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ELITES, EDUCATION AND REFORMS

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Abstract

We analyze the interplay of political elites’ de facto power, democracy and education based on a theoretical framework inspired by the model in Acemoglu and Robinson (2006). We identify conditions under which the elite may overcompensate the loss of de jure power (as a result of political reform) by investing too much in de facto power so that the probability to have de facto power is higher under democracy than under non-democracy. The analysis also shows that depending on whether the income effect of education is strong or weak and whether citizens’ education has increasing or decreasing returns, the elite may or may not support education subsidy under democracy. We show that under certain assumptions the political elites may treat democracy and spending on citizens’ education as substitutes. We comment on the implications of the results for understanding why countries that started from comparable initial conditions may follow divergent development paths.
1. INTRODUCTION

There exists significant theoretical and empirical research on the role of human capital in growth and development (e.g., Romer, 1986; Lucas, 1988; Barro, 1991 and 1996, Benhabib and Spiegel, 1994; Mincer, 1996; Krueger and Lindahl, 2001; Baliamoune-Lutz, 2009a). Education indicators (such as primary and/or secondary educational levels, or literacy rates) are often used as indicators of human capital. Yet, mass education may be viewed as a threat to the political elite and, thus, is in many countries still not widely supported. Similarly, there is an important body of work in political science and economic literature on the statistical association between growth (or development) and democracy (e.g., Lipset, 1959; Przeworski and Limongi, 1993; Barro, 1996 and 1999; Minier, 1998; Durham, 1999; Londregan and Poole, 1996; Acemoglu et al., 2008; Fosu, 2008). While most of the early studies argue that there is a positive correlation between democracy and income, more recent studies—Acemoglu et al. (2008) in particular—show that this association is not robust.

There is a growing literature on the interplay of political elites and education of the masses (and on the implications of this interplay for growth and income distribution) that tries to model this relationship in a political economy context, where education is at the same time the engine of growth and a determinant of political participation (Perotti, 1993 and 1996; Galor and Zira, 1993; Saint-Paul and Verdier, 1993; Bourguignon and Verdier, 2000; Galiani et al., 2008). In an insightful paper, Bourguignon and Verdier (2000) study the dynamics of inequality, democratization, and development in such a context and explore the incentives for an educated oligarchy to subsidize the education of the poor and start a democratic transition. The authors identify circumstances under which the elite promotes the endogenous emergence of a middle class for purely political economy reasons. Their model indicates that three possible situations could occur. A situation with complete democracy with two classes, rich and poor; a situation of oligarchy with two classes, rich and poor; and a situation where the country is partially democratized with three classes, rich, poor, and middle-class. Galiani et al. (2008) study the emergence of large-scale education systems by
modeling the incentives that the economic elite could have to accept taxation destined to finance the education of credit-constrained workers, and find that these incentives arise from the increased demand for human-capital-intensive services by high-income groups. Their model helps to explain why land-rich countries in Latin America (Argentina, for example) developed an extensive public education system and a sophisticated service sector, prior to developing a strong manufacturing sector.

During the past two decades or so, most developing countries undertook, albeit to different degrees, various political, institutional, and economic reforms. Yet, there is only a limited number of studies in the economic literature that have examined the role of the elite in pushing through particular types of reforms. An interesting and simple theoretical model that explores this is Acemoglu and Robinson (2006), where the authors develop a static model to identify mechanisms that would allow an understanding of simultaneous change and persistence in institutions. The main result in Acemoglu and Robinson (2006) provides interesting insights into the interplay between democracy, de facto political power, and economic institutions. The authors show that elites’ investment in de facto power exactly offsets the additional de jure power (as a result of democracy) of citizens, so that the elites retain the power to control economic institutions. Hence, economic institutions that favor the elites could persist even with democratization. In Acemoglu and Robinson (2008), the authors use a more elaborate model and note that this result is a special case of the more general case where the elites invest in de facto political power to partially or entirely offset the changes in de jure power resulting from political reform. They then use this special-case result as evidence indicating a pattern of invariance of economic institutions; and argue that “even though political institutions change along the equilibrium path, the stochastic distribution of economic outcomes remains invariant” (Acemoglu and Robinson, p. 287).

In this paper, we develop a simple theoretical model that links the support for political reform by the elites to the preferences of elites and their support for citizens’ education (mass education). Following Acemoglu and Robinson (2006), we focus on the control of de facto political power as the driving force behind the elites’ decision to subsidize or not
subsidize education, and to support or not support democratization (political reform). Assuming a society where a small elite controls de facto political power, our model tries to identify the conditions under which the elite supports democracy and/or education. In addition, if we can identify different degrees of democracy, the model we develop in this paper should offer useful insights into the differences we observe in the elites’ preferences for investing in the education of the masses in countries at comparable levels of democratization; and the differences we note in levels of democracy across countries with comparable educational levels.

Our model differs from that in Acemoglu and Robinson (2006) in two important ways. First, we assume that de facto political power can be generated from a general function. Since the main result (equation (11) in Acemoglu and Robinson’s paper) assumes that de facto political power is generated linearly, it is interesting to explore how this result might change when we assume a more general form. We introduce this complication in the model in order to examine cases where the elite is more or less than linearly productive in retaining power. This leads to a case where the elite may end up with more de facto power in more de jure democracy. Second, we account for the elites’ support of (or spending on) citizens’ education. Higher levels of spending on education (higher human capital) reduce the elites’ rents directly and at the same time add to the rents through positive externalities on the elites’ aggregate income, say through higher productivity in the productive sector (assuming the elite controls this sector), but more education raises citizens’ political participation and, thus, may increase de jure political power of the citizens (see Bourguignon and Verdier, 2000; and Glaeser et al., 2007).

The main goal of this paper is to contribute new insights into the interplay of education, democracy, and elites’ de facto political power. First, we identify conditions under which the elites may overinvest in de facto political power so that the probability to have de facto power is higher under democracy than under non-democracy. This may lead to deterioration—not merely invariance—of economic institutions, and could explain why growth may be even lower in early stages of democratization. Second, the model presents
additional theoretical evidence consistent with the results in Bourguignon and Verdier (2000) in that it indicates that we may have different outcomes depending on the interplay between political reform, de facto political power and citizens’ education. We may have a situation where the elites support citizens’ education and, thus, the country may move on a path of sustained democratization and less unequal income distribution (as more citizens are educated). We may instead have a situation where the elites choose lower (or no) subsidy for citizens’ education, and we would end up with an oligarchic society with high income inequality. A third situation would be a society characterized by partial democratization and elite’s support for the education of the masses. Finally, a fourth case is a partially democratized country with weak support for citizens’ education. Theoretically, each case would lead to a different development path.

The remainder of the paper is organized as follows. Section 2 introduces the static model and characterizes the model’s equilibria, and derives propositions based on elites’ decisions with regard to investing in de facto power, subsidizing citizens’ education, and undertaking political reform (democratization). Section 3 outlines the implications of the theoretical results for growth and development and discusses how differences in the political elite preferences may explain differences in development paths, and briefly comments on the experiences of two North African countries, Morocco and Tunisia. Section 4 concludes.

2. THE MODEL

We follow the characterization of society in Acemoglu and Robinson (2006). Society has two groups: A finite number (M) of the elites (e) and a continuum 1 of citizens (c). Since the elites are a minority group, they gain more from controlling de facto political power and they are more efficient in doing so (Mosca, 1939; Olson, 1965; Acemoglu and Robinson, 2008).

We first describe how the de facto political power of an elite member i is generated.
For all $\theta^i \geq 0$, let $g(\theta^i) > 0$, $g'(\theta^i) > 0$. The political power generating function $g(\theta^i)$\(^1\) is defined as the increase in the de facto power of the elite as a result of the contribution $\theta^i$ (investing in activities that would increase de facto political power) of member $i$ of the elite. Thus,

$$P^e = \phi \sum_{i \in \phi} g(\theta^i)$$ \hspace{1cm} (1)

where $(\phi > 0)$.

Next, let $E$ represent the elite’s spending on education of the citizens. We assume that the citizens do not undertake activities to increase their de facto power so that $\theta$ for the citizens is equal to zero. The total political power of the citizen is given by the following equation.

$$P^c = \omega + E + \eta I(S = D)$$ \hspace{1cm} (2)

Following Acemoglu and Robinson (2006), we define $\omega$ as a random variable with a continuous distribution function $F(.)$ and density function $f(.)$ which is strictly decreasing ($f'(.) < 0$). $I(S = D)$ is an indicator function taking the value of 1 when the state of the regime is democracy. $\eta$ is the extent of the political power of the citizens that is derived from democracy, and it is strictly positive ($\eta > 0$). Equation (2) shows that the citizens can increase their political power from three different sources. The citizens may manage to solve the collective action problem and come to a consensus that might allow them to have greater de facto political power (with $\omega$ having a positive effect). Second, more spending by the elites on education ($E$) enhances citizens’ political participation. Third, more democracy (a higher value for $\eta$) implies more (de jure) political power for citizens.

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\(^1\) Note that this paper presents an equation for the de facto political power of the elite that is different from that in Acemoglu and Robinson (2006 and 2008) in that we assume that the political power is generated by a general function of investment ($\theta$) in power. Obviously, $g(\theta) = \theta$ is a sub-case of this general case.
The description of the game stages is as follows. In stage 1, $\eta$ is set. In stage 2, the elite chooses $\theta$ and $E$ simultaneously. In stage 3, $\omega$ will be realized. The game is solved by backward induction to result in a subgame perfect equilibrium.

In regime $S$ (where $S$ refers to the state of the regime, democracy or non-democracy), the power of the elite is given by

$$P^e(\theta^i, \{\theta^j(S)\}_{j \in \Phi, j \neq i} \mid S) = \phi \sum_{j \in \Phi, j \neq i} \theta^j(S) + g(\theta^i) \quad (3)$$

The elite will have de facto political power under non-democracy if

$$P^e(\theta^i, \{\theta^j(S)\}_{j \in \Phi, j \neq i} \mid S) \geq \omega + E + \eta I(S = D) \quad (4)$$

Thus, given $S = N$, the elite member $i$ will choose $\theta^i$ to maximize the following function

$$-\theta^i + F(\phi \sum_{j \in \Phi, j \neq i} g(\theta^j(N)) + g(\theta^i(N))-E)R^i(E) \quad (5)$$

where the second term ($F(.)$) represents the probability of the elite member having de facto political power greater than the power of the citizens after taking into consideration spending on (subsidy of) education of the citizens.

Solving for the first-order condition with respect to $\theta^i$, we get

$$-1 + \phi f(\phi \sum_{j \in \Phi, j \neq i} g(\theta^j(N)) + g(\theta^i(N))-E)R^i(E)g'(\theta^i(N)) \leq 0 \quad (6)$$

and (with complementary slackness)

$$\sum_{j \in \Phi} \theta^j(N) \geq 0$$

Under non-democracy ($S = N$) and given the assumptions and conditions introduced earlier, the first-order condition leads to the optimal level of investing in de facto political power such that
Using the same approach, we derive the conditions under which investing in de facto political power is the optimal decision (for the elite) assuming democracy (\( S = D \)); i.e., taking into account the extent of citizens’ de jure political power (\( \eta \)) which is derived from democracy. The elite member \( i \) will choose \( \theta^i \) to maximize the following function

\[
-\theta^i + F(\phi(\sum_{j \neq i} g(\theta^j(N)) + g(\theta^i(N)) - \eta-E)R^i(E))
\]

Solving for the first-order condition with respect to \( \theta^i \), we get

\[
-1 + \phi f(\phi(\sum_{j \neq i} g(\theta^j(D)) + g(\theta^i(D)) - \eta-E)R^i(E))g'(\theta^i(D)) \leq 0
\]

and (with complementary slackness)

\[
\sum_{j \in \text{\textdollar}} \theta^j(D) \geq 0
\]

Thus,

\[
\phi f(\phi(\sum_{j \neq i} g(\theta^j(D)) + g(\theta^i(D)) - \eta-E)R^i(E)) = \frac{1}{g'(\theta^i(D))}
\]

(7) and (10) imply that

\[
\frac{f(\phi(\sum_{j \neq i} g(\theta^j(N)) + g(\theta^i(N)) - E))}{f(\phi(\sum_{j \neq i} g(\theta^j(D)) + g(\theta^i(D)) - \eta-E))} = \frac{g'(\theta^i(D))}{g'(\theta^i(N))}
\]

2.1. Political power

In this section, we try to identify the conditions under which the elite will decide to invest more in de facto political power (i.e., incur positive amounts of the cost \( \theta \)). An interesting
question that is worth exploring is whether the elite’s investment in de facto political power will be only up to the point where it would enable the elite to offset the loss in de jure political power that results from democracy or whether the elite might overcompensate for this loss. The latter may help explain why a country may have lower growth rates and weaker economic institutions under democracy relative to their level under non-democracy. In such cases, the elites’ overcompensation for the loss of the jure power may have led to greater inefficiency under democracy (as a result of the elite overinvesting in de facto political power) as would occur under the model in Acemoglu and Robinson (2006) where the elite invests in $\theta$ in order to offset the loss in the jure political power and so such society experiences (economic) institutional persistence. Thus, our model allows for the possibility of deterioration—not just persistence—of economic institutions that favor the elites.

Let $F(N) = F(\phi(\sum_{j \in \mathcal{P}_N} g(\theta^j(N))) + g(\theta^N)) - E)$; $F(D) = F(\phi(\sum_{j \in \mathcal{P}_D} g(\theta^j(D))) + g(\theta^D)) - E)$

**Proposition 1.** It follows from Equation (11) that

a) if $g''(.) = 0$, $\theta(D) > \theta(N)$ and $F(D) = F(N)$.

b) if $g''(.) < 0$, $\theta(D) > \theta(N)$ and $F(D) < F(N)$.

**Proof:**
See the Appendix.

(a) and (b) imply that under democracy, the elite will invest in $\theta$ to try to maintain de facto political power. These results are similar to those reported in equation (11) in Acemoglu and Robinson (2006). Under (b) we have the ‘standard’ case where more democracy leads to a decrease in the probability that the political elite will have de facto political power.

**Proposition 2.**
Given equation (11), it follows that there exists some function $g(.)$ for which $g''(.) > 0$ such that

$$\theta(D) > \theta(N) \text{ and } F(D) > F(N).$$
Proof:
See the Appendix.

Since \( g \) is increasing at an increasing rate, introduction of democracy induces the political elite to invest in \( \theta \) to such a degree that de jure power loss due to democracy is *overcompensated* by the increase in de facto political power. This is an important result. It implies that the political elites invest to a point where the probability that they will have de facto power is higher under democracy \( (F(D) > F(N)) \), and thus may cause greater inefficiency.

2.2. Education

We now examine how the elite chooses the amount of spending on (subsidy of) the education of citizens. We assume imperfect capital markets, implying that the citizens are not able to borrow in order to invest in human capital (education). We also assume that education \( (E) \) directly increases productivity and total product/income \( (Y) \) for the elites. Rent is defined as income minus total spending on education.\(^2\)

We define the following.

\[
Y = \sum_{i \in \wp} Y^i \text{ (elites' aggregate income)}; \quad R = \sum_{i \in \wp} R^i;
\]

\[
E = \sum_{i \in \wp} E^i \text{ (aggregated investment (subsidy or spending) in the education of citizens).}
\]

We assume that spending on education \( (E) \) affects the rents \( (R) \) to the elite \( i \).

Let \( R^i(E) = Y^i(E) - E \); \( Y^i(E) > 0; \ Y^{ii}(E) > 0. \)

To simplify the analysis, we focus on the case of democracy \( (S = D) \). Taking the derivative of equation (8) with respect to \( E^i \) we get

\(^2\) Implicitly, \( E \) is spending on human capital as well as a production factor and has a direct influence on \( P^c \) at the same time, instead of showing these links in separate equations. This is for simplicity and does not affect the quality of the results.
\[-\phi f(\sum_{j \in p, j \not= i} g(\theta^j(D)) + g(\theta^i(D))) - \eta \cdot E)R^i(E)^+ \]

\[F(\phi(\sum_{j \in p, j \not= i} g(\theta^j(D)) + g(\theta^i(D))) - \eta \cdot E)(-1 + \frac{\partial Y}{\partial E}) \leq 0 \]  

(12)

and (with complementary slackness) \[\sum_{i \in p} E^i \geq 0\]

**Proposition 3.**

Case 1: If \[\frac{\partial Y^i}{\partial E^i} \leq 1; \forall E^i \geq 0\], then no education investment (the elite will not support citizens' education).

Case 2: If

\[\lim_{E \to 0} \frac{\partial Y^i}{\partial E^i} = \infty; \frac{\partial^2 Y^i}{\partial E^2} < 0; \forall E^i \geq 0;\] and \[\frac{\partial Y^i}{\partial E^i} \text{ at } Y(Y) < 1;\]

then an internal solution (for investing in education) exists. \(^3\)

**Proof:**

See the Appendix.

Under case 1, an increase in \(\eta\) (more political power for citizens under democracy) implies that the left hand side of equation (12) is reduced so that if the political regime does not change back to less democracy and there is no increased investment in de facto political power (no change in \(\theta\)), the elite will reduce spending on education. By reducing \(E\), the elite looses the gain in \(Y\) that is derived from the education of citizens but increases \(R\) by reducing spending on education. The elite will keep doing this until investment in education is zero. Given that the marginal effect of \(E\) on \(Y\) is less than one, \(R\) with no spending on education should be higher.

\(^3\) Both cases may hold under democracy and non-democracy (we just remove \(\eta\) under non-democracy). Note that other outcomes are possible, depending on the concrete functional form of \(Y(E)\).
Given the growing empirical literature (Barro, 1991; Acemoglu et al., 2005; Glaeser et al., 2007) on the links between democracy and education, and in particular the conflicting findings in this literature, it would be useful to present comparative statics with respect to $\eta$. We are interested in looking at how $E$ changes when $\eta$ increases. In other words, we want to identify the effect of an increase in the extent of the political power of citizens (that is derived from democracy) on the equilibrium level of spending on education by the elite.

In order to do this we need to find $dE^i/d\eta$ and evaluate its sign. We can try to formulate the explanation of what exactly happens under case 2 by applying the *implicit function theorem* to see if we can sign the expression $dE^i/d\eta$.

Define $K$ as the LHS of equation (12). Then, using the implicit function theorem, the marginal effect of the degree of political power of citizens (from democracy) on education can be expressed by the following equation.

$$
\frac{dE^i}{d\eta} = \frac{-\partial K}{\partial \eta} = \left[ \frac{\phi^2 f'(\phi(\sum_{j\neq i} g(\theta^j(D)) + g(\theta^j(D)))-\eta-E)R'(E) - F(\phi(\sum_{j\neq i} g(\theta^j(D)) + g(\theta^j(D)))-\eta-E)R'(E)(-1+\frac{\partial Y}{\partial E})}{\phi^2 f'(\phi(\sum_{j\neq i} g(\theta^j(D)) + g(\theta^j(D)))-\eta-E)R'(E)+F(\phi(\sum_{j\neq i} g(\theta^j(D)) + g(\theta^j(D)))-\eta-E)(\frac{\partial^2 Y'}{\partial E^i^2})} \right] (13)
$$

**Proposition 4.** Assuming $\eta$ (de jure political power of citizens) is specified, an increase in $\eta$ causes the elite to reduce the equilibrium level of spending on citizens’ education, as long as $\partial^2 Y^i/\partial E^i^2 < 0$.

**Proof (sketch):**

It follows from equation (13) that in the case where $\partial Y^i/\partial E^i$ is greater than one (which must hold for positive values of $E$), the numerator in the ratio inside the brackets is negative. If the denominator in equation (13) is also negative, then $dE^i/d\eta$ will be negative. An increase
in citizens’ political power (i.e., in democracy) will be accompanied by less spending on citizens’ education. The opposite happens if the denominator in equation (13) is positive, and \( \frac{dE^i}{d\eta} \) will be positive. Under which circumstances will the denominator of the ratio inside the brackets be negative and under which cases will it be positive?

If we assume that \( \Sigma Y_i^2 / \Sigma E_i^2 \) is negative, then we have \( \frac{dE^i}{d\eta} < 0 \); i.e., the effects of \( \eta \) on \( E \) is unambiguously negative (note that \( Y''(E) \) is \( < 0 \) was the condition under case 2 in proposition 3 for an internal solution for spending on education to occur). On the other hand, if we assume that \( Y''(E) \) is \( > 0 \), then the second term in the denominator (inside the brackets) will be positive and we cannot sign \( \frac{dE^i}{d\eta} \) without further assumptions.

2.3. Democratization

Let the equilibrium values for the elite’s investment in political power and for the elite’s choice of education resulting from the first-order conditions in equations (9) and (12) be defined as \( \theta^* \) and \( E^* \), respectively. Could the elite find a value of \( \eta \) that would maximize \( F(D) \)?

A necessary condition for finding such value of \( \eta \) is that the maximization function (equation (8)) is sufficiently concave in \( \eta \). If the maximization function is not concave in \( \eta \) then we will have only corner solutions (either democracy or non-democracy). The value function is somewhat complex but we sketch below a procedure for finding such value of \( \eta \) (\( \eta^* \)).

Consider equation (8) at optimal choices of \( \theta^* \) (\( \theta^* \)) and \( E^* \), and note that both \( \theta^* \) and \( E^* \) are implicit functions of \( \eta \). Now, maximize equation (8) with respect to \( \eta \).

With \( \theta^* \) and \( E^* \), let \( V = -\theta^* + F(\phi( \sum_{j=0}^{\infty} g(\theta^i(D)) + g(\theta^i(D))) - \eta - E^*)R'(E^*) \)
To find the optimal value of $\eta$, we take the derivative of $V$ with respect to $\eta$ and set it equal to zero. Then, we evaluate the sign of the second derivative of $V (V'')$ to determine if $V$ is concave or convex.

If the maximization function is concave in $\eta$, it is then possible for the elite to find an optimal value of democracy (one that would maximize rents for the elite). This implies that the partial (incomplete) levels of democracy (or democratization) that we observe in many countries could be the result of optimization conditions by the elites. On the other hand, if the maximization function is convex, the elite will choose a corner solution; either full democracy (including the case with overinvestment in de facto political power) or dictatorship. Note that the sequencing is important. We assume that in a first stage the equilibrium value for $\eta$ is chosen. In a subsequent stage $E^i$ and $\theta^i$ are determined; i.e., equation (8) is optimized with respect to $E^i$ and $\theta^i$.

3. SUMMARY AND DISCUSSION

The interplay of political reform, de facto political power and citizens’ education can lead to multiple outcomes. We may have a situation where the elites support citizens’ education and their political participation, and thus the country may move along a path of sustainable democratization and less unequal income distribution (assuming more citizens’ education reduces inequality). We may instead have a situation where the elites choose lower (or no) subsidy for citizens’ education and no democracy, and we would end up with an oligarchic society with high inequality. A third situation would be a society characterized by partial democratization and elites’ support for the education of the masses. Finally, a fourth case is a partially democratized country with weak support for citizens’ education. Theoretically, each case would lead to a different growth and development path.

Together, the propositions presented in this paper suggest that the political elite may find an optimal $\eta$, then decide on the levels of investment in de facto political power ($\theta$) and citizens’ education ($E$), given the other parameters. Under Proposition 1, the elite decides to
invest in de facto political power to have control of overall political power while the citizens are offered de jure power (democracy). Proposition 2 implies that the elite may overinvest in securing de facto power to the point where the probability to have de facto political power is greater under democracy. If the de facto power is used to maintain economic institutions that favor the elites, we may have inefficiencies and lower growth (see Acemoglu and Robinson, 2008). Proposition 3 implies that the elite’s decision to support or not support mass education may depend on whether education has significant strong effects on the elite’s rents. An interesting corollary of Proposition 4 is that if $dE_i/d\eta$ is negative, then subsidizing the education of the masses and democratization (political reform) might be viewed by the elite as substitute instruments. Education may increase political participation of citizens and thus may reduce de facto political power of the elites, particularly if political participation enables citizens to have a greater say in the reform of economic institutions. Education may also allow citizens to access traditionally elite-dominated economic activities and thus would reduce elites’ rents, which also reduce de facto political power of the elite. An interesting question arises. Under which circumstances would spending on education (of the masses) have strong positive effects on elites’ income (rents)? The answer may depend (at least in part) on the stages of development and the size of the middle class. In the following, we provide a brief description of the mechanics that might be involved.

In the early stages of development education may not add significantly to the elites’ income as society relies more on agriculture and the elites have low (or no) incentives to subsidize the education of the masses. As income per capita rises (medium development stage; middle income countries) education begins to gradually become a necessity (or a normal good) for at least two reasons. More people can now invest in education, including private education, so that the notion of ‘education as luxury good’ is no longer strictly valid as larger numbers of individuals are able to have access to education. Second, as the structure of the economy changes with the share of agriculture declining and the share of manufacturing and services rising—and thus requiring more skilled labor (higher human capital)—education now becomes essential to getting a job in industries that use skilled labor (productive sector). Yet, while some individuals from the masses may be able to invest in education (as income
rises), the political elites may also see a significant incentive to support more education in the country in order to satisfy the needs of the business elites, particularly in the presence of imperfect financial markets where the non-rich are often credit-constrained. This is because the political elites and the business elites in developing countries, more often than not, tend to support each other. In this case, we would expect to see higher spending on education in middle-income countries.

Additionally, the size of the middle class may play a crucial role. If education leads to stronger political participation and the size of the middle class increases so that large groups which were formerly part of the masses (citizens) can now solve the collective action problem, then the elites may lose de facto political power and it might be too costly for them to regain such power. In this case, in order to maintain control of de facto power the political elite may chose to significantly reduce spending on education. The political elite may need to use co-optation of small groups from the educated or politically active citizens to maintain de facto power. In order to achieve this the elite may focus education subsidy (spending) on a specific groups, thus creating a small middle class that would support the political elites (Bourguignon and Verdier, 2000).

In theory, in the absence of information on the values of the parameters for the relevant functions we cannot unambiguously determine what happens to democracy and spending on education when the elites simultaneously decide education and democracy. An important implication for empirical analysis is that when examining cross-country experiences we might find conflicting results depending on the countries studied. We might find countries that increased education and democracy (where the two could be viewed as complementary), others that restricted political freedom and other democratic institutions and improved the education of the masses, or improved democratic institutions but restricted spending on education (mainly in order to maintain a very small middle class), and countries that restricted both spending on education and political reform.
Given these arguments, it would be useful to compare countries that started at similar levels of development and have diverged decades later. The comparison between Morocco and Tunisia can provide some insights in this context. Despite similarities in initial conditions, these two countries seem to have embarked on divergent paths for growth and development. In 2002, Tunisia’s (real) per capita income was 2.3 times its level in 1975, while Morocco’s per-capita income was only 1.85 its level in 1975, in spite of Morocco starting from a lower income level. In 1975, Tunisia’s income per capita (PPP, $) was $3143, while Morocco’s was $2185.80 (or 70 percent of Tunisia’s per-capita income). In 2007, Morocco’s per-capita income was about 57 percent of Tunisia’s. During the entire period of 1975-2007, Morocco was ‘partly free’ (according to Freedom House indices) while Tunisia was ‘not free’ for the entire period except in 1979-93 where it was considered, in general, to be ‘partly free’. Why did Morocco lag behind Tunisia even further despite having relatively (slightly) better political institutions? It is highly unlikely that this could be explained by differences in religion, culture, geography, colonialism, or language; or be explained significantly by differences in political rights\(^4\) (given that Morocco has, in general had, better de jure political institutions compared to Tunisia, except those protecting women’s rights which were weaker in pre-1990s Morocco).

Morocco and Tunisia became independent states around the same time (1955 and 1956, respectively) and were at that time at fairly comparable levels of development in most areas. In 1965, the share of agriculture (value added) in Tunisia and Morocco was about 21% and 23%, respectively. In 2002, it was 10% and 16%, respectively. Manufacturing share in Tunisia rose from 8% in 1965 to about 20% in 2002. In Morocco the share of manufacturing increased from about 16% in 1965 to 17% in 2002. Tunisia, however, invested (since the early years of Habib Bourguiba’s tenure) significantly more than other North African countries in public education, especially in secondary and tertiary education, and in women’s empowerment (see Baliamoune-Lutz, 2006 and 2009b), in spite of the country having restricted political rights and civil liberties, and the regime being highly autocratic.

\(^4\) Addison and Baliamoune-Lutz (2006) provide an empirical analysis of the effects of institutions on the outcome of economic policies in Tunisia and Morocco.
On the other hand, primary, secondary and tertiary enrollment rates are lower in Morocco compared to their respective rates in Tunisia. However, at least based on *Freedom House* indices, Morocco is considered as partly free. How did Tunisia maintain its highly autocratic political institutions and still manage to grow and develop at a higher pace than its neighbors, especially Morocco? Was the political elite in Tunisia less worried about the effects of education on political participation and on the elites’ de facto political power?

A possible explanation may be the use of political co-optation. The political elite in Tunisia made significant use of the politics of co-optation so that the size of the political elite increased as co-optation seemed to have benefited both the old political elite and the (highly-educated) new elite, including from labor and trade unions. This reduced political confrontation (relative to the case of Morocco for example). The resulting political stability coupled with educated (skilled) labor contributed greatly to the success of the manufacturing/export sector (see Baliamoune-Lutz, 2009b). In fact, in both countries the regimes initially tried to adopt France’s policy (when the Morocco and Tunisia were French colonies) of creating an educated middle class—generally known as ‘Pieds noirs’— in North Africa (see Bourguignon and Verdier, 2000). However, in Tunisia, the political elite understood the need for a skilled labor force (especially skilled female labor) much earlier than Morocco, and the political elite did in fact accommodate the needs of the business elite by investing in human capital. This implies, in terms of Proposition 4, that the political elite chose a lower $\eta$ and a higher $E$. As a result, enhanced human capital increased returns in the productive sector and resulted in sustained growth and development in Tunisia but the regime remained, in a large part, autocratic.

On the other hand, Morocco focused on the creation of a small middle class that would support the regime (the monarchy) and continued this policy throughout most of King Hassan II’s 38-year reign. Many from the older generation recall that during the colonization of the country by France and especially in the 1940s and the first half of the 1950s, the political elites would publicly encourage the masses to fight for freedom and incite the young men from the political elite families to get education by telling the masses to hold the
flag (raya) and fight, while encouraging those from elite families to have a good education (kraya).

Another factor that may help to explain why the two countries made dissimilar choices regarding human capital is related to the nature of the business elite. In Morocco, the business and political elite was the same group. A large portion of Morocco’s productive sector (industrial and manufacturing) and agribusiness was (and still is) held by members of the extended royal family and French corporations. In Tunisia, on the other hand, there was an important business elite that constituted a special interest group, in particular exporters—in the textiles and clothing, and mechanical and electrical sectors—who created significant demand for human capital including female education (Baliamoune-Lutz, 2009b). All in all, it seems that there was more significant middle class consensus in Tunisia than in Morocco (notwithstanding the larger population and higher ethnic polarization in the latter). This implies that in the analysis of the interplay of the elites and education, we may need to distinguish between the political elite and the business or economic elite (Baliamoune-Lutz, 2009c).

4. CONCLUSION

In this paper, we have examined the interplay between political institutions, de facto political power and the education of the masses. We did so by presenting a theoretical model that makes the equilibrium spending on education and democratization depend on the elite’s de facto political power. The analysis yields some interesting results. First, The model identifies conditions under which the elites may overcompensate the loss of de jure power by investing too much in de facto political power, so that the probability to have de facto power is higher under democracy than under non-democracy. This may lead to a worsening of economic institutions, and may contribute to understanding why in the early stages of

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5 Most, if not all, major businesses owned by the royal family are under the holding company Omnium Nord African (ONA), which was established in 1919 to hold the assets of the French Bank Paribas in Morocco.

6 See Easterly (2001) on the role of the middle class consensus in development.
democratization (partial democracy) growth may be even lower than under autocracy. Second, the results indicate that we may have multiple outcomes depending on the interplay between political reform, de facto political power and education. We may have a situation where the elites support citizens’ education and does not invest in de facto power; thus the country may move on a path of democratization and less unequal income distribution. We may instead have a situation where the elite chooses lower (or no) spending on citizens’ education and no democracy, and we would end up with an oligarchic society with high income inequality. Another case would be a society characterized by partial democratization and elites’ support for the education of the masses. Finally, we may have a partially democratized country with weak support for citizens’ education. Theoretically, each case would lead to a different development path. These results seem to be consistent with the results in Bourguignon and Verdier (2000). If the goal of the elite is to maintain (inefficient) economic institutions favoring the political elite, then the model clearly shows that the control of de facto political power is crucial and, in order to avoid this, political reform should also put in place instruments to maintain good economic institutions.\(^7\)

To simplify the analysis, we made some strong assumptions and ignored a few important factors. For example, the assumption that the citizens cannot borrow to invest in human capital may not hold in some countries where credit may be available to students. We have also assumed (as have several other studies) that education increases political participation. However, this may not always be the case, and in some cases democratization may depress participation (Bowler et al., 2007; Kostadinova and Power, 2007). In addition, we did not account for the role of natural resources and ethnic divisions. We have assumed that their effects are reflected in the rents obtained by the elites but both can have an important effect on the elites’ preferences for democracy and education through other mechanisms. In a recent study, Collier and Hoeffler (2009) find that the combination of high natural resource rents and open democratic systems reduces growth in developing countries, but checks and balances offset this negative effect. The authors contend that “resource-rich economies need

\(^7\) This, of course, is easier said than done since the political elites would halt or reverse democratization (political reform), if they have the power to do so, in order to maintain their preferred economic institutions.
a distinctive form of democracy with particularly strong checks and balances.” Finally, it might be useful to distinguish between the political elite and the business (economic) elite as they may be two distinct—albeit mutually supportive—groups with different preferences for economic institutions and citizens’ education (see Galiani et al., 2008; and Baliamoune-Lutz, 2009c).

Notwithstanding these caveats, the present paper should offer useful insights into the differences we observe in the preferences for supporting public education in countries at comparable levels of democratization; and the differences we note in levels of democracy across countries with comparable educational levels. The theory outlined in this paper could be used to test empirically how democracy and education (and income) could be jointly determined by the size and de facto political power of the elite. Although the present model is simple and static in nature, it should provide a way of reconciling the conflicting evidence on the links between democracy and education. Indeed, the results could shed light on the factors that account for the conflicting findings in the empirical literature on the relationships between income, democracy and education (Acemoglu et al., 2005 and 2008). It is important to note that the results we obtain in this paper point to the possibility of significant simultaneity biases in cross-sectional analysis of education and democracy since the political elite determines both the level of democratization and education.

Finally, as a theoretical extension of this model, it would be interesting to explore what happens when we make $\phi$ and $\theta$ depend on education. This, however, is beyond the scope of this paper but we hope that the mechanics we outlined would provide useful guidance.
References


APPENDIX

Proof of Proposition 1

Proposition 1.a: If $g''(.) = 0$, then $\hat{\theta}(D) > \hat{\theta}(N)$ and $F(D) = F(N)$.
If $g''(.) = 0$, then the cost for the elite of investing in the facto political power is linear. For any value of $\eta$ greater than zero, suppose that $\hat{\theta}(D) = \hat{\theta}(N)$, then $g'(\hat{\theta}(D)) = g'(\hat{\theta}(N))$ i.e. the RHS of equation (11) equals one, while the LHS of equation (11) is less than one. As $\hat{\theta}(D)$ is increased, the LHS of equation (11) increases until both sides are equalized and both sides are equal to one. QED.

Proposition 1.b: If $g''(.) < 0$, $\hat{\theta}(D) > \hat{\theta}(N)$ and $F(D) < F(N)$.
If $g''(.) < 0$, then investing in the facto political power exhibits diminishing returns. For any value of $\eta$ greater than zero, suppose that $\hat{\theta}(D) = \hat{\theta}(N)$, then $g'(\hat{\theta}(D)) = g'(\hat{\theta}(N))$ i.e. the RHS of equation (11) equals one, while the LHS of equation (11) is less than one. As $\hat{\theta}(D)$ is increased, the LHS of equation (11) increases while the RHS decreases until both sides are equalized and both sides are less than one. QED.

Proof of Proposition 2

If $g''(.) > 0$, $\hat{\theta}(D) > \hat{\theta}(N)$ and $F(D) > F(N)$.
If $g''(.) > 0$, then investing in de facto political power exhibits increasing returns. For any value of $\eta$ greater than zero, suppose that $\hat{\theta}(D) = \hat{\theta}(N)$, then $g'(\hat{\theta}(D)) = g'(\hat{\theta}(N))$ i.e. the RHS of equation (11) equals one, while the LHS of equation (11) is less than one. As $\hat{\theta}(D)$ is increased, the denominator of the LHS of equation (11) decreases while the numerator of the RHS increases.

From the proof of Proposition 1.a it also follows that if $g''(.)$ is sufficiently close to zero, then increasing $\hat{\theta}(D)$ will lead to a convergence of the RHS and the LHS of equation (11), respectively, until both sides are equalized at a value greater than one (more generally, $g''(.)$ has to be small relative to $f''(.)$). QED.
Proof of Proposition 3

Case 1:

It is easy to see from equation (12) that if \( \frac{\partial Y^i}{\partial E^i} \leq 1 \), then the LHS of equation (12) will be strictly negative. Thus, the elite will not invest any amount in subsidizing the education of the citizens;

\[
\sum_{i \in \wp} E^i = 0. \text{ QED.}
\]

Case 2:

It follows from equation (12) that if \( \frac{\partial Y^i}{\partial E^i} > 1 \), then it is possible to have the LHS of the equation equal to zero.

If \( \lim_{E \to 0} \frac{\partial Y}{\partial E^i} = \infty \); \( \frac{\partial^2 Y^i}{\partial E^i \partial E} < 0 \); \( \forall E_i \geq 0 \); and \( \frac{\partial Y^i}{\partial E^i} \) at \( Y(Y) < 1 \);

then an internal solution (for investing in education) exists.

If \( \lim_{E \to 0} \frac{\partial Y}{\partial E^i} = \infty \), as \( E \) approaches zero, then there are very large (increasing) returns to scale and the elite will invest in education. The assumptions that \( \frac{\partial^2 Y^i}{\partial E^i \partial E} < 0 \) and that \( \frac{\partial Y^i}{\partial E^i} \) at \( Y(Y) < 1 \) imply that an optimal level of investment in the education of the citizens within the budget constraint (\( E < Y(E) \)) exists. At such point the returns to the elite from the education of the citizens, other things being equal, are maximized. Equation (12) shows that in this case, the term \( F(.) (-1 + \frac{\partial Y}{\partial E^i}) \) will be positive which allows the LHS of equation (12) to be zero and \( \sum_{i \in \wp} E^i \) to be >0. QED.