest activity (m and n_j for $j = 1...L$). These choices are made before the outcome of the contest (whether the insurrection is successful or not) is known. Given m and N, define $p(m, N) = \Pr[\text{Insurrection Unsuccessful}]$, and require $p_m > 0$, $p_N < 0$, $p_{mm} < 0$ and $p_{NN} > 0$. For tractability, we will assume a specific form of $p:$

$$p = \frac{m}{m + N}$$

If the insurrection is unsuccessful, the utility for the elite is $U_E(c_E, K, m) = c_E - m$, and the budget constraint facing the elite is $c_E \leq R + aL$ (the sum of income earned from employing capital and applying the autocratic tax to labor). If there is an insurrection, the elite loses all the income associated both with the autocratic tax, and any income generated from production (expropriation is entire). Utility under an insurrection is $U_E(c_E, K, m) = 0$. Hence expected

utility for the elite is

$$U_E(K,m) = \frac{m}{m+N}(R + aL - m). \tag{2}$$

For any worker j, the utility when the insurrection is unsuccessful is $U_j(c_j, L_j) = c_j - n_j$ with a budget constraint of $c_j \leq 1 - a$; if the insurrection succeeds, the utility is the sum of the worker's effort and a share of the expropriated resources (less that which was dissipated in contest): $U_j(c_j, L_j) = (c_j - n_j) + \frac{1}{L}(R - m)$. Hence the expected utility for a worker is

$$U_j(L_j, n_j) = \frac{m}{m + N_{-j} + n_j}(1 - a - n_j) + \left(1 - \frac{m}{m + N_{-j} + n_j}\right)\left(1 - n_j + \frac{1}{L}(R - m)\right) \tag{3}$$

Nash Equilibrium to the Autocracy Game.—

Each player chooses the amount of labor or capital they plan to allocate to productive activities, and an amount of resources to be allocated to contest activity. If the elite earnings under autocracy exceed the effective rate that can be earned abroad, it will employ all its capital domestically. After production decisions are made, then contest allocations are determined. An equilibrium is $\left((K,m), \{(L,n_j)\}_{j=1}^{N}\right)$ where (K,m) and (L,n_j) maximize equations (2) and (3) respectively, taking the behavior of the other players as given. Notice that among the workers there is a collective action problem; each worker allocates resources to contest aware of the external effects of its allocation on the overall probability of an insurrection and on the contributions of the other workers. Relative to the first best, there is underallocation of contest effort. This of course will, in equilibrium, reduce the incentive to democratize.

Taking the first order conditions (with respect to m and n_j) and then restricting our attention to symmetric equilibria (applying $N = nL$), we obtain the reaction functions:

$$\begin{aligned} m(N; R, L, a) &= \sqrt{N(La + R + N)} - N \\ N(m; R, L, a) &= \frac{1}{\sqrt{L}}\sqrt{m(La + R - m)} - m \end{aligned} \tag{4}$$

We can plot these in (N, m) space, and we can find a unique intersection that describes the Nash equilibrium, $\left(\widetilde{N}, \widetilde{m}\right)$ to the autocracy game (Figure 1).

$[FIGURE\ 1HERE]$

Lemma 1 *In equilibrium the portion of each players' wealth allocated to contest is positively related to the degree of income inequality.*

Proof. The Nash equilibrium is found by solving (4) for m and N : $\left(\widetilde{m}, \widetilde{N}\right) = (q(L)(R+aL),$ $r(L)(R+aL))$, where $r(L) = \frac{1}{2}\left(\frac{2+L}{\sqrt{L(4+L)}} - 1\right)$ and $q(L) = \sqrt{r(L)(1+r(L))} - r(L)$, with $q(L) \in (0,1)$, $r(L) \in (0,1)$ $\forall L \geq 2$. ■

The equilibrium strategies are linear in the elite/worker income ratio R. In equilibrium, the deadweight loss of conflict is the sum of the resources dissipated by both sides, which is $(q(L) + r(L))(R + aL)$. These resources might otherwise have been allocated to consumption activities, which would be Pareto-preferred. This therefore is Zartman's (1991) "mutually hurting stalemate:" a Pareto-inferior Nash equilibrium to a game that is isomorphic to the "Prisoner's Dilemma".

As income inequality worsens, both players allocate more resources to contest in equilibrium. As R gets bigger, workers have more to gain from a successful insurrection, and equivalently, the elite has more to lose – each allocates more to contest, increasing the social inefficiency and resource dissipation under autocracy.

Substituting the equilibrium values of m and N into equation (2), the expected utility of the elites under autocracy is

$$EU^{E}_{Autocracy} = Q(L)(R + aL) \tag{5}$$

where $Q(L) = q(L)\frac{1-q(L)}{q(L)+r(L)} \in (0,1)$ $\forall L \geq 2$.

Democracy

Definitions of democracy abound in the literature. The element of the democratic system that is the focus here is the ability of the voters to require government to undertake a taxation and redistribution scheme. While democratic societies have many other attributes and institutional parameters, many of which may be unknown (*ex ante*) and are at least subject to negotiation during the transition, the primary concern for the elite contemplating a democratization is the loss of the power to tax (or prevent excessive taxation). Hence, the fear elites face when contemplating the transition is the risk that *ex post*, too small a slice of societal resources will be available to them in a democracy relative to that which they could protect under autocracy.

Under a democratic system, the government undertakes a policy of taxation–cum–redistribution. Each individual is taxed at rate $t \in (0,1)$ on income and receives in return a share of the gov-

ernment revenue $s \in (0,1)$. As in Meltzer and Richard (1981), we assume that all revenues are redistributed back to the population uniformly: all individuals receive the same slice of the pie. There are good reasons to assume lump sum transfers: simplicity and parsimony are always paramount; little is to be gained by considering more complex redistribution schemes. Lump sum transfers are also non-distortionary; individuals might modify their effort levels to avoid higher tax rates or lower redistribution rates, and we do not want the results of the model to depend on this strategic behavior[8].

The government's budget constraint then is $s(1+L) = t(R+L)$. The budget constraints now have this form: for the elite, $c^E = (1-t)R + s$ and for any individual worker $c^j = 1 - t + s$. Each player takes the tax rate as given when choosing their labor (or capital) supply, but does take into account the effect of their own labor supply decision on his or her own transfer. Since workers have no employment options that escape taxation, workers will offer all their labor at any tax rate less than 1. Recall, however, that the owners of capital can export their capital and produce Π. This outside employment possibility for capital puts an upper bound on the tax rate that a democratic government can impose. In particular, capital owners will employ all their capital domestically as long as $t < \frac{1+L}{L}\frac{R-\Pi}{R-1}$ which binds (i.e. $\frac{1+L}{L}\frac{R-\Pi}{R-1} < 1$) whenever $\Pi > \frac{R+L}{1+L}$. We can write that the workers' labor supply decision is independent of the tax rate; capital owners willingness to invest domestically is a function of the domestic tax rate. Hence R can be written as $R(t)$.

Define $t_K = \frac{1+L}{L}\frac{R-\Pi}{R-1}$; this is the maximal tax rate at which the elite would be willing to invest domestically.

Lemma 2 *The democratic tax rate* $t^D = \min(t_K, 1)$.

Proof. We assume that the median voter is a worker, W. Hence the median voter chooses a tax rate to maximize

$$U^{median} = c^W \text{ subject to } c^W = 1 - t + s \text{ and } s(1+L) = t(R(t)+L)$$

which is equivalent to solving

$$\max_t \left[1 - t + \frac{t}{1+L}(R(t)+L)\right]$$

The median voter is a worker; any worker will want capital-owners to invest and to tax them, while keeping the tax rate on the workers as low as possible. If $\Pi > \frac{R+L}{1+L}$, then the upper bound on the tax rate is t_K.

$$t_K = \arg\max_{t \leq t_K} \left[1 - t + \frac{t}{1+L} (R+L) \right]$$

The first order condition $-1 + (R+L) \frac{1}{1+L} = \frac{R-1}{1+L} > 0$ if and only if $R > 1$, that is if and only if per capita wealth of the elite is larger than any worker's, which follows from Assumption 1. If $\Pi \leq \frac{R+L}{1+L}$, then all capital is invested domestically and $1 = \arg\max_{t \leq 1} \left[1 - t + \frac{t}{1+L} (R+L) \right]$. ■

Complete expropriation by the workers of the capital owners does not happen under democracy: if the tax rate is too high, the elite will ship its capital abroad, shrinking the pie from which tax revenues are extracted. In most democracies, the majority poor do not, as a matter of course, tax the entire wealth of the minority rich (McGuire and Olson 1996). Nevertheless, if foreign returns are not high enough, the domestic democratic government can tax the entire earnings of the capital owners, an action tolerated by the owners of capital as long as their share of the government pie that is redistributed back to them is large enough.

Under autocracy, the elite set the autocratic tax rate a; any transition to democracy is characterized here by an increase in the tax rate from zero to t_K or 1 for the elite, and a change from a to t_K for workers. This captures the generally accepted phenomenon that as the franchise has been extended in the nineteenth and twentieth centuries to voters with relatively lower incomes, the size of government and the tax rates on the incomes of the rich rose (Meltzer and Richard 1981).

Note that if there is any threat of expropriation under democracy, the elite can export their capital; this may be a strong assumption, but is captures the well-understood notion that excessive takings by governments leads to an unwillingness by firms to invest. Expropriation leads to economic inactivity.

The returns to the elite from democracy are found by substituting the value of the democratic tax rate into the utility function of the elite under the tax-cum-redistribution scheme, to obtain

$$U^E_{Democracy} = \max \left(\Pi \,, \frac{R+L}{1+L} \right). \tag{6}$$

Define R^I such that $\Pi = \frac{R^I + L}{1+L}$, i.e. $R^I = \Pi (1+L) - L$, then we can write

$$U^E_{Democracy} = \begin{cases} \Pi & \text{for } R < R^I \\ \frac{R+L}{1+L} & \text{otherwise} \end{cases} \tag{7}$$

A SWITCH IN REGIMES

Consider now the game where at the beginning of the period, the minority regime is faced with a choice: democratize or not. If the decision is made to persist with autocracy, the autocracy game is played, and equation (5) establishes the expected payoff to the elite of $U^E_{Autocracy} = Q(L)(R + aL)$. Instead, if the regime chooses to democratize, the democracy game is then played, and equation (7) establishes payoff $U^E_{Democracy} = \max\left(\Pi\ , \frac{R+L}{1+L}\right)$.

These are plotted in Figure 2. Consider the utility of the elite under each regime as a function of the relative returns R.

[FIGURE 2 HERE]

The two defining characteristics of democracy are that redistribution occurs and there is no resource dissipation due to conflict. As a result, increased inequality in both regimes means higher welfare for the elite; yet this welfare rises more slowly under democracy, since redistribution grabs a share of the higher income of the elite. Notice that if $R = 0$, (capital receives no return), the autocrat's earnings are merely a share of the autocratic tax revenues; under democracy, low domestic income from capital means that capital owners export their capital and earn Π abroad.

Proposition 1 *There exists $R^* > 0$ such that $\forall R > R^*$, the elite prefers autocracy, and for $\forall R \leq R^*$, the elite prefers democracy.*

The proofs of the propositions are in the Appendix.

We have that autocracy dominates democracy (from the elite's point of view) whenever $R > R^*$, that is when income is inegalitarian. However, when the ratio of elite income to workers' income is below some threshold, the costs of contest exceed the losses from redistribution (net of the saving from not having to protect) and agreement to a shift in regime is possible.

The proof of Proposition 1 establishes that at R^*, the democratic tax rate is 1; there is complete expropriation of output and income by the state, and redistribution produces a uniform distribution of income. Yet at this value of R, the elite are just indifferent between democracy and

autocracy, and under democracy, the elite choose not to export their capital. Democratization can occur even when the elite expects a severe income tax.

In the interval $\left(R^I, R^*\right)$ the elite chooses to democratize, aware of the punitive tax rate that will be imposed. At values below R^I, the tax rate drops below 1 to prevent capital flight; the upper bound on the tax rate begins to bind.

Recall that $R = F\left(K, L^m\right) - L^m$, where L^m is chosen optimally given the capital stock K. In any autocracy, a fall in K may induce R to fall below the critical threshold R^*. Ceteris paribus, we can solve for the critical level of the capital stock below which the regime might switch. Define K^* as the K that satisfies $R^* = F\left(K^*, L^m\left(K^*\right)\right) - L^m\left(K^*\right)$.

Proposition 2 $\forall K > K^*$, *the elite prefers autocracy, and for* $\forall K \leq K^*$, *the elite prefers democracy.*

SOME COMPARATIVE STATICS ON R^*

A larger value of R^* would imply that for any $R > R^*$, a smaller fall in income inequality would be necessary to induce a transition. Consider effect of a decline in the autocratic tax rate and the size of the workforce relative to the elite:

Proposition 3 $\frac{\partial R^*}{\partial a} < 0$ *and* $\frac{\partial R^*}{\partial L} < 0$; $\frac{\partial K^*}{\partial a} < 0$ *and* $\frac{\partial K^*}{\partial L} < 0$

Lower tax compliance reduces the value to the elite of maintaining the autocratic state, increasing their willingness to undertake a transition.

The proposition also establishes the effects of demographics. As the size of the unrepresented workforce rises relative to the size of the elite there are a number of effects. Under autocracy, more workers means more autocratic tax revenues, and makes autocracy more valuable; the elite is willing to spend more to protect the regime. More workers also means more of a free rider problem among the workforce, and the overall allocation by workers to contest may fall, making autocracy cheaper to protect (if the free rider effect is large enough). Under democracy, on the other hand, more workers are better for everyone: more labor generates more output, and capital owners receive a share of that increased output. This last effect is dominated by the combined effects of the other two and a rise in the size of the workforce relative to the elite lowers the critical income threshold R^*.

THE POLITICAL ECONOMY OF THE SOUTH AFRICAN TRANSITION

In April, 1994, South Africa (SA) held its first election under universal franchise. Black South Africans[9]had not been able to vote for a candidate for national office[10]; white South Africans had not previously been able to vote for a party not entirely based in the whites-only constitutional regime. South Africa had been perceived by scholars and others as the *least likely* to democratize (Sisk, 1995). Unpredictability[11], the depth of its divisions, and its historical inequality all make it an interesting case for analysis. In this section we examine the data from the South African experience to evaluate the key predictions of the model: a transition to democracy is more likely to occur when the income distribution is flatter, when the capital stock is smaller, and when size of the workforce is larger.

The Players in the South African Transition

The process of political transition in South Africa has been studied at some length[12], and the debate has centered on whether the elite initiated the liberalization or merely responded to opposition pressure. Giliomee (1995) correctly argues that the regime was not forced to liberalize. The apartheid[13]regime was not under threat when President F.W. De Klerk formally initiated negotiations in 1989, and there was no serious internal division in the ruling elite. The ruling oligarchy carefully debated and decided on major policy shifts within its internal structures using a consensus principle and while a small proportion of Afrikaners defected to the right-wing parties through the 80s, they never formed a real threat to government hegemony.

By April of 1992, it was clear that the two principal players in the negotiations were the African National Congress (ANC) and the National Party (NP) government (Shapiro 1993). These two groups hammered out the essential elements of a deal in a “Record of Understanding” that was signed before the minor parties of the left and the right were readmitted to the Conference on a Democratic South Africa, the roundtable negotiating forum to plan the new constitution.

There were clearly other groups that were relevant in the transition. The government had to ensure that the military were pacified, and within the ANC, the moderate and the hardline wings were continually debating negotiation strategy and tactics. Other black groups such as Inkatha opposed the transition and significantly affected the form that it took. Our purpose here

is not to completely characterize the transition, nor claim that the only important players were the government and the ANC. The close focus of attention is the decision by the government to begin the negotiations in the first place.

The Botha Decade, 1979-89

P.W. Botha took over as Prime Minister on 28 September 1978 amidst the first signs of economic deterioration. As can be seen in Table 1[14], GDP growth slows to well below the historical average, while output, investment and employment growth all turn negative.

[TABLE 1 HERE]

The decade is eventful for South Africa: the new constitution of 1983 brings coloureds and Indians into a tricameral parliament. Massive black resistance and township unrest is generated in opposition to the new constitution (it excludes Africans, and other blacks dismiss it as an attempt at co-option), and is met by large-scale police and military crackdowns in 1985 and 1986 in the two "states of emergency" declared by the government. Black schools are boycotted, there is increased labor strike activity (both legal and illegal) through 1984 and 1985 and riot and unrest rocks Johannesburg and other major cities.

Income Distribution

Many observers of South African political economy have argued that apartheid served to enrich whites at the expense of blacks. Indeed, at the height of the apartheid era, South African income inequality was stark, and SA had one of the highest Gini coefficients in the world: 0.68 in 1975. Many authors have noted the dramatic rise in black/white income disparity over the apartheid period, especially up to 1970 (see McGrath (1990) for example).

[FIGURE 3 HERE]

Post 1970 the income distribution did however flatten, especially in the period leading up to the transition. While per capita GDP declined slightly over the decade leading up to 1990, the difference in the growth rates of white to black wages in the manufacturing sector is quite stark. Between 1975 and 1980, black real wages grew at a rate of 21.5% over the 5 year period, while white wages grew only 6.1% over the same period. The disparity in growth rates continued

through the 1980s, and even through the recession at the end of the decade where black wages continued to rise, while white wages fell (see Figure 3). In fact the ratio of white to black wage income per worker in the manufacturing sector declined steadily from 5.5 in the late 1960s, to 3.4 in 1992.

Measures of the Gini coefficient vary considerably depending on their source. Deininger and Squire (1996) report a steady Gini in SA through the first half of the 1980s reaching 0.51 in 1985. It then drops to 0.48 in 1987, not far from the 0.35-0.4 range of most Western economies. Abedian and Standish (1992) report a more dramatic decline from 0.57 in 1980 to the same 0.48 in 1987 (Figure 4).

Overall, income inequality appears to have lessened in the decade leading up to the transition, lending support to the proposition.

[FIGURE 4 HERE]

Capital Stock

Investment as a share of GDP trended upwards over the first 3 decades of the apartheid period, but dropped significantly in the 1980s. As Figure 5 (left axis) shows, investment fell from about 23.7% of GDP in 1981 to 12.3% of GDP in 1990. Table 1 confirms this trend: growth in real manufacturing investment turns negative in the period 1981-1986, after decades of positive growth. Similarly, the capital-labor ratio which had been rising steadily through the 1970s abruptly starts to decline from the start of the Botha decade and falls over the entire period (Figure 5, right axis).

Lower capital accumulation in the period immediately before the transition lowered both the wealth of the white elite and their incentive to protect their wealth from expropriation. The decline in the capital stock increased the probability of a decision to transit to a more democratic political structure. Once again the South African experience is consistent with the predictions of the model of the previous section.

[FIGURE 5 HERE]

Population Growth

According to the 1991 population census, South Africa's population was approximately 37.7 million[15], of which 28.4 million were African (75.3%), whites constituted 5.1 million (13.5%), 3.2 million were coloured (8.5%) and 1 million Indian (2.7%) (South African Institute of Race Relations various years). The African population was estimated to be growing at a rate above 3% per year in the 1980s, while white growth rates were below 1% (Bethlehem 1988). The ratio of the number of whites to blacks and Africans had therefore been steadily declining through the decades, as evident in Figure 6.

[FIGURE 6 HERE]

In South Africa over the apartheid period, the proportion of blacks to whites in the population had grown from approximately 4 in 1948 to 7 at the time of the transition. Transition occurred when the ratio of whites to blacks had fallen to a historical low. Unlike the effects of the income distribution and the capital stock, the demographic trends worked (in the context of the model) against the tendency to democratize.

GOVERNMENT POLICY AND SANCTIONS

What then induced the flattening of the income distribution in South Africa? The South African government undertook a series of adjustments to traditional apartheid during this period, substituting the "Grand Apartheid" of the Verwoedian[16]era with freer labor markets and other liberalizations[17]. The intended effect was to create a black middle class with a vested interest in the *status quo* which would provide skilled labor services to white owned industry. It would also shore up sagging domestic demand for produced goods in the face of shrinking world markets (due to sanctions on South African produced goods). A shortage of skilled labor in the economy had encouraged both the private and the public sector to invest in education and training programs for black South Africans, raising the income and wealth of blacks relative to whites. The effect, of course, was simply to flatten the income distribution, and instead of eliminating the pressure to democratize, it, paradoxically (at least to the South African government) made democratization more likely.

A second possible explanation for the flattening of the income distribution concerns the role of trade, technological and financial sanctions [18]. If trade sanctions hit the returns to capital-owners harder than the returns to labor-owners, then indeed, the income distribution could be expected to flatten. South Africa is largely an exporter of labor-intensive primary products (metals, minerals and agricultural products), and if the Stolper-Samuelson theorem is appropriate, then restrictions on South African exports harmed labor– more than capital–owners, blacks more than whites. Alternatively, if South African firms operate in imperfectly competitive world markets (such as those for diamonds and gold), and owned by whites, while blacks can find employment in the traded and non-traded sectors at the going wage with relative ease, then trade sanctions that restricted the export of South African goods hit profits, and the returns to capital fall. Employment in the traded sectors would shrink, but if the non-traded, or informal sectors were to pick up the slack (as in the dual labor market models used, for example in Findlay and Lundahl (1987)), the effect on black incomes would be small. In this scenario, trade sanctions could possibly work to lower white incomes and raise those of blacks.

The sanctions that were imposed were not exclusively on South African exports. There were restrictions on US and European exports to South Africa, and there was a debt crisis when access to the international credit markets was curtailed in 1986 as well. The inability to import capital goods to replace depreciating equipment ("technological" sanctions) lowered the return to capital as it became less productive; the inability to borrow on world markets also lowered the ability to invest in new plant and equipment. The effect was to lower the returns to whites, and as long as the employment effects on blacks were outweighed by the drop in white incomes, the income distribution is flattened.

OTHER CASES?

Does the approach adopted here shed light on the other cases of democratic transitions? While the model presented fits the details of the South African transition, the link between the flattening of the income distribution and democratic transition seems to emerge in a number of other cases. Consider the 27 democratic transitions between 1970 and 1990 that are the focus of Haggard and Kaufman's (1995) influential study. They date the transitions to the year in which the first

competitive elections are held[19]. The Haggard and Kaufman cases can be matched with income distribution data from the World Bank's Social Indicators of Development.

The World Bank data provide the proportion of total income held by the upper 20% of the population and the lowest 20% in any year in which a survey is taken. We consider here any country (of the 27) for which there are two surveys within the 15 years prior to the transition. Moreover, we restrict attention to those countries in which the latter of the two surveys is within a 4 year interval prior to the transition year. Table 2 summarizes the resulting 11 cases:

[TABLE 2 HERE]

If $T20_t^i$ (respectively $B20_t^i$) is the proportion of total income held by the upper 20% (respectively the bottom 20%) of the population in country i in year t, define $d_i = \frac{T20_t^i}{B20_t^i} - \frac{T20_\tau^i}{B20_\tau^i}$, for $t > \tau$. That is if the ratio $\frac{T20_t^i}{B20_t^i}$ is a measure of income inequality (the larger is this number the higher is the inequality), the difference d_i measures the change from year t to year τ. A negative value of d_i indicates a reduction in the degree of inequality over time in i or a flattening of the income distribution. Eight out of the eleven cases have negative signs, indicating a flattening of the income distribution in the period leading up to a democratic transition. Indeed the average value is negative $\left(\overline{d} = -0.95\right)$ indicating that in the years preceding a democratic transition, incomes have become more egalitarian.

The appropriate comparison is the set of years in which a survey was taken, and no democratic transition took place within 5 years of the survey date. From the same set of 27 countries, we look to the data for two surveys within 8 years of each other in pre-transitional states. Since surveys are rare, there are only 10 pairs of surveys in 8 non-democracies in the World Bank dataset. These data are presented in Table 3.

[TABLE 3 HERE]

Eight out of ten cases are positive, with an average change in the income ratio of $\overline{d} = 0.77$. The only negative cases are both in Hungary. Table 3 suggests that in countries that did not democratize within 5 years of a survey (and for which a previous survey took place), the income distribution was not likely to be flattening. In fact income distributions worsened on average.

Are these 2 averages different? A simple difference of two means test suggests that the two means are significantly different at the 95% level.

This data is suggestive; it is not a test of the hypothesis. It is clearly by no means a complete statistical analysis and ignores many variables (including the capital stock and the demographic variables). Nevertheless, this data is consistent with the predictions of the model. It suggests that with a better specified and more complete empirical investigation with data that runs to the end of the 1990s, the hypothesis may be verified in a robust manner. This is a matter for future research.

CONCLUSION

Throughout *Democracy in America*, Tocqueville argues that equality in social (and economic) conditions is a necessary prerequisite for the emergence and sustainability of democratic institutions. This paper lends support to this view: the flattening of the income distribution and a decline in capital accumulation increase the likelihood of an authoritarian elite choosing to negotiate a democratic transition. Moreover, it is established that both these factors reinforced each other in the case of the South African transition and hastened the process of democratization.

It is the active decision of the ruling elite to undertake negotiation after a thorough assessment of the alternatives: most likely a continued, costly, mutually destructive conflict. The elite relinquish control over the tax rate; as the income distribution flattens, the redistributive effect of the democratic tax is lessened – there is less to lose by democratizing. If the distribution of income is highly unequal, democracy means that the elite will lose much, and will prefer to fight on and protect itself from expropriation.

The elite in this model responds to changes in the economic conditions; yet to some degree, the elite has some influence over those conditions themselves. For instance, changes in the autocratic tax rate may have affected the distribution of income across the competing groups; or capital controls may have encouraged capital flight. Nevertheless, this is a model that links the underlying economic conditions with democratization.

While the conditions that sustain democracy are often very different (and sometimes run counter) to those necessary to initiate it, this paper does suggest that once a transition has occurred, its sustainability can be in question if the income distribution worsens during the early years of the fledgling democracy. Hence Huntington's "reverse wave[20]" can be generated by a

temporary worsening of income equality in countries that have recently undertaken a transition. In fact the policies necessary to reignite growth in transitional economies (liberalization of markets, lowering of fiscal debt etc.) may as an unavoidable by-product, act to worsen the income distribution. A possible test of the central hypothesis is therefore to see if a worsening of the income distribution occurs in the years prior to an authoritarian reversal[21].

The results of this paper are consistent with Geddes' (1995) observation that "institutions reflect the interests of those who devise them." The political transition in South Africa involved the change in the institutional design of government in a manner that serves the interests of both the ruling minority and the competing liberation movement. The choice to democratize is therefore endogenously determined after due consideration as to how the various institutional structures will affect the distribution of wealth and consumption possibilities. The choice of institution is therefore nested inside the larger game of production and resource allocation that determines who gets to consume what, and how much of the income is to be taxed away (Tsebelis 1990). Moreover, the institutions that are picked are not done so because they are "best" or "most efficient," but rather are chosen for their expected effect on the redistribution of wealth across society. The new institutions are chosen by the participants themselves, participants motivated by electoral and distributional concerns. Hence the process of transition is linked closely with expected outcomes of the democratization process.

APPENDIX

Proof of Proposition 1:

Proof. At $R^I = \Pi(1+L) - L$, $U^E_{Autocracy}\left(R^I\right) = Q\left(\Pi(1+L) - L(1+a)\right)$. If $\Pi < Q\left(\Pi(1+L) - L(1+a)\right)$ then $R^* = \frac{\Pi - QaL}{Q}$ or if $\Pi > Q\left(\Pi(1+L) - L(1+a)\right)$ then $R^* = L\frac{Qa(1+L)-1}{1-Q(1+L)}$. Suppose $\Pi < Q\left(\Pi(1+L) - L(1+a)\right)$, then $\Pi < \frac{-QL(1+a)}{(1-Q(1+L))}$. Now $1 < Q(L)(1+L)$ for all $L \geq 2$. Then $\Pi < 0$ which is not possible since $\Pi > 0$ by assumption 2. Hence $R^* = L\frac{Qa(1+L)-1}{1-Q(1+L)}$. Note that $R^* > 0$ since $a \leq \frac{1}{2} < \frac{1}{Q(L)(1+L)}$ for all $L \geq 2$. Then $EU^E_{Autocracy} \geq U^E_{Democracy}$ as $R \geq R^*$ and $EU^E_{Autocracy} < U^E_{Democracy}$ as $R < R^*$. ■

Proof of Proposition 2:

Proof. From Proposition 1, autocracy is preferred when $R \geq R^*$, i.e. when $F\left(K, L^m(K)\right) -$

$L^m(K) \geq L\frac{1-Qa(1+L)}{Q(1+L)-1}$. By the envelope theorem, $\frac{d}{dK}\left[F(K,L^m(K)) - L^m(K)\right] = F_K > 0$, so $F(K,L^m(K)) - L^m(K) \geq L\frac{1-Qa(1+L)}{Q(1+L)-1}$ iff $K \geq K^*$. ■

Proof of Proposition 3:

Proof. $\frac{\partial R^*}{\partial a} = L\frac{Q(L)(1+L)}{1-Q(L)(1+L)} < 0$ since $1 - Q(L)(1+L) < 0$ (see proof of Proposition 1) and $\frac{\partial R^*}{\partial L} = -La\frac{Q'(L)(1+L)+Q(L)}{Q(L)(1+L)-1} + \frac{1-aQ(L)(1+L)}{Q(L)(1+L)-1}\left(1 - L\frac{Q'(L)(1+L)+Q(L)}{Q(L)(1+L)-1}\right) < 0$ since $1 - aQ(L)(1+L) > 0$ (again see proof of Proposition 1) and computations establish that $1 - L\frac{Q'(L)(1+L)+Q(L)}{Q(L)(1+L)-1} < 0$ for all $L \geq 2$. Recalling that $R^* = F(K^*,L) - L$, implicit differentiation yields $\frac{\partial K^*}{\partial a} = \frac{1}{F_K}\frac{\partial R^*}{\partial a} < 0$ and $\frac{\partial K^*}{\partial L} = \frac{1}{F_K}\left(\frac{\partial R^*}{\partial L} - F_L - 1\right) < 0$. ■

NOTES

- Acknowledgements: The author is grateful to the National Science Foundation (#9709943), and the Zumberge Faculty Resarch and Innovation Fund at the University of Southern California for financing this research, to seminar particiapnts at the Latin American and Caribbean Economic Association Meetings, Buenos Aires; Public Choice Society, New Orleans; Southern Economic Association, Atlanta; Georgetown University; Boston College; Brown University; University of California - Los Angeles; University of California - Irvine; ITAM, Mexico City and the University of Southern California. Thanks are due to Ron Findlay who suggested I write on this subject, Herschel Grossman, Bill Kaempfer, Phil Keefer, Sunyuk Kim, Luisa Lambertini, Tony Lowenberg, John McLaren, Helen Milner, Jeff Nugent, Stergios Skaperdas, Paul Zak, and two anonymous referees.

1. See Przeworski and Limongi (1997) for a recent review, and critical analysis.

2. Haggard and Kaufman (1995) suggest that the economic conditions under which this bargaining takes place are relevant to some degree. They argue that any regime depends on the support of a coalition of interests of elites, and that these bargains deteriorate in the presence of economic distress (formalized as high inflation and low or negative growth and capital formation). Good times lead to a larger pie to be distributed and support for the autocracy can be maintained; bad times lead to defections from the autocratic arrangement.

3. The exception is Przeworski (1991) in his discussion of the political consequences of economic reform: redistribution is politically more palatable under conditions of unequal in-

come distribution. Taking from the rich few to give to the majority poor is not likely to anger the decisive voter in fledgling democracies. If the income distribution is flat to start with, and reforms (temporarily) lower everybody's welfare, large numbers of voters will turn against the reforms, stopping them in their tracks. Hence more significant reform is likely to occur in unequal societies, and Przeworski suggests this explains the difference in reformist tendencies between Latin America and Eastern Europe (p. 174 passim). By this argument democratization is more likely to occur in inegalitarian economic conditions.

4. In contrast, Velasco (1994) considers the failure of democracy to consolidate in his examination of the Chilean experience. Where competing groups have "open-access" to the economy's (and by extension the government's) resources, these groups will tax and extract excessively and hence inefficiently (Chile in its democratic, clientilistic, Allende period). The shift to autocracy (away from the open-access regime) occurs when one group can, by paying a cost, shut off access of other groups to its resource base - the government fiscus. This is likely to occur when the number of groups with access to government transfers becomes too large or when the the level of output is higher. This is consistent with the Pinochet reforms in which the state became more insulated from pressure group demands.

5. See Grossman (1991, 1994), Grossman and Kim (1995, 1996) for a comprehensive analysis of production and protection in economies where property rights are not secure. These models of contest emerge from Hirshleifer (1991, 1993) and Skaperdas (1992, 1996) who have developed a theory of contest, the outcome of which may be a reallocation property rights.

6. The policy-maker for the elite is the incumbent ruler who maximizes the expected wealth of his clientele which is made up of the current owners of capital, and perhaps any other members of the ruling class such as the ruling party or the military. An alternative interpretation is that the elite represents the land-owners and the workers are peasants engaged in agricultural production (Grossman 1991, 1999).

7. The autocracy is a politically unstable environment. Capital–owners may demand a premium for exposing their assets to the risk of expropriation or there may simply be trans-

action costs associated with moving capital abroad. The government itself may tax the export of capital to try to encourage that it remain in place.

8. We also assume that under a democracy, property rights are (more) secure. This assumption may not be accurate: post-transition, crime rates and evidence of corruption within the new governments appear to have risen relative to the autocratic period. The actual degree of police corruption and crime during most countries' autocratic periods may have been concealed however.

9. Kuran (1989, 1995) argues that revolutions are inevitable, but unpredictable; here pacted democratic transitions are not inevitable but predictable.

10. Racial terminology is fraught with difficulties, especially in the South African context. It is however, impossible to analyze South African political economy without using racial categories. Here, "black" refers to the set of indigenous Africans, those of Indian descent and coloureds (those of Khoi or San or mixed race descent). "White" refers to those of English, Afrikaner or other European descent.

11. Blacks that satisfied strict property and educational criteria held the franchise prior to 1913. It was rarely exercised.

12. For example, see Kaempfer and Lowenberg (1998), Sisk (1995), Friedman (1993), Mattes (1994), Slabbert (1991).

13. Afrikaans for "separateness", translated as "separate development," the political and social system that restricts racial groups to separate geographical areas, social milieux, educational and economic opportunities and access to political power. The model of the apartheid economy presented here is not intended to be a complete specification of the political economy of the apartheid state (for such a model see Lowenberg (1989), or Lundahl (1982)). Instead, we take the essential power structure of apartheid as given. In particular, the white elite protects its authority to tax (and not to be taxed) by spending resources on contest. This abstracts from other attributes of the apartheid economy – the legal restrictions on geographical and occupational mobility of black workers, for instance (see Kaempfer and Lowenberg (1998) for more details).

14. Laitin (1987) identifies the significant groups as the ANC and the NP, and then argues that the conflict between the two can be modelled using the Prisoner's Dilemma (PD). The Nash equilibrium is the Pareto inferior "defect - defect" cell of the game where the NP maintains the oligarchy and the ANC fights for majoritarianism. What this paper does is provide foundations for the payoffs in the matrix and show how those payoffs change with exogenous economic conditions, and that under certain conditions, the game ceases to be a PD.

15. The intervals in Table 1 are peak–to-peak of the post-war business cycle.

16. The most recent census was taken in March 1996. The South African Central Statistical Service has announced that the size of the population as then enumerated was 37.9 million people, about 4 million less than had been estimated. The racial breakdown has not yet been announced.

17. Hendrik Verwoed, Prime Minister in the 1950s is credited with being the designer of apartheid, particularly its provisions to separate the races, to provide little eduction and other public goods to black South Africans and to restrict their access to "white" areas and jobs.

18. See Kaempfer and Lowenberg (1998) for a complete discussion of the political economy of this shift in South Africa. Przeworski (1991), following O'Donnell and Schmitter (1986) suggest that liberalization (a significant opening of the autocratic regime) is the outcome of divisions in the ruling bloc, usually under conditions of crisis; the intent is to broaden the legitimacy of the regime, yet the effect is most often to admit greater numbers to sources of political influence and to increase the pressure for further reform. This miscalculation must require some incompleteness of information to be sequentially rational.

19. By and large most writers on the subject of sanctions and divestment in South Africa argue that they can have at best marginal effects on political outcomes (Laitin 1987). Kaempfer and Lowenberg (1988, 1989, 1998) establish that sanctions are rarely effective in changing behavior in the target country (and may even be counter-productive), and are more likely to serve the interests of the domestic pressure groups that shape them.

20. Except for Brazil (in which the opposition came to power through the electoral college) and Thailand (where the prime minister was selected by legislators not all of whom had been elected) (Haggard and Kaufman, 1995) .

21. There are 24 democratic breakdowns in Haggard and Kaufman's (1995) sample of 47 countries that experience democratic transition between 1970 and 1990.

22. Muller (1988) finds a strong inverse association between inequality and the likelihood of stability versus breakdown of democracy (as of 1961), a result consistent with this broadened view.

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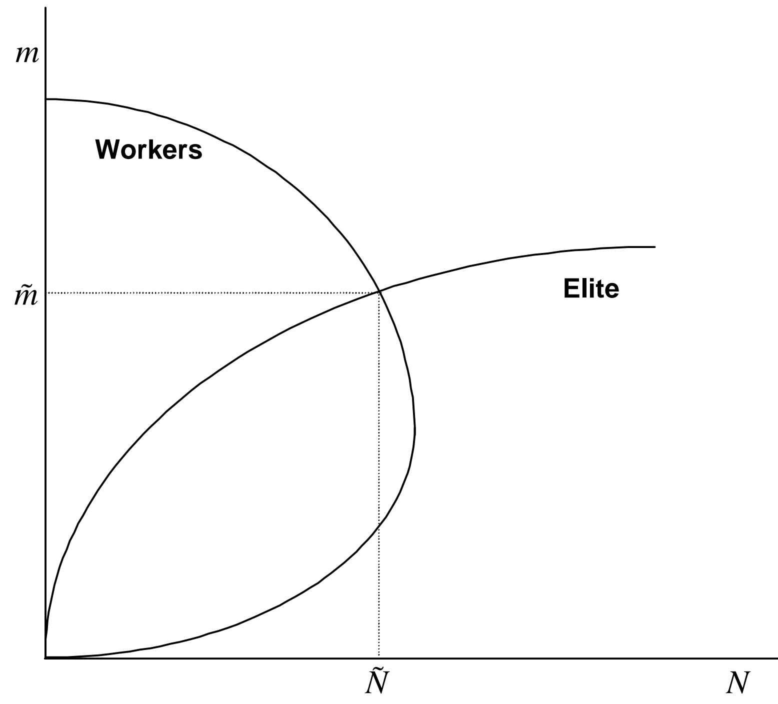

Figure 1: Reaction functions in the autocracy game

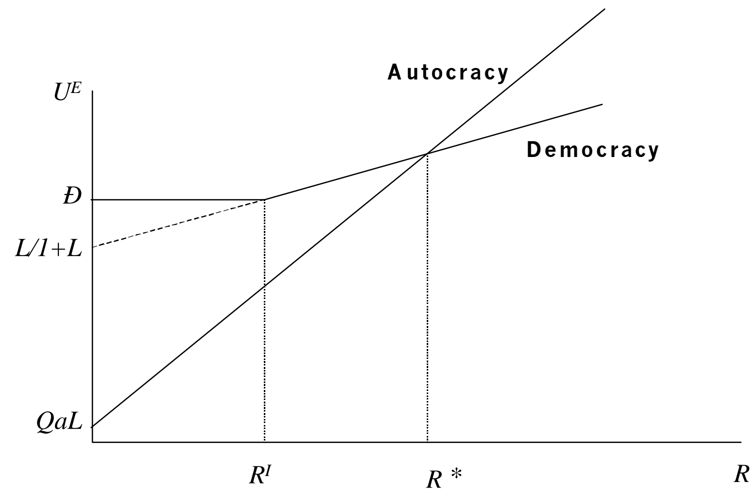

Figure 2: Returns to the Elite Under Autocracy and

[B]

Years	1948-55	1955-60	1960-64	1964-70	1970-75	1975-81	1981-86
Real GDP	4.6	4	6	5.5	4	3	0.3
Real Manufacturing Output	7.7	4.6	10.2	7.5	5.9	5.1	-2.4
Real Manufacturing Investment	-0.7	5.5	25.1	4.3	7.1	7.8	-15.6
Manufacturing Employment	5.2	0.3	6.1	5	4.1	1.8	-2.2
Total Employment	2.7	1.3	2.9	2.9	2.4	1.3	-0.5
CPI	5.5	2.2	1.8	3.4	9.4	12.6	14.7

caption

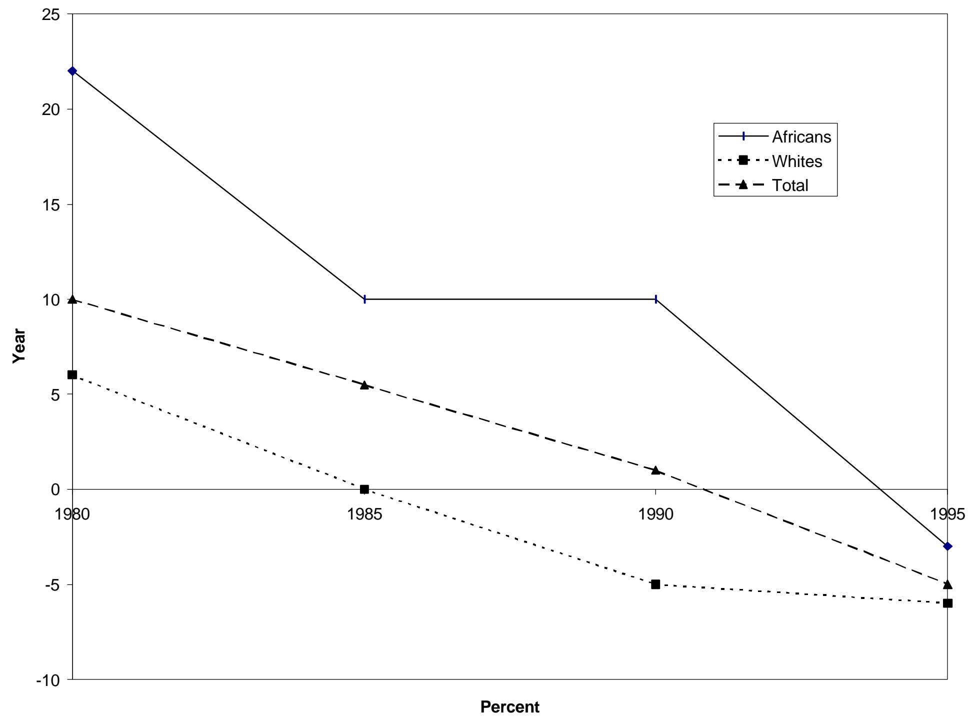

Figure 3: 5-Year %-change in Real Wages in Manufacturing, South Africa, 1980-1995

Source:Du Toit and Falkena (1994)

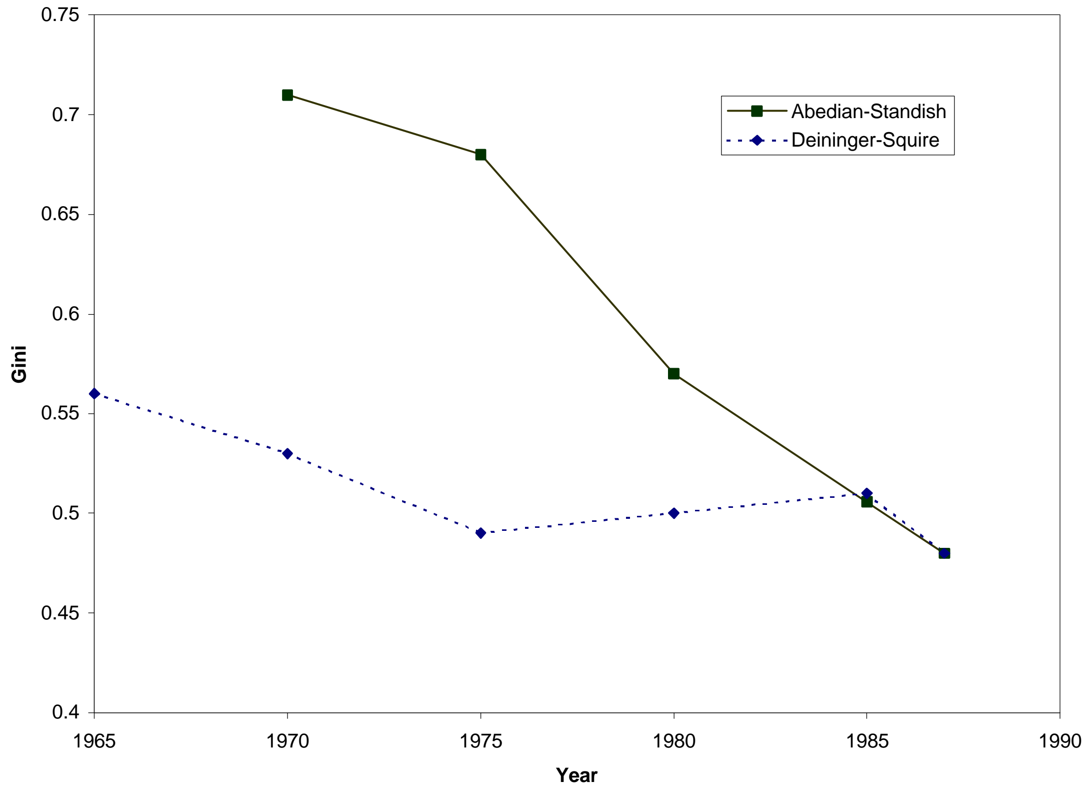

Figure 4: Gini Coefficients for South Africa, 1965-1987

Source: Abedian and Standish (1992), Deininger and Squire (1996)

Figure 5: Investment share of GDP (%) and
Capital Labor Ratio (constant 1990 rands), South Africa, 1970-1992.

Source: Penn World Tables, Mark 5.6, South African Reserve Bank

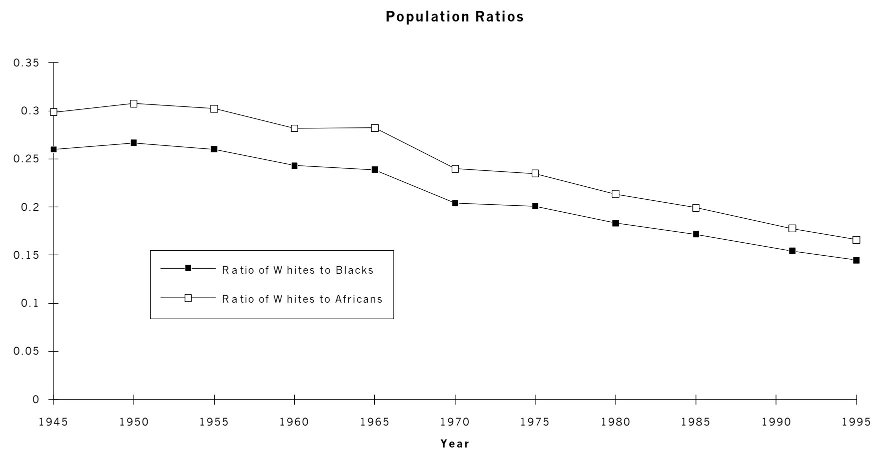

Figure 6: Population Ratios, South Africa, 1945-1995.

Source: South African Institute of Race Relations Annual Surveys 1974-1996

Country	Transition Date	Date of Nearest Prior Survey	Date of Previous Survey	*Change in Income Ratio (d)*
Argentina	1983	1980	1970	-2.64
Phillipines	1986	1985	1975	-2.47
Ecuador	1979	1975	1970	-4.00
Portugal	1976	1974	1968	-1.34
Uruguay	1985	1981	1976	-0.21
Hungary	1990	1989	1988	-0.01
Spain	1977	1974	1965	0.14
Poland	1989	1989	1987	0.30
Turkey	1974	1973	1968	-1.90
Brazil	1985	1983	1975	3.94
Korea	1988	1988	1976	-2.24
Average				-0.95

Table 2: Change in the Income Ratio Prior to Democratic

Country	Date of Survey	Date of Previous Survey	*Change in Income Ratio (d)*
Brazil	1975	1970	2.30
Mexico	1977	1970	1.51
Phillipines	1975	1971	0.59
Uruguay	1976	1968	1.38
Nicaragua	1975	1970	0.57
Guatemala	1975	1970	0.00
Hungary	1972	1967	0.14
Hungary	1977	1972	-0.41
Hungary	1983	1977	-0.02
Korea	1976	1970	1.68
Average			0.77

Table 3: Change in Income Ratios in Non-