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JEL classification: F21, O16, P48.
Keywords: Institutions, Capital Mobility, Political Economy.

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1 Introduction

For more than three decades now, we have been observing substantial increases in cross-border capital flows. Between 1970 and 2004 the ratio of total foreign assets and liabilities to GDP increased in the industrial countries by a factor of six, and in the emerging and developing nations by a factor of three (Lane and Milesi-Ferretti, 2007).[1] Against this background, it is not surprising that a broad literature has emerged which deals with the impact of financial integration on economic performance. In this respect, several authors point out that capital mobility may not only have direct economic effects – due to a more efficient international allocation of capital – but also may bring further indirect, "collateral" benefits. These indirect channels may work through an improvement of the institutional quality and governance in the host countries, the development of domestic financial markets, or the maintenance of macroeconomic discipline (see Kose et al. 2006; IMF 2007; Obstfeld 2009).

While the role of institutions in attracting international capital and determining its composition is well investigated (e.g. Alfaro et al. 2008; Ju and Wei 2007), the reverse effect of financial integration on the quality of institutions has received far less attention. Casual inspection of the evidence suggests that one should not be too optimistic with regard to the benefits of financial integration in this respect. Instead, the deregulation and liberalization of financial markets has failed to result in a desirable improvement of the quality of institutions in many countries. According to Lane and Milesi-Ferretti (2007), 68 out of 122 emerging and developing countries experienced net capital inflows (i.e. a negative change in their net foreign asset position) between 1996 and 2004. In 52 of these capital importing countries, at least one indicator and in 26 cases both indicators for institutional quality, as reflected by the World Bank's measures for corruption and the rule of law (Kaufmann et al., 2008), have changed for the worse.[2] Notably, a large part of the countries with worsening institutions can be characterized as non-democratic according to the Polity IV index.[3]

The aim of this paper is to contribute to a better understanding of these observations by developing a theoretical framework which can be used to analyze the impact of financial integration on institutional quality. Considering countries which are ruled by non-democratic regimes, we argue that financial

[1] See also Chinn and Ito (2007) for similar findings.

[2] Table 1 in the appendix provides a list of these countries.

[3] The Polity IV project assigns country scores on a scale from -10 to +10 according to their authority characteristics and adopts the following categorization of political regimes: "autocracies" (-10 to -6), "anocracies" (-5 to +5), and "democracies" (+6 to +10).

integration gives the ruling elite additional incentives to implement inefficient expropriatory policies and therefore may result in a deterioration of institutions. This outcome holds even though financial integration may have a positive impact on the de facto political power of the general population.

Our understanding of what institutions are and which factors determine their evolution is based on ideas by Acemoglu and Robinson (2000, 2006) and Acemoglu et al. (2005), who consider the interplay between political and economic institutions. Formally, our framework builds on Acemoglu (2006a,b), who develops a closed economy model in which the ruling elite extracts rents from the general population and is, at the same time, concerned with securing its political power.[4] We consider a capital importing developing country whose political system can be described as dictatorship by the elite. The *ruling elite* decides on the "rate of expropriation", which determines the share of the general population's income that is transferred to the elite. Expropriation causes *economic costs*, in the form of an excess burden, and *political costs* for the elite, which result from the general population's ability to oppose expropriation. The size of these political costs can be interpreted as a measure for the de facto political power of the general population. We start our analysis with a static model, which treats the political power as exogenous, and then extend our framework to a dynamic setting, assuming that the income of the non-elite today influences its political power in subsequent periods.

Using this framework, we analyze the consequences of financial integration for both the quality of economic institutions (the rate of expropriation) and the distribution of political power. In our model an entrepreneurial sector imports capital from the world market for given capital costs. Financial integration – interpreted as an improved access to foreign capital – works like a positive technology shock and raises profits in the entrepreneurial sector. In a static setting, this creates an incentive for the elite to raise the rate of expropriation. To analyze the dynamic effects of capital market integration, we first assume that the elite behaves myopically. Though the expropriation rate still increases as a result of financial integration in this case, the long-run effects are now weaker, because the political power of the general population increases due to its higher income. As a result, the expropriation rate initially overshoots over its new long-run equilibrium level. A forward-looking elite additionally takes into account the influence of the current income on the future political costs of expropriation and therefore expropriates more aggressively than a myopic elite. The expropriation effect of financial lib-

[4]Bourguignon and Verdier (2009) follow a related approach in analyzing the determinants of state capacity in elite controlled societies.

eralization may dominate the reduced capital costs in this case, such that both the non-elite's net income and its political influence may even decline after financial integration. Finally, we extend our model by distinguishing the political influence of entrepreneurs from that of workers. More precisely, we consider the case in which only entrepreneurs offer political resistance against expropriation, while the rest of the general population is politically inactive. In such a setting, financial integration influences political power not only through its effects on the aggregate income in the private sector but also by changing the size of the politically active entrepreneurial class.

Our paper is related to other contributions on the institutional effects of financial globalization. In Acemoglu and Robinson (2006), capital imports may reduce income inequality between workers and capital owners, making the rise of a democratic society more likely. Moreover, since capital as a tax base can react more elastically, redistribution taxes are lower in an open economy. According to Bourguignon and Verdier (2005), international financial integration reduces the incentives for ruling capitalists to subsidize education, which results in a decline in the political power of the poor. Gourinchas and Jeanne (2005) distinguish two types of equilibria with capital mobility: A "good" equilibrium with capital inflows and productivity enhancing political reforms, and an equilibrium in which bad institutions are in place and capital stays away from the country.[5]

Furthermore, the mechanism through which financial integration may cause more expropriation links our model to the literature on the quality of institutions in resource-rich economies. Comparable to the access to foreign capital, a better endowment with natural resources creates incentives for the ruling elite to increase the rate of expropriation (Political Resource Curse).[6] In our paper, financial integration differs from the resource boom argument insofar as the improved access to foreign capital also changes the political costs of expropriation by directly influencing the income of the non-elite.

The remainder of our paper is structured as follows: Section 2 presents the economic framework and derives comparative static results concerning the effects of financial liberalization in a static environment. In section 3, we introduce dynamics with a myopic elite and in section 4 with a forward-

[5]Albornoz et al. (2008) analyze the incentives to expropriate foreign investors in a Heckscher-Ohlin-framework, in which foreign capital facilitates international trade. In their model, the expropriation risk depends amongst others on sectoral factor intensities. In Myerson (2010), the ruling government may liberalize the political regime to relax a commitment problem with respect to expropriating foreign investors.

[6]Besley and Ghatak (2009) present a formal exposition of this argument. See also Robinson et al. (2006); Bulte and Damania (2008), or rent seeking models of Lane and Tornell (1999); Baland and Francois (2000); Mehlum et al. (2006).

looking elite. Section 5 extends the dynamic setup to the case that distinguishes between the political power of the entrepreneurial and of the working class. Section 6 summarizes and concludes.

2 The Model

2.1 Setup

We consider a small open economy populated by two groups of individuals, a small *ruling elite* and the *general population*. Without loss of generality, we normalize the size of the general population to one. The elite does not participate on the production process and earns rents by partially expropriating the general population. Individuals from the general population may work in a traditional sector (T) or become entrepreneurs, who operate their own firms in a modern sector (M). Output of the two sectors, denoted by Y^T and Y^M, can be sold on the world market for a given price of one. The traditional sector produces according to

$$Y^T(t) = L(t)^\beta \ , \tag{1}$$

where $0 < \beta < 1$ and $L(t)$ represents the number of workers at time t. We assume that revenues in the traditional sector are equally shared among all employees. Hence, the net income of a representative worker is given by

$$w(t) = [1 - \tau(t)]L(t)^{\beta-1} \ , \tag{2}$$

where $\tau(t)$ denotes the "rate of expropriation" in the economy. This variable captures all channels through which the ruling elite infringes on the general population's property rights.

In each period, members of the general population choose between working in the traditional sector and becoming entrepreneurs. To start a firm, an entrepreneur needs one unit of capital. We assume that this initial investment has to be financed by borrowing abroad at an exogenous interest rate R. Financial integration, interpreted as the removal of frictions that impede capital inflows, is reflected by a reduction of the costs of capital, i.e. as an exogenous decline of R.[7]

[7]This modeling choice is in line with textbook presentations (see e.g. Obstfeld and Rogoff 1996, Ch. 1.3). Henry (2007) provides empirical evidence for 18 developing countries, which shows that the cost of capital decline when countries liberalize financial account transactions.

Assuming a linear production function in the modern sector, we can derive the net income of a representative entrepreneur as

$$\pi(t) = [1 - \tau(t)](\alpha - R) \ , \tag{3}$$

where α is an exogenous productivity parameter. Note that a reduction of the interest rate R has the same effect on profits as an increase in the productivity term α. Thus, for a given value of τ, financial integration entails efficiency gains for the entire economy. In what follows, we will use the short-hand notation $A \equiv \alpha - R$ and assume $A > 1$.

We consider the following two-stage sequence of events: in the first stage, the elite decides on the rate of expropriation τ, and in the second stage, members of the general population choose between alternative occupations (employment in the traditional sector vs. entrepreneurship), and then production takes place. We assume that τ cannot be changed *ex post*, i.e. the elite can credibly commit to the value of τ set at the beginning of period t. Given this assumption, we can characterize the general population's occupational choice. In equilibrium, both activities have to yield identical net incomes, i.e. the following condition has to be satisfied:

$$w(t) = \pi(t) \ . \tag{4}$$

Labor supply in sector T is thus given by

$$L(t) = A^{\frac{1}{\beta - 1}} \ . \tag{5}$$

Our assumption that $A > 1$ is sufficient for an interior solution with $L(t) < 1$. The relationship between A and the number of workers in the traditional sector is negative, since raising A raises entrepreneurs' profits. Hence, for a given rate of expropriation τ, financial integration – i.e. a decline of R – raises entrepreneurial activity and enhances capital inflows in our model.

We assume that expropriating the general population is associated with convex deadweight costs which are increasing in τ. Specifically, the income of the ruling elite is given by

$$y^E(t) = A\tau(t) - \frac{c}{2}\tau(t)^2 \ , \tag{6}$$

where we have used the fact that incomes of the general population are identical across occupations, and where $c > 0$ reflects the severity of the *economic costs of expropriation*, i.e. the economy's vulnerability to insecure property rights.

Combining (2), (3) and (6), we can compute gross national income Y as the sum of all agents' incomes:

$$Y(t) = A - \frac{c}{2}\tau(t)^2 \ . \tag{7}$$

Obviously, GNI increases as R decreases. Moreover, raising the rate of expropriation τ reduces Y, i.e., a deterioration of economic institutions is harmful for the aggregate economy. In what follows, we make the parametric assumption that completely expropriating the general population by setting $\tau = 1$ brings economic activity to a standstill and reduces GNI to zero:

Assumption 1 $A < c/2$.

This assumption rules out the uninteresting and implausible case in which the elite completely expropriates the private sector by setting $\tau = 1$.

2.2 Static Equilibrium

We assume that the ruling elite dominates the political process and chooses the rate of expropriation τ to maximize its utility. An elite member's utility is a linear function of the appropriated incomes of workers and entrepreneurs less the *political costs of expropriation* $C(\tau)$, which are given by

$$C(\tau) = \gamma\tau \ . \tag{8}$$

These political costs result from the resistance of the population to expropriatory policies by the elite. Even in an autocratic regime citizens have ways to oppose the ruling regime, like strikes, demonstrations etc. The parameter $\gamma \geq 0$ reflects the general population's de facto political power, i.e. it measures the marginal political costs of expropriation for the ruling elite. Hence, while de-jure political power rests with the elite, the rate of expropriation is constrained by the extent of popular discontent and the general population's ability to express this discontent through more or less formal types of rebellion. While we assume, for the time being, that γ is constant, we will later focus on the evolution of this parameter over time and its interaction with τ. Given our assumptions, the elite's optimization problem can be written as

$$\max_{\tau} U^E = A\tau - \frac{c}{2}\tau^2 - \gamma\tau \ . \tag{9}$$

By maximizing (9), we obtain the following interior solution for the rate of expropriation:

$$\tau^* = \frac{A - \gamma}{c} \ . \tag{10}$$

Note that Assumption 1 implies that τ^*, defined by (10), is always smaller than one. For high values of γ, the elite could, however, set $\tau^* = 0$, that is, it could choose not to expropriate at all. To exclude this outcome, which would leave members of the elite without any income, and to have sufficient scope for meaningful comparative statics, we make the following assumption:

Assumption 2 $\gamma < A$.

Figure 1 illustrates the intuition behind the result in (10): the horizontal line at A reflects the elite's marginal benefit from increasing τ. The upward-sloping line depicts the elite's marginal costs of expropriation. This line becomes steeper if the parameter c (determining the economic costs) increases, and it has a high intercept if the parameter γ (reflecting the political costs) is high. The intersection of both lines determines the optimal rate of expropriation τ^*.

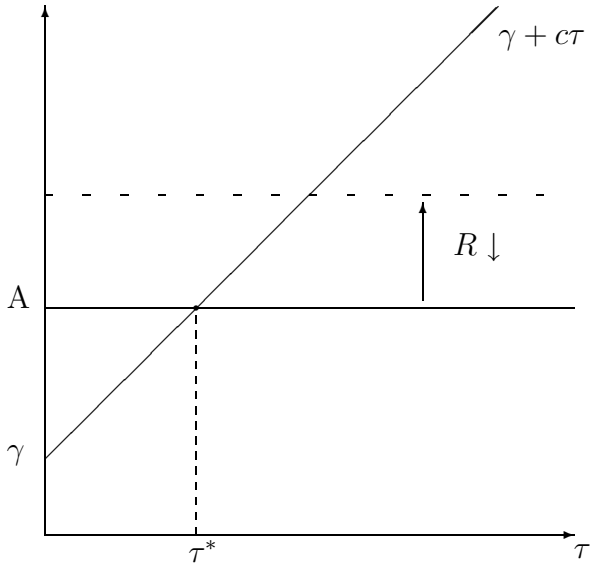

Figure 1: Optimal Expropriation Rate

With (10), we can easily analyze how the rate of expropriation reacts to changes of the exogenous parameters. Most importantly, τ^* declines in R, i.e.

$$\frac{\partial \tau^*}{\partial R} = -\frac{1}{c} < 0 \; . \tag{11}$$

Financial integration raises entrepreneurs' profits and thus the marginal benefit of expropriation. As a result, the horizontal line in Figure 1 shifts upward (as illustrated by the dashed line), and τ^* increases.

To compute the impact of financial integration on GNI and entrepreneurs' incomes, we need to take into account both direct and indirect effects: On the one hand, lowering R acts like a positive productivity shock and thereby raises GNI. On the other hand, the increased rate of expropriation chosen by the elite has a negative influence on π and Y. Substituting (10) into (3) and (7) we obtain the following equations for entrepreneurs' profits and GNI

$$\pi^* = \frac{(c+\gamma-A)A}{c} \qquad \text{and} \qquad Y^* = A - \frac{(A-\gamma)^2}{2c} \,. \tag{12}$$

Taking derivatives of (12) with respect to R yields

$$\frac{\partial \pi^*}{\partial R} = \frac{2A-c-\gamma}{c} \qquad \text{and} \qquad \frac{\partial Y^*}{\partial R} = \frac{A-c-\gamma}{c} \,.$$

Both expressions are strictly negative, i.e. financial integration – interpreted as a decline of R – unambiguously raises GNI and entrepreneurs' profits: while the rate of expropriation also increases, the direct "efficiency-enhancing" influence of easier access to foreign capital dominates. These insights are summarized in the following proposition:

Proposition 1 *In a static environment, financial integration raises the rate of expropriation τ. Nevertheless, both the income of the elite and the income of the general population increase.*

3 Dynamic Equilibrium with a Myopic Elite

So far we have used a static model to analyze the effect of an exogenous drop in the costs of external borrowing on the quality of institutions, i.e. the rate of expropriation chosen by a ruling elite. In that setting, financial integration influenced individuals' absolute and relative incomes, but the de facto political power of the non-elite (represented by the parameter γ) was unchanged.

It is likely, however, that a varying distribution of incomes also affects the distribution of power in a society. According to Acemoglu and Robinson (2006) political power is a function of material resources. If financial integration raises the disposable income of the general population, one should expect that this also raises its political power. To incorporate this idea into our model, we now switch to a dynamic analysis and determine how a permanent reduction of R affects the non-elite's de facto political power γ and the rate of expropriation τ^* in the short and in the long run. Specifically, we assume that the following process describes the evolution of γ over time:

$$\dot{\gamma}(t) = \psi\pi(t) - \delta\gamma(t) \,, \tag{13}$$

with $\psi \geq 0$ and $0 \leq \delta \leq 1$. According to equation (13), de facto political power accumulates over time, comparable to physical capital in a neoclassical growth model. The parameter ψ determines the speed at which a higher net income of entrepreneurs – which equals net wages in equilibrium – transforms into increased political power, while δ is the rate of depreciation.[8]

Building on this dynamic equation, we first analyze the equilibrium for the case in which the ruling elite is *myopic* – i.e., its members do not take into account that their decision on τ at a given point in time influences the accumulation of political power in the following periods. The case of a myopic elite may be interpreted as representing a setting in which members of the elite live for only one period and maximize their utility in this period.

A myopic elite sets the expropriation rate in each period according to (10) as in the static model, and (12) determines the net profit of the entrepreneurs. Recall that, due to Assumption 1, it is never optimal for the ruling elite to choose $\tau = 1$, i.e. the net income of the general population is always strictly positive. In the static analysis of the previous section, Assumption 2 made sure that the elite never sets $\tau^* = 0$ either. However, in the current context, γ is an endogenous variable whose value is determined by the mechanics of the model. As we will see, the following assumption is sufficient for a positive τ at all points in time:

Assumption 3 *$\gamma(0) < A$, and $\psi < \delta$.*

The following Proposition 2 summarizes the short- and long-run behavior of γ:

Proposition 2 *With a myopic elite, the political power of the non-elite and the rate of expropriation monotonically converge to the following steady state values:*

$$\gamma^{SS} = \frac{\psi A\,(c - A)}{c\delta - \psi A} \qquad \textit{and} \qquad \tau^{SS} = \frac{A\,(\delta - \psi)}{c\delta - \psi A} \,. \tag{14}$$

Proof. For $\gamma < A$, the evolution of γ can be determined by substituting (12) into (13). This yields

$$\dot{\gamma}(t) = \frac{\psi A}{c}\,(c - A) - \left(\delta - \frac{\psi A}{c}\right)\gamma(t) \,.$$

[8]Note that we neglect the collective action problem among the general population and that we concentrate only on material resources as the driving force of its de facto political power.

This differential equation is represented by the phase line in Figure 2. Assumptions 1 and 3 imply that this phase line is downward-sloping, implying convergence to the steady state. The assumption $\gamma(0) < A$ together with the downward sloping phase-line guarantee that $\gamma(t) < A$ for all $t \geq 0$. Inserting γ^{SS} into (10) yields τ^{SS}. ■

The evolution of the expropriation rate is inherently linked to the evolution of γ. Whether it increases or decreases over time depends on the initial value of γ: If $\gamma(0) < \gamma^{SS}$, then the de facto political power increases over time, and the rate of expropriation decreases. If $\gamma(0) > \gamma^{SS}$, the political power of the general population decreases and the rate of expropriation increases.

Note that abandoning Assumption 3 and allowing for $\psi \geq \delta$ is not compatible with a strictly positive rate of expropriation in the long run: According to the law of motion for γ as given by (3), $\dot{\gamma} > 0$ for all γ in $[0, A]$ if $\psi > \delta$. For $\gamma \geq A$, we have $\tau = 0$ and the law of motion is given by $\dot{\gamma} = \psi A - \delta\gamma$, which is strictly positive for $\gamma < \psi A/\delta$. Hence, regardless of its initial value, γ converges to a steady state that is incompatible with $\tau^* > 0$ if $\psi \geq \delta$.

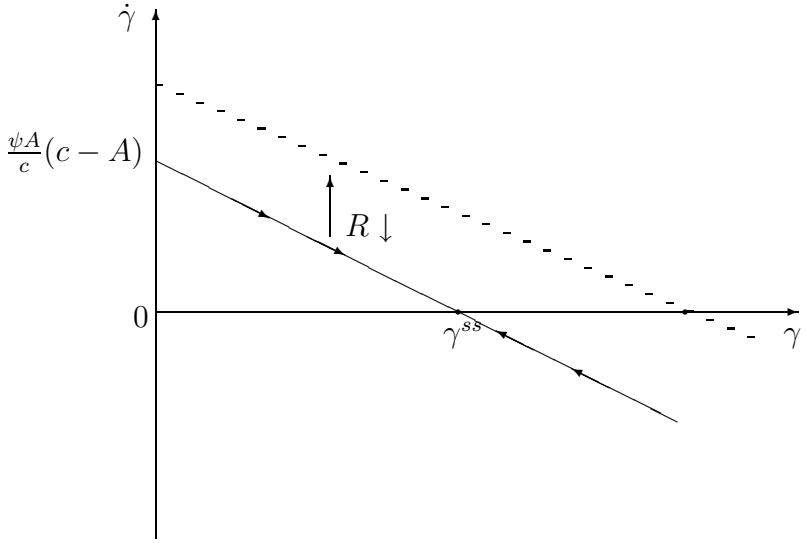

Figure 2: Evolution of γ and Steady State with a Myopic Elite

To determine how financial integration affects the general population's political power and the rate of expropriation in the long-run, we take the derivative of the steady-state value from Proposition 2 with respect to R (bearing in mind that $A \equiv \alpha - R$). This yields the following result:

$$\frac{d\gamma^{SS}}{dR} = \frac{\psi\left[(2A-c)\left(c\delta-\psi A\right)-\psi A(c-A)\right]}{\left(c\delta-\psi A\right)^2}\,. \tag{15}$$

Given Assumptions (1) and (3), this expression is strictly negative. Hence, financial integration improves the de facto political power of the general population in the steady state. The dashed line in Figure 2 illustrates this effect. A drop in R shifts the $\dot{\gamma}$-line to the right reducing also its slope. As a result, the new steady state γ^{SS} exceeds the previous one. Note that since $\pi^{ss} = \delta/\psi\gamma^{ss}$, financial integration also raises the net income of the general population.

The impact on the steady-state rate of expropriation τ^{SS} can be written as

$$\frac{d\tau^{SS}}{dR} = -\frac{1}{c}\left(1-\frac{d\gamma^{SS}}{dR}\right)\,.$$

Inserting (15) yields

$$\frac{d\tau^{SS}}{dR} = -\frac{c\delta(\delta-\psi)}{\left(c\delta-\psi A\right)^2}\,, \tag{16}$$

which is negative. Thus, the long-run rate of expropriation increases as the interest rate falls, comparable to the static stetting of the previous section. However, the influence of financial integration is weakened by the increase in the political power of the general population, which dampens expropriation by the elite.

Interestingly, the adjustment path of τ to the new steady state after financial liberalization is characterized by overshooting. An increase of A induces the elite to raise τ according to (10). In subsequent periods, however, the general population's incomes and de facto political power increase, which reduces τ. In the long-run the rate of expropriation converges to a value that is higher than in the old steady state, but lower than in the period immediately after the onset of financial integration.

4 A Forward-Looking Elite

The analysis in the preceding section was based on the assumption that, when setting the rate of expropriation in period t, the ruling elite does not take into account how this decision affects the general population's de facto political power and the scope for expropriation in subsequent periods. If we replace this assumption by the notion of a *forward-looking* elite, the elite has now an additional motivation to expropriate the general population, namely, to avoid a future rise in the endogenous costs of expropriation.

With an infinite time horizon and an individual discount rate of $\rho > 0$, the elite maximizes:

$$\int_0^\infty e^{-\rho t} U^E[\tau(t), \gamma(t)] dt \ , \tag{17}$$

s.t.

$$\dot{\gamma}(t) = \psi A[1 - \tau(t)] - \delta\gamma(t) \quad \text{and} \quad \gamma(0) \quad \text{given} \ .$$

The present value Hamiltonian function takes the following form:

$$H = e^{-\rho t}[A\tau(t) - \gamma(t)\tau(t) - \frac{c}{2}\tau(t)^2] + \lambda(t)[\psi A[1 - \tau(t)] - \delta\gamma(t)] \ , \tag{18}$$

where the costate variable $\lambda(t)$ denotes the elite's marginal disutility from political resistance.

Combining the first-order conditions for the optimal time-path of τ, we obtain the following differential equation that characterizes the evolution of τ:

$$\dot{\tau}(t) = (\delta + \rho)\tau(t) + \frac{(2\delta + \rho)}{c}\gamma(t) - \frac{A(\delta + \psi + \rho)}{c} \ . \tag{19}$$

Equations (13) and (19) constitute a system of two linear differential equations which describe the evolution of the expropriation rate and the non-elite's political power in this economy. Before starting to analyze the dynamics of the system, we first determine the steady state levels τ^{SS} and γ^{SS}. Setting $\dot{\tau} = 0$ and $\dot{\gamma} = 0$ we obtain

Proposition 3 *With a forward-looking elite, the steady state values for the political power of the non-elite and the rate of expropriation are given by*

$$\begin{aligned} \tau^{SS} &= \frac{A(\delta - \psi)(\delta + \rho)}{c\delta(\delta + \rho) - \psi A(2\delta + \rho)} \quad \textit{and} \\ \gamma^{SS} &= \frac{\psi A\left[c(\delta + \rho) - A(\delta + \psi + \rho)\right]}{c\delta(\delta + \rho) - \psi A(2\delta + \rho)} \ . \end{aligned} \tag{20}$$

Assumptions 1 and 3 are sufficient for $0 < \tau^{SS} < 1$ and $\gamma^{SS} > 0$. For a further interpretation of the steady state we can derive from (13) and (19) the following expression:

$$\tau^{SS} = \frac{A - \gamma^{SS}}{c} + \frac{\tau^{SS}\psi A}{c(\delta + \rho)} \ .$$

Compared to a myopic elite, a forward-looking elite has an additional incentive to expropriate as it thereby reduces the political power of the general population. This effect is given by the second term in the above equation.

Consequently, the long-run rate of expropriation is higher and the de facto political power is lower than in the case of a myopic elite. This follows from comparing (14) with (20).

To analyze the dynamic properties of the model, we rewrite (13) and (19) in matrix form as:

$$\begin{pmatrix} \dot{\tau} \\ \dot{\gamma} \end{pmatrix} = \begin{pmatrix} \delta+\rho & \frac{2\delta+\rho}{c} \\ -\psi A & -\delta \end{pmatrix} \begin{pmatrix} \tau \\ \gamma \end{pmatrix} + \begin{pmatrix} -\frac{A(\delta+\psi+\rho)}{c} \\ \psi A \end{pmatrix} .$$

Denoting by J the Jacobian matrix, we get:

$$\det|J| = -\delta(\delta+\rho) + \frac{\psi A(2\delta+\rho)}{c} < 0 \qquad \text{and} \qquad tr(J) = \rho > 0 \, .$$

Thus, the system is saddle-path stable such that a unique adjustment path determines the dynamics of the system. The elite chooses the value of $\tau(0)$ to be on the saddle path, as only this path guarantees convergence to the steady state (τ^{SS}, γ^{SS}). For any other choice of $\tau(0)$, the system's dynamics would either drive the expropriation rate down to zero or to one, implying a GNI of zero. In both cases, the elite would be without any income. Since the elite has an interest in avoiding this outcome, it rationally chooses a point on the saddle path.

The phase diagram in Figure 3 illustrates these findings and confirms our analytical results. The corresponding zero-motion lines are given by

$$\begin{aligned} \dot{\gamma} = 0: \quad & \gamma = \frac{\psi A}{\delta} - \frac{\psi A}{\delta}\tau \quad \text{and} \\ \dot{\tau} = 0: \quad & \gamma = \frac{A(\delta+\psi+\rho)}{2\delta+\rho} - \frac{c(\delta+\rho)}{2\delta+\rho}\tau \, . \end{aligned}$$

Note that the line representing $\dot{\gamma} = 0$ is flatter than the line representing $\dot{\tau} = 0$.

To analyze the consequences of financial integration in this setting, we start by deriving the impact of a decline of R on the expropriation rate and the non-elite's political power in the steady state. Taking the derivatives of (20) yields:

$$\frac{d\tau^{SS}}{dR} = \frac{c\delta(\psi-\delta)(\delta+\rho)^2}{[c\delta(\delta+\rho) - \psi A(2\delta+\rho)]^2} \quad \text{and} \tag{21}$$

$$\begin{aligned} \frac{d\gamma^{SS}}{dR} = & \frac{\psi A(\delta+\psi+\rho)\left[c\delta(\delta+\rho) - \psi A(2\delta+\rho)\right]}{[c\delta(\delta+\rho) - \psi A(2\delta+\rho)]^2} \\ & - \frac{\psi c\delta(\delta+\rho)\left[c(\delta+\rho) - A(\delta+\psi+\rho)\right]}{[c\delta(\delta+\rho) - \psi A(2\delta+\rho)]^2} \, . \end{aligned} \tag{22}$$

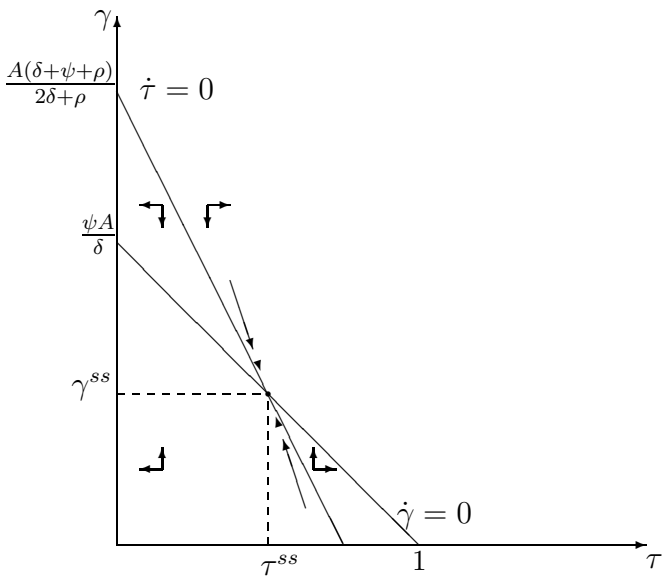

Figure 3: Adjustment Path with a Forward-Looking Elite

Since $\psi < \delta$, equation (21) implies that $d\tau^{SS}/dR < 0$. Similar to our previous result in the myopic case, the elite expropriates additional efficiency gains caused by a reduced interest rate. Yet, the marginal influence on the expropriation rate is now stronger, since the elite also takes into account the potential increase in the non-elite's political power.[9] Hence, τ^{SS} increases as R declines. By contrast, the sign of $d\gamma^{SS}/dR$ is ambiguous. Depending on the model parameters, the effect of the increased expropriation can dominate the effect of the reduced capital costs such that the entrepreneurs' net profits and thereby γ may even decrease after financial liberalization.

In the following we demonstrate the relation between γ^{SS} and R more in depth. For $\psi \to \delta$ we can write (22) as $d\gamma^{SS}/dR|_{\psi\to\delta} = -1$. Note that in this case, τ^{SS} approaches zero, such that we only have a positive effect of a decline of R on γ^{SS}. Conversely, for $\psi \to 0$, we get $d\gamma^{SS}/dR|_{\psi\to 0} = \psi(2A-c)/(c\delta)$. This term approaches zero from below. Thus, for very high and very low levels of ψ, a decline in R raises the political power of the general population. If ψ takes intermediate values, however, the outcome depends on the size of expropriation costs c and the productivity term A. If c is rather small, there is an interval $[\underline{\psi}, \overline{\psi}]$ for which the expropriation effect is stronger than the positive direct effect of liberalization on private incomes and consequently, $d\gamma^{SS}/dR > 0$. The size of this interval increases in A, such that a negative influence of a decline in R on γ^{ss} is more likely if the initial cost of capital

[9] This follows from comparing (16) with (21).

R is comparatively low (or the exogenous productivity α is comparatively high).[10] These different outcomes are illustrated in Figure 4, which depicts the numerator of (22), denoted by $F(\psi)$.[11] For a relative low value of c, the function $F(\psi)$ intersects the zero line twice (solid line), generating an interval in which $F(\psi) > 0$ and thereby $d\gamma^{ss}/dR > 0$. By contrast, if c is relatively high, the function $F(\psi)$ - and thus $d\gamma^{ss}/dR$ - takes only negative values. We conclude that the relation between c and A is crucial for the dependence of γ on R. If expropriation is relatively costly (high c), the direct effect of a liberalization on individual incomes dominates the expropriation effect, and, as a result, γ^{SS} increases as R declines. However, for low expropriation costs, the de facto political power of the general population may permanently decline after financial liberalization.

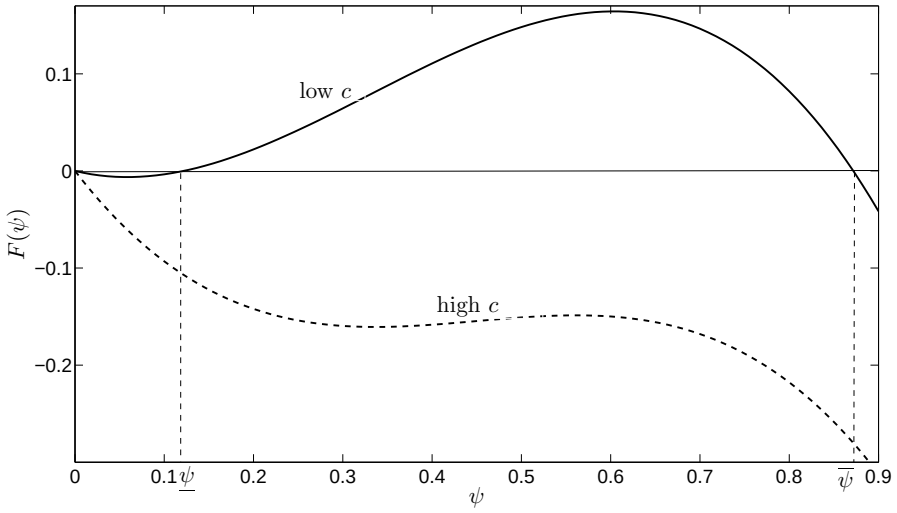

Figure 4: $F(\psi)$ in Dependence on ψ

[10] Setting the numerator of (22) equal to zero, we obtain the following critical values of $\underline{\psi}$ and $\overline{\psi}$:

$$\underline{\psi}, \overline{\psi} = \frac{(\delta+\rho)(2c\delta - A(2\delta+\rho))}{2A(2\delta+\rho)} +/- \frac{\sqrt{[(\delta+\rho)(2c\delta - A(2\delta+\rho))]^2 + 4Ac\delta(\delta+\rho)^2(2-\frac{c}{A})(2\delta+\rho)}}{2A(2\delta+\rho)}.$$

Taking the derivatives of the difference $\overline{\psi} - \underline{\psi}$ with respect to A and rearranging terms shows that $\frac{\partial(\overline{\psi}-\underline{\psi})}{\partial A} > 0$. That is, the size of the interval increases in A.

[11] For this numerical exercise, we have chosen the following parameter values: $\rho = 0.11$, $\delta = 0.9$, $A = 1$, $c_{low} = 2.2$, $c_{high} = 2.6$.

The impact of financial integration on the steady state levels of expropriation and the non-elite's political power can also be illustrated in a phase-diagram. An increase in A shifts the $\dot{\tau} = 0$ and the $\dot{\gamma} = 0$ lines rightwards and also raises the slope of $\dot{\gamma} = 0$. Whereas the new level of τ^{SS} definitely exceeds the old one, the level of γ^{SS} might be lower (Figure 5) or higher (Figure 6) than before.

We summarize the above findings as follows: With a forward-looking elite, financial integration leads to a higher rate of expropriation in the steady state, whereas the non-elite's de facto political power may rise or decline. The different outcomes related to the long-run behavior of γ also have implications for the adjustment path of τ. If financial integration reduces the non-elite's political power in the long run, τ increases in the course of time until a new steady state is reached. By contrast, in the case of a positive impact of financial integration on γ, the rate of expropriation overshoots. As in the case with a myopic elite, τ increases on impact as a reaction to a reduced R and then gradually declines as the general population accumulates political power.

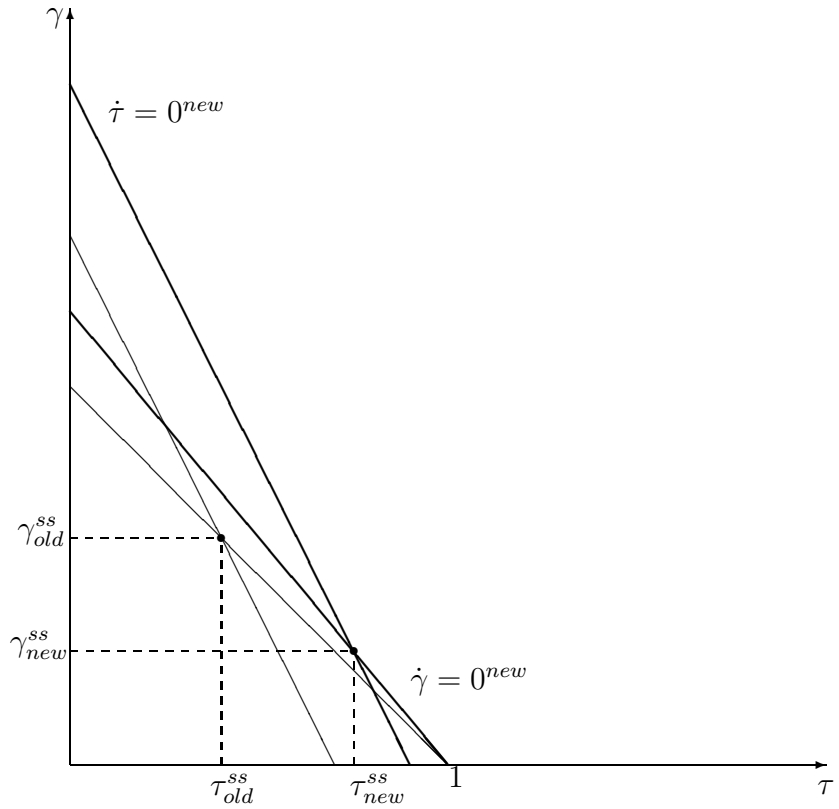

Figure 5: Financial Integration: γ^{ss} Decreases

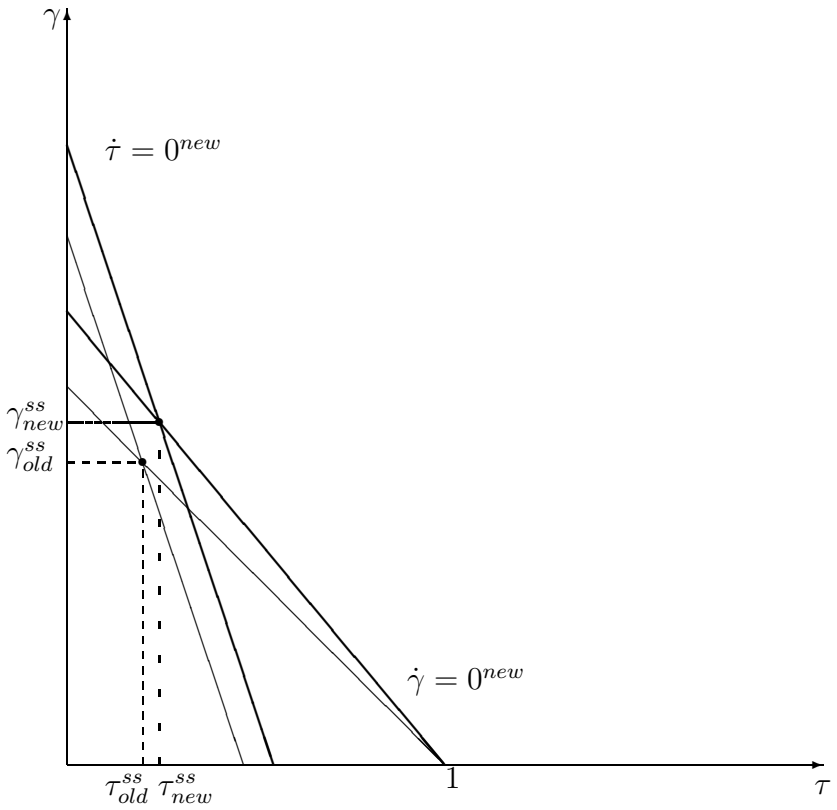

Figure 6: Financial Integration: γ^{ss} Increases

In the static as well as in the dynamic setting with a myopic elite, we have shown that, despite of a higher rate of expropriation, the non-elite's income and GNI increase after financial integration. Our results concerning the reaction of the non-elite's political power with a forward-looking elite suggest that the impact of financial integration on total income is ambiguous. Because of an increased rate of expropriation, financial integration raises the elite's income. However, since γ^{SS} proportionally reacts to changes in π^{SS}, the general population's income may decline. As a result, GNI may decline, too.

5 Political Power of Entrepreneurs

In the previous sections, the political costs of expropriation were entirely determined by the aggregate income of the general population. The composition of the population, consisting of workers and entrepreneurs, did not play any role in this respect. However, there are good reasons to believe that the group of entrepreneurs is more influential than the working class. For example, entrepreneurs may represent a smaller group and therefore be easier to organize politically, or an entrepreneur may acquire certain knowledge and skills in her position which are also helpful for executing political

pressure. Financial integration may then have an additional influence on the political equilibrium by raising the size of the entrepreneurial class.

To account for this effect, we modify our model in this section by considering the case in which workers are politically inactive such that only the income of the entrepreneurs matters for the political costs of expropriation. With this assumption, equation (13) takes the following form:

$$\dot{\gamma}(t) = \psi\pi(t)\left[1 - L(t)\right] - \delta\gamma(t)\ , \tag{23}$$

where $L(t) = A^{1/(\beta-1)}$ according to (5). In what follows, we limit the dynamic analysis to the case in which the elite is myopic. The results obtained for this case enable us to discuss possible outcomes with a forward-looking elite without explicitly deriving them. Inserting (12) into (23) and rearranging terms yields

$$\dot{\gamma}(t) = \psi\left(\frac{c-A}{c}\right)A\left(1-L\right) - \left[\delta - \frac{\psi A}{c}\left(1-L\right)\right]\gamma(t)\ .$$

Again, Assumptions 1 and 3 guarantee convergence to the steady state which is now given by:

$$\gamma_n^{SS} = \frac{\psi A\left(c-A\right)\left(1-L\right)}{c\delta - \psi A\left(1-L\right)} \qquad \text{and} \qquad \tau_n^{SS} = \frac{A\left[\delta - \psi\left(1-L\right)\right]}{c\delta - \psi A\left(1-L\right)}\ . \tag{24}$$

The new steady state levels of γ and τ are similar to their counterparts in (14). However, since we only use entrepreneurs' income as a driving force of political costs of expropriation, γ_n^{ss} is now lower and, accordingly, τ_n^{ss} is higher than in the basic setup. The long-run impact of financial integration also differs from our previous results. By taking the derivatives of (24) with respect to R, we obtain:

$$\frac{d\tau_n^{SS}}{dR} = -\frac{c\delta\left[\delta - \psi(1-L)\right] + \delta\psi L(c-A)(\beta-1)^{-1}}{\left[c\delta - \psi A\left(1-L\right)\right]^2} \quad \text{and} \tag{25}$$

$$\frac{d\gamma_n^{SS}}{dR} = \frac{\psi(1-L)(2A-c)\left[c\delta - \psi A(1-L)\right]}{\left[c\delta - \psi A\left(1-L\right)\right]^2} - \frac{\psi(c-A)\left[\psi A(1-L)^2 + c\delta L(1-\beta)^{-1}\right]}{\left[c\delta - \psi A\left(1-L\right)\right]^2}\ . \tag{26}$$

The derivative (26) is strictly negative as in section 3. A decline in R not only increases entrepreneurs' net profits, but also their number, such that we have an additional positive effect of financial integration on γ. The influence

of financial integration on the expropriation rate, as shown in (25), is now ambiguous. Due to the stronger rise in the endogenous costs of expropriation, the elite is not able to tax the population as high as before, such that τ_n^{SS} may even fall after financial integration.

The expansionary effect of financial integration on the number of entrepreneurs is also valid in a situation with a forward-looking elite. The key reason is that expropriation does not influence the occupational choice of the general population. The elite therefore can not eliminate this effect by raising τ, and the long run rate of expropriation may decrease as result of financial integration.

6 Concluding Remarks

The aim of this paper was to present a theoretical framework that can be used to analyze the influence of financial integration on the quality of domestic institutions. Setting up a model of a small capital-importing country with an autocratic regime, we were able to identify two different forces that determine the effects of liberalization: On the one hand, a better access to foreign capital raises the income earned in the private sector and thereby gives the ruling elite higher incentives to expropriate the general population. On the other hand, due to its improved economic situation, the population may become more powerful politically to oppose such an expropriation. In most of the cases we have considered in this paper, the rate of expropriation rises after a financial liberalization, implying a worsening of institutional quality. Regarding the evolution of institutional quality, we have demonstrated that the rate of expropriation tends to overshoot as a reaction to a reduction in capital costs. That is, the long run level of the rate of expropriation is lower than that in the period immediately after the onset of financial integration.

The effects on the net income and therewith on the political power of the general population depend on the time horizon of the elite. With a myopic elite, the net income increases despite a higher rate of expropriation, whereas in the case of a forward-looking elite, the influence of financial liberalization is ambiguous. If the economic costs of expropriation are relatively high or if the general population has either a very high or a very low ability to transform its income into political costs of expropriation, the general population benefits from a better access to foreign capital. In other cases, however, the influence of a reduction in capital costs on the net income depends on the initial situation: A country with high initial costs of foreign capital may benefit from a liberalization whereas the opposite may be true for a country which is better integrated. The benefits are more likely in combination with a low

initial productivity. Since the relationship between a reduction in capital costs and the non-elite's income changes from positive to negative, the effect of financial liberalization on income can be non-linear.

We have further shown that in situations in which only the group of entrepreneurs can exert political pressure on the ruling elite, financial integration causes an additional group size effect, which raises the political costs of expropriation. As a consequence, the equilibrium rate of expropriation may decline due to financial integration.

Our results are subject to some important caveats: First, by abstracting from domestic capital supply, we were able to focus on the redistribution of incomes between the ruling elite and a population of workers and entrepreneurs. With a domestic capital stock, one would have to consider capital owners as an additional group in the society, whose members would be affected by financial integration. In this case distributional conflicts between labor and capital would enter the picture. Moreover, domestic savings and the accumulation of financial wealth would influence the political costs of expropriation in the short and the long run. Second, the economic costs of expropriation were assumed to be independent of the conditions on the capital market. A more general approach should take into account the fact that capital mobility also affects the economic distortions caused by an expropriation tax. Third, in our framework, the ruling elite can only expropriate domestic residents but not foreign investors. Allowing for this possibility would add a further channel through which financial integration affects institutional quality.

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Capital Inflows and Change in Institutional Quality 1996-2004[1]

Country	Capital Inflows in Millions US $	Change in Rule of Law	Change in Control on Corruption	Average Democracy Index[2]
Albania	724,71	-0,77	-0,77	5,11
Angola[R]	8986,61	0,18	-0,24	-2,56
Armenia	1061,28*	-0,13	0,01	2,56
Azerbaijan[R]	8164,88	0,10	-0,10	-6,78
Bangladesh	4320,61	-0,17	-0,83	6,00
Belarus[D]	3745,95	-0,31	-0,01	-7,00
Bolivia[R]	4636,72	-0,29	0,16	8,78
Brazil[R,D]	143984,31	-0,12	0,18	8,00
Burkina Faso	228,20	-0,27	0,15	-2,22
Chad[R]	3351,16	-0,26	-0,17	-2,00
Chile[D]	10716,34	-0,06	0,11	8,56
Colombia	8969,82	-0,15	0,28	7,00
Congo	1503,25	0,14	-0,08	-4,00
Costa Rica[D]	4755,01	0,03	-0,25	10,00
Czech Republic[D]	34470,82	-0,17	-0,22	10,00
Dominican Rep.	5158,20	-0,02	-0,16	8,00
Ecuador	9423,03	-0,30	0,06	7,22
Equatorial Guinea[R,D]	3085,15	-0,05	-0,56	-5,00
Fiji[D]	176,68*	-0,27	-0,33	5,33
Guatemala	365,05	-0,09	0,47	8,00
Guinea[R]	233,17	0,28	-1,28	-1,00
Haiti	808,48*	-0,30	-0,39	1,86
Hungary[D]	70674,58	-0,02	0,05	10,00
Israel[D]	1808,63	-0,47	-0,64	9,67
Jamaica[D]	2680,34	-0,24	-0,15	9,00
Kazakhstan[R,D]	14882,16	-0,19	-0,22	-4,67
Kyrgystan	639,30	-0,19	-0,16	-3,00
Laos	828,43	0,65	-0,05	-7,00
Lebanon[D]	16998,82	0,00	-0,32	n.a.
Macedonia	276,41	-0,08	0,59	7,00
Madagascar	263,49	0,84	-0,50	7,33
Malawi	1078,17*	0,28	-0,30	5,44
Mali	537,27	0,39	-0,14	6,11
Moldovia	897,77	-0,52	-0,74	7,44
Myanmar	3582,82	-0,31	-0,45	-7,11
Niger	569,44*	0,13	-0,51	1,44
Papua New Guinea	203,84	0.56	-0,62	4,00
Paraguay	670,99	-0,57	-0,72	7,11
Peru	3858,94	-0,05	-0,16	5,00
Phillippines	8379,03	-0,61	0,33	8,00
Poland[D]	97567,40	-0,24	-0,19	9,33
Romania[D]	22882,04	-0,02	-0,02	8,11
Slovenia[D]	5382,56	0,00	-0,05	10,00
Sudan[R]	4364,69	0,12	-0,17	-6,67
Swaziland	30,81	-1,68	-0,61	-9,00
Tanzania	450,47	-0,02	0,43	-1,44
Trinidad[D]	3407,58	-0,61	-0,84	9,89
Turkey[D]	86973,22	0,12	-0,18	7,11
Uganda	1136,22	-0,09	-0,20	-4,00
Uzbekistan	2715,10	-0,36	-0,09	-9,00
Vietnam	8630,09	0,12	-0,25	-7,00
Zimbabwe	727,56*	-0,99	-1,12	-4,44

[1] Capital inflows are measured as a decline in the net external position. Data stem from Lane and Milesi-Ferretti (2006). Data for Corruption and Rule of Law are taken from World Governance Indicators by Kaufmann et al. (2008)

[2] This average democracy index is adopted from Polity IV Project. It catagorizes governments with the index level from -10 to -6 as "autocracies" from -5 to +5 as "anocracies" and from +6 to +10 as "democracies".

* Data span is available only for a shorter period of time. [R] Indicates that the country is rich in nature resources.

[D] Stands for upper middle income and high income countries according to the World Bank classification. Economies are divided among income groups according to 2007 gross national income (GNI) per capita. The groups are: low income, $935 or less; lower middle income, $936–3,705; upper middle income, $3,706–11,455; and high income, $11,456 or more.