

Press Freedom, Human Capital and Corruption

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Abstract

In this paper we investigate the relationship between corruption, human capital, and the monitoring capacities of civic society, as proxied for example by press freedom and an independent judicial system.

In a theoretical model we find the impact of education on corruption to depend on the capacities of civic society to monitor government. If those capacities are well developed, education decreases corruption, whereas it may lead to higher corruption if civic monitoring is low. We find empirical evidence to support this result.

Furthermore we investigate the direct relation between corruption and press freedom. We find little evidence that corruption negatively affects press freedom. However, we find strong empirical evidence that a lack of press freedom leads to higher levels of corruption. This implies that strengthening press freedom should be among the priorities in the fight against corruption.

Key Words: Corruption, Political Economy, Press Freedom

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"Society does not believe the President when he says he will fight against the Mafia because a large part of the public sees him almost as the boss. ...The President doesn't even believe it himself when he says he is fighting the Mafia."
(Former Argentine Interior Minister speaking about Carlos Menem)

1. Introduction

The current empirical literature on corruption mainly stresses its historical roots. Treisman (1999) for example claims that low corruption levels can be largely explained by being a developed country, being protestant, having a British legal culture, not being federal, having had long periods of democracy, and having large exposure to trade. Notwithstanding these findings, the international community in its fight against corruption has so far been mainly relying on national governments. However, while some politicians are honestly interested in reducing corruption levels in their countries, other politicians are considered by their citizens to be among the main beneficiaries of corrupt practices, and their commitment to increasing transparency in their countries seems questionable.

Maybe in response to this problem, the international donor community has recently started stressing the need for strengthening civic society at large. While we would not argue with this -albeit vague- demand, there is a lack in economic literature about more concrete propositions so far, maybe with the exception of Ades/DiTella(1997b) who stress the need for an independent judicial system.

We would like to focus on another pillar of civic society, namely press freedom, and show its importance in fighting corruption. Though there might be scepticism about the scope for influencing levels of press freedom in countries where governments are not seriously interested in transparency, we do not share this view. The international donor community might make financial help dependent on respect for press freedom, as press freedom -contrary to corruption- is very directly under the control of central government, and in addition can be evaluated fairly easily. In those countries where press freedom is less under threat from politicians, but rather from strong business interests controlling large parts of the media, the international donor community could help by financially supporting or directly taking stakes in remaining independent media¹.

¹To give a concrete example: the major Russian business newspaper Kommersant was last

In the following we examine two channels through which press freedom can influence on corruption. We investigate the direct connection between press freedom and corruption. We find little evidence that corruption negatively affects press freedom, however we present strong evidence indicating a causation in the opposite sense, that is low levels of press freedom lead to high levels of corruption.

In addition we examine an indirect channel. Empirically there is generally a high negative correlation between all variables of economic development (e.g. per capita GDP or human capital) and corruption levels, and this has been interpreted as proof that education decreases corruption². We show however that this positive correlation does not necessarily hold at the margin, that is that increases in education do not necessarily decrease corruption. We develop a simple model where bureaucrats abuse their position to seek bribes, but risk detection for unlawful behaviour. The probability of being detected and fined depends on the efficiency of a monitoring instancy, such as a free press or an independent judicial system. A general increase in human capital will now lead to an increase in the efficiency of these monitoring agencies, but will at the same time increase the capacity of bureaucrats to extract bribes unpunished.

Our main theoretical result is that the impact of changes in education on corruption depends on how well civic society monitors those who enjoy the power of public office. In a country with well developed monitoring agencies, more education decreases corruption, whereas it may lead to higher corruption otherwise. Simplifying somewhat, this possible negative impact of education on corruption results from the fact that, in the absence of any efficient control mechanism, educated agents may simply use their newly acquired capacities to become more efficient corruption rent seekers. Using a 12 year panel data set of 130 countries, and press freedom as a proxy for the quality of a society's monitoring agencies, we find empirical support for this conjecture.

There is little literature on the relation between corruption and civil liberties. However, a somewhat related question is addressed in Isham/Kaufman/Pritchett (1997), who show that in countries with more developed civic liberties the performance of government projects is greatly improved. On the relationship between education and corruption, Mauro (1998) empirically finds corruption to re-

year bought up by Boris Berezovsky, the probably most infamous Russian oligarch, who already controls already a large part of the Russian media. In the opinion of the author it would have been a worthy cause to invest (and even to loose) some European taxpayers money -for example via the EBRD- to prevent an influential indepent voice in Russia from being silenced.

²Ades/DiTella(1997a) in a cross-section sample of 32 countries find empirically that education reduces corruption.

duce government spending on education. Acemoglu/Verdier (1998/2000), though mainly with regard to property rights and market failure, investigate theoretically the relationship between corruption and the allocation of talent in a general equilibrium framework.

In section 2 we develop the theoretical model sketched above. Section 3 details data and methodology, and section 4 presents the empirical results about corruption, press freedom and education. Section 5 finally investigates the direction of causation between press freedom and corruption.

2. A Model of Corruption and Education

Suppose an economy to consist of bureaucrats and normal citizens, where bureaucrats, by their profession, provide monopolistically a service that citizens need. Given their monopolistic power bureaucrats might thus extract a rent from citizens in the form of a bribe B . But this gain for bureaucrats does not come without risk. The higher the bribe rate b an official demands (the bribe rate being the percentage of the value of the service he provides that he demands for himself), the higher his risk of being caught and sentenced for corruption as a citizen might prefer not to obtain the service and instead denounce the corrupt official.

We consider it to be realistic to assume that better educated bureaucrats can provide higher quality goods or services. For example one might think that an educated bureaucrat delivers a service faster or with a smaller risk of error, etc. Thus, as the service of the bureaucrat is of higher value to his client, he can extract a higher bribe from him for a given bribe rate.

Now the probability P_D for an corrupt official to get detected and sentenced to pay a fine F is not independent of the society he lives in. If there is some monitoring agency M , as for example a free press or an independent justice, the risk for corrupt agents of being discovered and punished rises with the power and capacity of these monitoring agencies. Thus the probability of being caught will rise with higher overall levels of education in society, if such an increase leads to a higher efficiency of the monitoring institutions. Nevertheless more educated officials are equally more sophisticated in rent extraction and thus have a lower risk of being caught than a less educated one.

The utility of an official will now be his wage w plus the expected bribe minus the expected fine

$$U = B * (1 - P_D) + w - P_D * F$$

where B , the rent he extracts, increases with the bribe level b he chooses and with the quality of his services, described by his human capital h_B , that is $B(b, h_B)$

His probability of being detected and sentenced $P_D(h_B, b, M(h_M))$ is decreasing with his own human capital h_B , but rises with the chosen bribe rate b . In addition it rises with monitoring of his activity, $M(h_M)$, that itself depends positively on the level of human capital of the monitors h_M .

Taking all this into account, the one period utility for an official is

$$U(b, h, F, w) = B(b, h_B)(1 - P_D(h_B, b, M(h_M))) + w - P_D(h_B, b, M(h_M)) * F$$

For neutrality we assume the human capital level of all agents in the economy to be equal, that is $h = h_B = h_M$.

Having dealt so far with the one period model for expositional clarity, we now consider a multiperiod model, as obviously a bureaucrats decision about bribetaking will depend on his future income stream from his job. We assume that a bureaucrat caught in corruption has to pay a fine F . A bureaucrat now maximises the net present utility of his income stream. We write this problem as a dynamic programming problem, where for convenience we normalize the wage to 0. To gain notational clarity we equally drop the parameters in the B and P functions. A bureaucrat maximises thus

$$\underset{\{b\}_{t=1 \dots \infty}}{Max} E[U_t(b_t, h, w)] = B * [1 - P_D] - F * P_D + \delta * E[U_{t+1}(b_{t+1}, h, w)] \quad (2.1)$$

where the last term $\delta E[U_{t+1}]$ describes the bureaucrats continuation value ($\delta (<1)$ being the discount factor).

Under the assumption that wage, human capital, and the functions B and P_D are time independent, the first order condition of the optimisation problem thus simplifies to (dropping the index D in the probability function to avoid confusion with partial derivatives):

$$B_b(1 - P) - BP_b - FP_b = 0 \quad (2.2)$$

that is a bureaucrat will choose his bribe level b so as to solve the above equation.

What is now the impact of a general rise in human capital on corruption, that is the bribe rate? Define $G(b, h) := B_b(1 - P) + BP_b - P_bF$. Implicit differentiation of G yields

$$\frac{\partial b}{\partial h} = - \frac{B_{bh}(1 - P) - B_b [P_M M_h + P_h] - B_h P_b - (B + F) P_{bh}}{\frac{\partial G}{\partial b}}$$

Straightforward calculation (using the fact that the second order condition of equation 2.1 must be negative to insure that the bribe rate is actually maximised) shows that $\frac{\partial G}{\partial b}$ is always negative. We simplify further by assuming that the cross derivative $P_{bh} = 0$, reasonable as we have no economic reason to make any qualified assumption about its sign. Thus education will increase corruption if $\frac{\partial b}{\partial h}$ is positive, that is if

$$\underbrace{B_{bh}[1-P]}_{1(+)} + \left[\underbrace{-P_M M_h B_b}_{2(-)} - \underbrace{P_h B_b}_{3(+)} \right] \underbrace{-P_b B_h}_{4(-)} > 0$$

The first term accounts for the possibility of a more educated bureaucrat to extract higher rents. Making the reasonable and natural assumption of B_{bh} being positive (that is an increase in a bureaucrats human capital, and thus the value of his service, increases his bribe the more the higher his bribe rate) we thus find that an increase in overall education leads to a rise in corruption due to the fact of a higher productivity of bureaucrats. The second term, which describes the increase of the probability of being caught due to an increase in the capacities of the monitoring agencies is negative. Consequently an increase in overall education leads to a fall in corruption via this monitoring term. The third term which turns out to be positive captures the increase in corruption due to the fall in the probability of being caught that is caused by a (more educated) bureaucrat's increasing level of sophistication. The fourth term finally describes the fall in corruption due to the increase in the probability of being caught due to the fact that better educated bureaucrats go for higher bribe rates.

The essential information of this equation is that an increase in education is likely to increase corruption through the impact of terms 1 and 3, unless it is counterbalanced by a sufficient increase in the term $P_M M_h$. We can interpret P_M as a proxy for the effectiveness of the monitoring institutions, as for example represented in their independence. We would thus expect education to reduce corruption if a country has sufficiently independent monitoring systems, as for example a free press and an independent judiciary system, a hypothesis we are going to test in the following.

3. Data and Methodology

As in our analysis we mainly care about the dynamic dimension, we do not use the widely known "Transparency International" data for corruption, as these data

are only consistently available on a regular basis since 1996. Instead we use a corruption perception index compiled by a private risk rating agency "Political Risk Services Group" that is regularly published in the ICRG (International Country Risk Guide). This index is based on less information than the TI Index, but has the advantage of being consistently available for a relatively long period (we use data from 1984-1996) and about 130 countries. To measure press freedom, we use yearly data that we obtained from "Freedom House" yearly reports (1980-1997) on press freedom in the world. We generally scale variables to fluctuate between 0-10, where higher numbers indicate a better state of the world, that is respectively higher levels of press freedom, or lower corruption levels.

As proxies for a society's level of higher education we use the tertiary enrollment levels from the World Bank's 1999 "World Development Indicators". We furthermore use per capita GDP (in PPP terms) and trade openness (trade as % of GDP) from the same World Bank tables. We finally use an index about the rule of law from the above-mentioned ICRG publication.

Following the theoretical model developed in section 2 we would expect higher education to have a more beneficial impact on corruption in countries with better monitoring institutions (as a free press or an independent justice) than in countries where civil monitoring is poorly developed. We thus divide our sample, looking separately at countries that are classified to have no press freedom, to have a partly free press, and to have a free press.³ We then for all three samples run identical regressions where we try to explain corruption levels through education. In reality it does not seem reasonable to expect basic education to greatly improve an agent's rent seeking capacity. However higher education should improve agents' rent seeking capacities, and at the same time their ability to assess the actions of those in power. Thus, only for higher education we would expect its impact to depend on a country's monitoring institutions. We thus examine the impact of higher education on corruption in all subsamples, while controlling progressively for other variables that have been identified to influence corruption. More precisely we run fixed effects regressions, as in contrast to other studies we are not mainly interested in the cross section distribution (we know that in general more developed countries

³We have unfortunately been unable to obtain data on the independence of the judiciary system. We decided not to use data on the "rule of law" as a substitute for judiciary independence, because our focus is on the control mechanisms of society to check those in power. A country may be characterized by a high degree of rule of law in general (for example a military dictatorship), but this may still be insufficient when it comes to controlling those at the top. We therefore restrict our examination to the degree of press freedom as a proxy for civic societies' monitoring capacities.

have higher levels of education and lower levels of corruption), but want to know the impact on corruption from changes in a countries education levels⁴.

In a first step we include those variables as controls that have been identified as influencing corruption in the literature. However, a large part of the explanatory variables in other econometric studies has concerned structural features such as dominant religions or origin of legal systems, that are time invariant (unless one regards extremely long time spans), and that thus cannot be used in a fixed effects regression. We have been able to identify four potential candidates proposed in the literature to determine corruption apart from education that have at least some variation over time, namely income levels, trade openness, public sector wages, and the share of natural resources in production or exports. However we were only able to obtain a sufficient amount of observations in the cross section and time domain for the first two of them, and thus restrict our control variables to those two in the first step.

In a second step we include other variables that we believe to have an important impact on corruption in the time dimension, these being the square of per capita GNP, press freedom and the Rule of Law. While the Rule of Law has obviously been proposed in the literature, we did not want to include it in the first set of controls, as our variable was compiled based on the perceptions of the same individuals as our corruption index, this obviously leading to the possibility of an artificially high correlation between them. Finally we rerun all regressions, including time dummies. Though we only report two sets of control variables we would like to stress that in order to test robustness we have also been running the regressions progressively adding the control variables, and in different orders⁵. However, our results have been robust to these changes.

We would however at this moment like to introduce a word of caution. The corruption index that we are exploiting is based on the perception of country experts of one single agency only, and there might be some problems with comparability of the ICRG index across countries. However we think that the time dimension of an index compiled by a single agency is probably more precise than the time dimension of an index compiled from a multitude of sources that vary from year to year. In addition, correlation of the corruption index we use and the TI (Transparency International) index is high, around 0.8, the exact numerical value depending on the year considered. Finally 12 years might be considered

⁴Unsurprisingly -as some of our variables have different effects in the time and cross-section dimension- a random effects specification is clearly rejected by Hausman tests.

⁵these regression results can be obtained from the author upon request

too short a time span to track variables like education or corruption. However twelve years cover three electoral periods in most democratic countries and seem to us a reasonable panel to start with. Anyhow, the panel we use is the only one available at the moment with a reasonable time dimension, and economic research has either to use it in spite of its shortcomings or wait some more years.

4. Econometric Results

In this section we report the regression result of the fixed effect regressions on corruption, where we run each regression once for the total sample, and once for each sub-sample (no press freedom; press partially free; press free).

We see from the table that for higher education there is generally a quite substantial difference in the coefficient between countries with higher and lower press freedom levels. Coefficients are very significantly negative in the "no free press" sub-sample, and turn positive (however not always significant) in the "partly free press" sub-sample. Finally in countries with a free press coefficients are insignificant. Results are qualitatively robust to the introduction of time dummies. This supports our hypothesis that in countries with low levels of civic monitoring of those in power, education may actually increase corruption. Surprisingly the positive effect of higher education on corruption is stronger in countries with partial press freedom than in those with a completely free press. This might be due to the fact that in the latter countries monitoring devices are already so highly developed, that further higher education can only marginally strengthen the monitoring devices of civil society.

We would finally shortly comment on the results of our control variables. We find it interesting that in the time dimension changes in income seem to have a non-linear effect. Growth seems in principle to go hand in hand with decreasing corruption, however extraordinarily high growth seems rather to increase corruption. We checked this result in various ways and found it to be quite robust. We would equally draw attention to the highly significant negative sign of trade openness in the total sample and for the subsample of countries with a free press. So far empirical studies (Treisman (1999), Ades/DiTella(1997b)) have been stressing the positive correlation between trade openness and low corruption levels, and been advising opening up the economy as a means to decrease corruption. Our study seems to indicate that in spite of this cross section correlation, opening up an economy might actually increase corruption. We hypothesize that more trade could simply mean more possibilities of bribe extraction (at customs, to obtain

Regressions not including time dummies								
	Full sample	Full Sample	Not Free	Partly Free	Free	Not Free	Partly Free	Free
Higher Education	-0.011 [-1.56]	0.009 [1.12]	-0.117 [-3.84]**	0.091 [2.38]*	-0.005 [-0.52]	-0.1 [-2.76]**	0.069 [1.81]	0.009 [0.89]
Trade Openness	-0.015 [-6.48]**	-0.016 [-6.52]**	-0.008 [-1.71]	-0.011 [-1.24]	-0.026 [-5.12]**	-0.007 [-1.58]	-0.007 [-0.77]	-0.027 [-5.61]**
LogGDPpc	1.423 [8.55]**	6.055 [4.76]**	1.837 [6.09]**	1.274 [3.77]**	1.116 [3.41]**	5.69 [2.71]**	5.931 [1.87]	12.578 [2.86]**
SquareLogGDPpc		-0.337 [-4.30]**				-0.282 [-2.04]*	-0.367 [-1.76]	-0.645 [-2.65]**
Rule of Law		0.318 [11.52]**				0.268 [5.60]**	0.358 [6.24]**	0.352 [5.78]**
Press Freedom		0.069 [3.85]**				-0.014 [-0.25]	0.054 [0.82]	0.237 [3.37]**
Nb. of Observ.	1224	1215	451	321	443	451	321	443
R-Square (within)	0.09	0.22	0.1	0.11	0.08	0.18	0.25	0.17
Value of t-statistics in brackets * significant at 5% level; ** significant at 1% level								
Regressions including time dummies								
	Full Sample	Full Sample	Not Free	Partly Free	Free	Not Free	Partly Free	Free
Higher Education	-0.026 [-3.41]**	0.004 [0.48]	-0.149 [-4.64]**	0.048 [1.17]	-0.01 [-1.02]	-0.142 [-3.49]**	0.063 [1.54]	-0.004 [-0.32]
Trade Openness	-0.015 [-6.35]**	-0.015 [-6.26]**	-0.008 [-1.60]	-0.015 [-1.56]	-0.027 [-4.93]**	-0.007 [-1.34]	-0.005 [-0.48]	-0.028 [-5.40]**
LogGDPpc	0.936 [3.71]**	5.758 [4.36]**	1.611 [4.54]**	0.172 [0.24]	1.963 [2.64]**	3.691 [1.58]	4.816 [1.39]	13.972 [3.03]**
SquareLogGDPpc		-0.324 [-4.08]**				-0.162 [-1.08]	-0.341 [-1.58]	-0.693 [-2.80]**
Rule of Law		0.306 [9.96]**				0.267 [5.21]**	0.333 [4.70]**	0.298 [4.61]**
Press Freedom		0.063 [3.28]**				-0.043 [-0.72]	0.087 [1.16]	0.465 [4.83]**
Nb. of Observ.	1224	1215	451	321	443	451	321	443
R-Square (within)	0.13	0.23	0.15	0.19	0.1	0.22	0.28	0.21
Value of t-statistics in brackets * significant at 5% level; ** significant at 1% level								

Figure 4.1:

permits or lower tariffs, etc.) and thus lead to increases in corruption. However a closer inspection of this interesting empirical finding is beyond the scope of this paper and has to be left open for further research. Finally the significant impact of changes in the rule of law and press freedom on corruption are as expected.

5. Press freedom and corruption - how does causation run?

In this section we turn to the question of causality between press freedom and corruption. Unsurprisingly both variables are highly correlated, however it is a priori unclear whether this comes from the fact that corrupt governments reduce press freedom to prevent their wrong-doings from being publicly exposed, or whether in the absence of the monitoring facilities of civic society bureaucrats and politicians simply exploit the situation for increasing bribe extraction.

However, due to the limited time dimension of our sample we cannot apply Granger causality tests to individual countries, and we are unaware of the existence of a Granger causality test for panels. Controlling for endogeneity is equally difficult, as it is difficult to think of good instrumental variables to explain press freedom, that would not be highly correlated with corruption as well. Therefore the only possibility to gain any insight about how possible causation would go is to lag variables. We therefore run a series of regressions, where we use both press freedom and corruption as left hand side variables, and use respectively actual and lagged corruption and press freedom (lagged up to three years) as right hand side variables. As before we use fixed effects regressions, eventually controlling for year dummies in each regression.

We see that while actual values of corruption are highly significant in explaining press freedom, lagged values become insignificant. On the contrary press freedom stays highly significant in explaining corruption, even when using any lagged value. Though in the absence of a causality test for panels one can unfortunately not finally conclude about the direction of causality between press freedom and corruption, we see this result as very strong evidence that the causation actually mainly runs from press freedom to corruption, and much less the other way. We would thus consider the strengthening of press freedom as one of the crucial tasks in the current fight against corruption.

	Regressions including time dummies		Regressions not including time dummies	
	Press Freedom	Corruption	Press Freedom	Corruption
Corruption	0.162 [4.43]**		0.225 [5.85]**	
L_Corruption	0.058 [1.55]		0.099 [2.55]*	
L2_Corruption	0.032 [0.86]		0.056 [1.47]	
L3_Corruption	-0.006 [0.15]		0.013 [0.34]	
Press Freedom		0.09 [4.43]**		0.11 [5.85]**
L_Press Freedom		0.112 [5.35]**		0.139 [7.34]**
L2_Press Freedom		0.123 [5.79]**		0.161 [8.47]**
L3_Press Freedom		0.097 [4.37]**		0.14 [7.17]**
Nb. of Observat.	1472	1472	1472	1472
Nb. of Countries	129	129	129	129

Absolute value of t-statistics in brackets
* significant at 5% level; ** significant at 1% level

Figure 5.1:

6. Conclusion

With this article we hope to have drawn attention to an area that has been mainly absent from the political economy literature in general, and the literature on corruption in particular, namely press freedom. We have presented two channels through which low levels of press freedom can lead to increased corruption. We have argued that in countries with low levels of civic monitoring of those in public office, increases in education might not have the expected positive impact on corruption, as they might principally increase agents' rent seeking capacity. We provided empirical evidence that indeed increases in higher education have a less beneficial impact on corruption in countries that lack press freedom. We have then concentrated on the direct link between press freedom and corruption. While it is easily observable and widely acknowledged that high levels of press freedom tend to go hand in hand with low levels of corruption (and vice versa), we have provided evidence indicating that this relation is not spurious, and more precisely that causation runs mainly from press freedom to corruption, that is lack of press freedom leads to increased corruption.

We therefore believe a strengthening of press freedom to be an important tool in the international fight against corruption, and would encourage international donor organisations to take a more active stand in guaranteeing and fostering press freedom in the countries that they assist.

7. Appendix

7.1. Data Sources / Explanations

Corruption

This indicator reflects the degree of corruption. Corruption is expected to be encountered "in the form of demand for special payments and bribes connected with import and export licences, exchange controls, tax assessments, police protection, or loans". Forms of "excessive patronage, nepotism, job reservations, and 'favor-for-favors'" are also considered risky for foreign business. Source: International Country Risk Guide (ICRG), various April issues. (the ICRG is a publication from a private risk rating agency called Political Risk Services Group, based in East Syracuse, New York. The publication offers indices of different kinds of risk, covering about 130 countries)

Rule of Law

This variable reflects "the degree to which the citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes". A grade corresponding to low risk is assigned to countries "with an established law and order tradition, ... sound political institutions, a strong court system, and provisions for an orderly succession of power" Source: ICGR, various April issues, Political Risk Services Group

Press Freedom

The indices for press freedom are based on a yearly Freedom House survey on press freedom in the world. In each surveyed country the "system of mass communication is assessed. The degree to which each system permits the free flow of information to and from the public determines the classification of each country's news and information media as being 'free', 'partly free', or 'not free'." In compiling the survey Freedom House measures the degree to which "law and administrative decisions of the government influence the content of the news media", the degree of "political influence or control over the content of the news system", "the economic influences on the media exerted either by government or private entrepreneurs", and the degree "of oppression of the news media exhibited in many forms (from killing ... to interfering with news production or distribution)". Source: Freedom House, yearly press freedom report

Higher Education

School enrollment, tertiary (Gross enrolment ratio is the ratio of total enrolment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Estimates are based on the International Standard Classification of Education (ICSED). Tertiary education, whether or not to an advanced research qualification, normally requires, as a minimum condition of admission, the successful completion of education at the secondary level.

. Source: World Bank Development Indicators, 1999

GDPpcPPP

- GDP per capita based on purchasing power parity (PPP). GDP PPP is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar in the United States. GDP measures the total output of goods and services for final use occurring within the domestic territory of a given country, regardless of the allocation to domestic and foreign claims. Gross domestic product at purchaser values (market prices) is the sum of gross value added by all resident and nonresident producers in the economy plus any taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current international dollars. Source: World Bank Development Indicators, 1999

Trade Openness

Trade openness is the sum of exports and imports of goods and services measured as a share of gross domestic product. Source: World Bank Development Indicators, 1999

8. Literature

ACEMOGLU, D. and T. VERDIER (1998): "Property Rights, Corruption and the Allocation of Talent : A General Equilibrium Approach", *Economic Journal*, 108, 1381-1401

ACEMOGLU, D. and T. VERDIER (2000): "The Choice between Market Failures and Corruption", *American Economic Review*, March 2000

ADES, A. and R. DI TELLA (1997a): "National Champions and Corruption: Some Unpleasant Interventionist Arithmetic", *Economic Journal*, 107 (July), 1023-1042

ADES, A. and R. DI TELLA (1997b): "The New Economics of Corruption: A Survey and some New Results", *Political Studies Association*, Blackwell, London

ISHAM, J., KAUFMAN, D. and L. PRITCHETT (1997): "Civil Liberties, Democracy, and the Performance of Government Projects", *The World Bank Economic Review*, Vol. 11, No. 2, 219-42

MAURO, P. (1995): "Corruption and Growth", *Quarterly Journal of Economics*, August 1995

MAURO, P. (1998): "Corruption and the Composition of Government Expenditure", *Journal of Public Economics* 69, 263-279

TREISMAN, D. (1999): "The Causes of Corruption: A Cross-National Study", *University of Los Angeles*, mimeo