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HOW GLOBALISATION IMPROVES GOVERNANCE

by

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PREFACE

This paper underlies some of the propositions in “Globalisation and Institutional Change: A Development Perspective”, which I presented at the General Assembly of the Pontifical Academy of Social Sciences, The Vatican, on “Globalization and the Common Humanity: Ethical and Institutional Concerns”, 25-28 April 2001. Like its companion, it contributes to the activity on “Empowering people to take advantage of globalisation” included in the programme of work of the OECD Development Centre for the years 2001-2002.

The policy recommendations emerging from the 1999-2000 programme of work of the OECD Development Centre already indicated that sustainable development in a globalising economy requires good governance, both at the international and national levels. Without appropriate governance structures, developing countries will find it difficult to participate in and to benefit from the process of globalisation while ensuring a fair distribution of these benefits among the different segments of their populations.

Securing a positive interaction between globalisation and governance is even more challenging in developing countries seeking to alleviate poverty. In effect, a development-inducing interaction may require deeper institutional change than policymakers and citizens can deliver. This is why, from a development perspective, governance issues are inseparable from ways and means to promote institutional reforms. In this regard, the pressure of globalisation appears to be greatest on reforms leading to more foreign trade in goods, services and assets than on reforms impinging on other aspects of the national economic and social structure - which may be of greater relevance to citizens.

It is this differentiated pressure from markets and voters that must be resolved for a positive interaction to obtain. When the interaction is negative, on the contrary, demands from international financial institutions bring about social unrest, which in turn stalls structural adjustment and institutional reform. As a consequence of this fundamental ambiguity, national policy makers may be tempted to retract on international exchange when structural reforms face greater resistance from citizens. Yet, the temptation to delay reforms cannot be overcome through defensive measures against globalisation. Rather an improvement in governance bringing about institutional change is the dominant strategy.

Demonstrating a positive causal effect of globalisation on governance is not sufficient for a positive interaction to obtain, but it is a necessary first step. The result obtained in this paper from a cross-section of 119 countries over the periods 1984-88 and 1990-98 is precisely that the effect of import openness on corruption is one third that of income per capita. The effect of import openness on the index of apparent corruption

is supposed to reflect good governance and the effect of the level of income and of corruption is controlled by using instrumental variables related to physical remoteness and cultural characteristics. Those results extend to financial openness and are robust to the introduction of cultural variables, including “OECD membership”.

Building on this result I suggest both national and regional governance responses to globalisation in “Globalisation and Institutional Change” which would contribute to bringing about sustained national development. The national response that is emphasised involves fighting against corruption, whereas regional integration is seen as a way of introducing peer pressure for better policies. This implies going beyond the trade agenda into deeper issues of policy reform. The question would then become whether peer pressure at the regional level can bring about national institutions responsive to global challenges. Answering this question is more likely to provide policy makers with a handle on how to bring about the positive interaction, rather than simply liberalising their economic regimes in the hope that the appropriate institutional change will materialise.

Jorge Braga de Macedo
President
OECD Development Centre
09 November 2001

RÉSUMÉ

Des relations d'interdépendance d'une grande complexité lient ensemble la globalisation, la gouvernance et les performances économiques. Ce Document technique examine une hypothèse claire et précise : « la globalisation a-t-elle un effet direct sur la gouvernance ? ». Pour tester cette hypothèse, ou plus précisément la manière dont l'ouverture joue sur la qualité des institutions nationales, les auteurs passent en revue quelques explications théoriques des relations de causalité entre globalisation et gouvernance. D'après la théorie micro-économique, la politique commerciale, la concurrence des producteurs étrangers et des investisseurs internationaux, ainsi que les différences liées au degré d'ouverture dans les coûts et avantages du développement institutionnel, sont trois des principaux mécanismes par lesquels l'ouverture exerce une influence sur le niveau de corruption d'un pays. Après examen d'un vaste échantillon de pays sur une période de 20 ans, nous trouvons des données empiriques solides à l'appui du fait que toute ouverture aux importations s'accompagne *de fait* d'un recul de la corruption, ce qui constitue un volet fondamental de la gouvernance. L'ampleur de cet effet est également importante : après avoir neutralisé les nombreuses spécificités nationales, il ressort que l'influence de l'ouverture sur la corruption atteint près du tiers du niveau obtenu par le degré de développement. Les auteurs en déduisent quelques conclusions pour l'orientation des politiques.

ABSTRACT

Globalisation, governance and economic performance affect each other in very complex mutual relationships. In this paper, we establish a clear and well-circumscribed hypothesis: "is there an effect of globalisation *on* governance?" To test this hypothesis or, even more specifically, to test how openness can affect the quality of domestic institutions, we survey available theoretical explanations of causal relationships between globalisation and governance. Microeconomic theory helps us identify trade policy, competition by foreign producers and international investors, and openness-related differences in institution building costs and benefits, as three major transmission mechanisms through which openness affects a country's corruption levels. Examining a large sample of countries covering a 20-year long period, we found robust empirical support for the fact that increases in import openness do indeed *cause* reductions in corruption, a crucial aspect of governance. The magnitude of the effect is also quite strong. After controlling for many cross-country differences, openness' influence on corruption is close to one third of that exercised by the level of development. Some cautious policy conclusions are derived.

NON-TECHNICAL SUMMARY

Globalisation, governance and economic performance affect each other in very complex mutual relationships. The issue on how state and market, or globalisation and governance, should be combined and whether institutional arrangements should be uniform across countries or wide local variations should be encouraged are still contentiously discussed and this paper contributes constructively to this debate. In particular, it tries establishing whether there is an effect of globalisation *on* governance and, even more specifically, to test how openness can affect the quality of domestic institutions. By investigating how globalisation influences governance, this paper offers some interesting new evidence on a particular but potentially quite valuable dimension of their complex relationships. More specifically, it attempts to understand *why* increased openness and international integration should affect the quality of domestic institutions, and tries to measure by *how much*.

To do so, a survey of the available theoretical explanations of causal relationships between globalisation and governance identifies trade policy, competition by foreign producers and international investors, and openness-related differences in institution building costs and benefits, as three major transmission mechanisms through which openness affects a country's corruption levels.

This paper extends the existing literature in three respects. First, the effect of openness on corruption is estimated considering a larger sample of countries over a 20-year long period and using two different measures of corruption as robustness check. Second, a wide set of controls is used to test for various theories on the causes of corruption and their potential influence over the openness-corruption relationship. Third, the possibility of reverse causality is accurately tested using appropriate tests and estimation techniques.

Robust empirical support is found for the fact that increases in openness do indeed *cause* reductions in corruption. The magnitude of the effect is also quite strong. After controlling for many cross-country differences, openness' influence on corruption is close to one third of that exercised by the level of development.

Confirming available results in the literature, a detectable significant direct effect from trade policy is not measured; however reducing trade barriers may still bring positive corruption reductions in the long run. More open economies, enjoying more foreign competition and investing abundantly in institution building, will normally register lower corruption levels.

The issue of reverse causality — a corrupt bureaucracy may induce a lower degree of international integration by erecting discretionary barriers — is dealt with and

the paper provides empirical evidence proving that openness does independently influence corruption and not vice versa.

The paper is organised into five sections: an introduction is followed by a section discussing some stylised facts about the globalisation and governance nexus and emphasising some of the major difficulties researchers encounter in studying this subject; it also briefly reviews theories on the potential channels through which openness may influence governance' quality. Sections III and IV present our empirical assessment of the strength of these links. A final section concludes by summarising main findings and pointing out potential policy implications.

JEL Classification:

D72 - Economic Models of Political Processes: Rent-Seeking, Elections, Legislatures, and Voting Behaviour

D73 - Bureaucracy; Administrative Processes in Public Organisations

F19 - Trade, Other

K42 - Illegal Behaviour and the Enforcement of Law

Keywords: Corruption, globalisation, governance, international trade.

I. INTRODUCTION

Globalisation and governance (G&G) affect each other and economic performance in very complex mutual relationships, not least because of severe measurement difficulties. How much and which type of foreign capital should be allowed to enter or to exit a particular economy? How important is it to participate in multilateral trade negotiations or to join a regional trade area? How could local institutions respond to global challenges or be affected by them? These are some of the grand questions motivating a companion paper (Braga de Macedo, 2001). Far from answering all of them, we try here to establish whether there is an effect of globalisation *on* governance and, even more specifically, to test how openness can affect the quality of domestic institutions. To do so, we survey available theoretical explanations of causal relationships between globalisation and governance. In the last 20 years or so, economists have changed their views on these relationships more than once. At the time of the fall of the Berlin Wall and after the disillusion of the inward looking economic policies of many developing regions in the world, the shared view was that liberal democracy had triumphed worldwide, Communism was over, and the advent of true global economic progress would be brought by free *markets* and minimal *states*. A “Washington Consensus” based on these ideas had emerged. Again, a few years later, innovative and cheaply available communication possibilities and the ensuing new economy revolution reinforced the view that the market and its globalising forces would bring huge benefits for all.

However, the main problem of this Washington Consensus is that, even after repeated attempts, it has not really delivered a “Moscow Success”, nor a “Latin American Miracle”. Indeed, even the East Asian one, which superficially looked like a diligent application of the Washington paradigm, had recently to sail through stormy waters. Due to these setbacks and their own scepticism for the standard recommendations, economists have reconsidered the important role of public intervention in fostering the 20-year long East Tigers’ booming phase; they have contrasted the recent mediocre growth performance of regions following orthodox recommendations, such as Latin America and Eastern-Europe, with the success cases of China, India and others that joined the global economy in an unorthodox — gradual, sequential and still partial — manner; and many are persuaded that effective states as well as efficient markets are both crucial ingredients for a successful human society. The issue on how state and market, yet another manifestation of G&G, should be combined and whether institutional arrangements should be uniform across countries or wide local variations should be encouraged are still contentiously debated among international financial institutions¹.

By investigating how globalisation influences governance, this paper offers some interesting new evidence on a particular but potentially quite valuable dimension of their complex relationships. More specifically, we attempt to understand *why* increased openness and international integration should affect the quality of domestic institutions, and try to measure by *how much*.

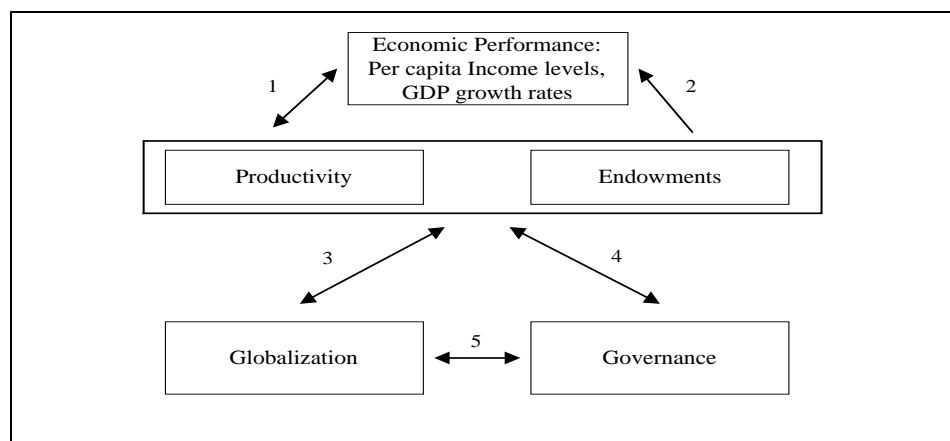
II. GLOBALISATION AND GOVERNANCE (G&G): FROM STYLISTED FACTS TO THEORY

II.1 Stylised Facts

Figure 1 summarises links operating at national level between G&G and economic performance. The top panel shows how a nation's resource endowments and its productivity determine how fast it can grow and the level of its economic well being in terms of income per capita (arrows 1 and 2). Feedbacks are possible: a richer country growing fast may invest more resources in scientific research and technology development and thus enjoy higher productivity levels than a poorer, slow-growing economy; this explains why arrow 1 is double-sided.

The bottom panel shows that, through trade, capital flows or migration, globalisation can influence the level of endowments available in an economy, or even, through international technology transfers, its productivity. Conversely a country's endowments of natural resources, labour, and capital, as well as its geographic location and efficiency of its production structures may determine how much it trades with the rest of the world (arrows 3, which, like arrows 1, 2 have always been at the core of economic thought).

Similarly, a country with a good governance, namely a democratic state with high-quality institutions, effective corruption-free accountable bureaucracies, and a flourishing civil society may likely increase the quality, if not the quantity, of its most important endowment: its own people. Once more, cause and effect can be swapped: well-endowed countries may evolve towards democratic forms of government more easily, or, at least, they may afford investing more resources to build well-functioning institutions (arrow 4).

Figure 1. **G&G Links to National Economic Performance**

Recently new attention has been drawn towards arrow 5 and “how G&G interact to affect economic performance” has become a topical question and the focus of the analysis of this paper. Some interesting empirical stylised facts about arrow 5 have been highlighted in the literature. A clear pattern, for instance, linking government size and level of development has been identified long ago: richer economies on average display larger governments. Honouring a nineteenth-century German economist who first noticed it, this pattern takes his name: “Wagner’s Law”. Based more on historical observations than basic economic principles inference, Wagner (1883) formulated a simple theory in which public expenditure growth was seen as a *natural* consequence of economic development. A very large literature followed and the validity of Wagner Law has survived recurrent scrutiny². A second empirical regularity is observed when government spending is measured across countries grouped according to their level of trade openness: countries trading more intensively have larger governments. It seems as if countries heavily relying on global markets tend to compensate the ensuing risks they take with a bigger public sector. In fact, this is exactly the theory advanced by Rodrik (1998) who constructs a model where government size provides an indirect insurance against risks originating from global markets. By employing more people or through their social safety nets, large governments partially insulate their citizens from global markets fluctuations. Although contending theories may explain the size of the public sector, the simplicity of this model is appealing and its predictions are validated by empirical tests. Finally, another important relation is registered between GDP growth rates and trade openness: it seems that more open countries grow faster. The links between trade openness and growth are, however, much more complex and the debate among those who support globalisation as a positive growth factor and those who are more sceptical is not yet settled³.

Interestingly, if *size* of government expenditure is substituted for an index of the quality of the bureaucracy or for an index of perceived corruption, the above relationships are confirmed; once more, richer and more open countries display lower levels of perceived corruption, and hence better governance⁴.

In sum, one may be tempted to conclude that richer countries, as opposed to poorer, have a tendency to be more open to international trade and to have a larger and

better public sector; or, in other words, that successful economies are able to combine the right mixes of market and state, of globalisation and governance. However, these stylised facts point to broad connections with no indication of causality and, more fundamentally, they do not provide any clue on how, or why, the right combination of globalisation and governance could be achieved.

Causality is one of the fundamental problem social scientists have to face when studying the relationship between economic performance, institutions and global markets. On the one hand, many papers document how high-quality institutions foster economic growth; on the other hand, evidence is accumulating on how developed countries may afford better institutions⁵. Complexity is the other fundamental problem. The relationships we mentioned above connect pairs of variables, however their links may be caused by the influence of other variables. Economic development, for instance, may be at the origin of a spurious relationship between government size and openness by simultaneously increasing the levels of both of them.

II.2. Theory

Explaining how globalisation affects governance and how it helps or hinders economic development means to clearly identify causes and effects and to take into account multiple factors. To do that we need to move from simple stylised facts to more complex theories and empirical tests. In particular, the central question we attempt to answer here is: why and by how much does *openness* influence the level of perceived *corruption* in a given country? On the surface, no relationships seem to link openness and corruption directly, and a brief digression on the theoretical determinants of corruption is useful before considering our results.

Increased private gains are corruption's main objective, however, among its crucial causes, we find economic as well as cultural and social variables. In a recent study, Treisman (2000) tests several hypotheses for the causes of corruption and offers a quite informative ranking on several corruption determinants. Clearly corruption is lower when its costs, including psychological and social, are higher than its benefits, and he finds that, on average, this is the case for those countries with Protestant traditions, those that are more developed and have higher quality governments. On the contrary, corruption is more pervasive when the state is federal, its democratic basis has been established only recently (less than 20 years), and, finally, when a country is less open to trade. More succinctly and using Klitgaard's words, corruption thrives when *monopoly power* is combined with *discretion* and *low accountability*. Incentives to bribery do not arise in a society where all economic activities are carried out in a perfect competition setting with no single agent able to affect the price or the quantity of the product he sells or buys. By the same token, corruption is reduced when economic rents do not depend on the discretionary power of some public official, or when monopolistic economic activities as well as governments are subject to strict rules of accountability.

Within this general framework, openness to international trade and capital flows may alter the balance between corruption costs and benefits through at least *three* mechanisms, which we now consider in turn.

Krueger illustrates the *first* mechanism in her 1974 article focusing on rent-seeking activities caused by quantitative restrictions to imports. In contrast to tariffs, quotas, and other official permissions to imports, generate considerable economic rents due to the monopolistic power they grant to legal importers. In order to appropriate these rents, agents may legally compete or embark in illegal rent-seeking activities such as bribery, corruption, smuggling and black markets. Krueger proves that these rent-seeking activities induce an economy to operate at a level below its optimal, generate a divergence between private and social costs, and, thus, entail a welfare cost *additional* to that due to tariff restrictions. In successive papers, Bhagwati and Srinivasan (1980) and Bhagwati (1982), have generalised Krueger's original idea to a whole array of Directly Unproductive, Profit-seeking (DUP) activities providing further arguments in favour of trade liberalisation. More recently Gatti (1999) presents some empirical evidence of the explicit link between restrictions to trade and capital flows and corruption. In fact, her empirical study aims at disentangling two effects of inward-oriented policies on corruption: the "direct policy distortion" and the "foreign competition effect". High barriers to international transactions *directly* encourage private agents to bribe public officials in exchange for favouritism, the first distortion, and, through the second effect, reduce competition between domestic and foreign firms so that margins for rent seeking, and corruption, are kept high.

This *second* competition-reducing mechanism deserves some additional attention. Ades and Di Tella (1999) provide evidence that the level of rents in general and market structure in particular determine corruption intensity in an economy. Interestingly they argue that changes in rents size due to variation in the degree of competition may have ambiguous effects on corruption. On the one hand, larger rents resulting from a low competition environment increase the amounts bureaucrats can extract as bribes; on the other hand, in such a situation, it becomes more valuable to a society to increase the monitoring and accountability of its bureaucracy (more on this below). Determining the correct sign of the *net* effect on corruption due to these two opposing tendencies may be theoretically important, however, looking at real world situations, one finds many examples of *positive* connection between rents and corruption. A clear-cut case, cited by the authors, is that of oil-exporting countries: Nigeria, where 1980s oil export generated about 80 per cent of government revenues and spurred a construction and import boom especially favouring the ruling party's officials, provides a striking example of how rents cause corruption. These observations provide sufficient justification for Ades and Di Tella to build a model that links directly increased product market competition to lower rents and to lower corruption levels. In their model three sets of variables determine corruption: wages of the bureaucracy, the level of monitoring, and the level of profits that, in turn, depend on the degree of competition. Bureaucracy wages and monitoring are indirectly captured by a society's level of economic development (GDP per capita, schooling) and political development (respect of political rights, index in Gastil, 1982). Competition is proxied by the share of imports in GDP, the sector-concentration of exports, and the distance from the world's major exporters. For the same level of the other variables, countries less exposed to foreign imports, or with a large share of their exports due to natural resources, should suffer higher levels of corruption than those countries more integrated in world markets and with a differentiated export basis.

Wei (2000), by explicitly considering differences in the costs and benefits of monitoring public officials due to the degree of international integration, advances a final *third* mechanism linking globalisation to institutional quality. The basic idea is straightforward: improving the quality of institutions and their capacity to fight corruption depend on the amount of resources a society devotes to this end. A society invests more into building good institutions the larger the benefits it receives or the smaller the costs. Given that foreign producers may divert their exports or investments from a national market to another more easily than domestic producers, one would expect corruption and bad governance to discourage more strongly international trade and capital flows than domestic commerce and investment. This differential effect of corruption induces stronger incentives towards good governance investments for those economies that are more open. Other things being equal and because of the resulting larger benefits, an economy more exposed to international markets would allocate more resources to fighting corruption and end up with a lower level of it than a more isolated inward-looking one.

This model main result rests on two crucial assumptions. Firstly, corruption must truly affect more severely international transactions than domestic ones. Wei provides justification for this arguing that, thanks to their better opportunities to do business elsewhere, foreigners enjoy stronger bargaining power vis-à-vis domestic agents. Alternatively, enforcement costs for international contracts, already starting at a higher level than those for domestic ones, increase more steeply with corruption.

The second crucial assumption is concerned with the direction of causality: for Wei 'being open' comes before and independently of corruption, it is not a result of economic policy or business choices. In fact it may be useful to examine further this general issue of causality for all the three openness-corruption links we have described.

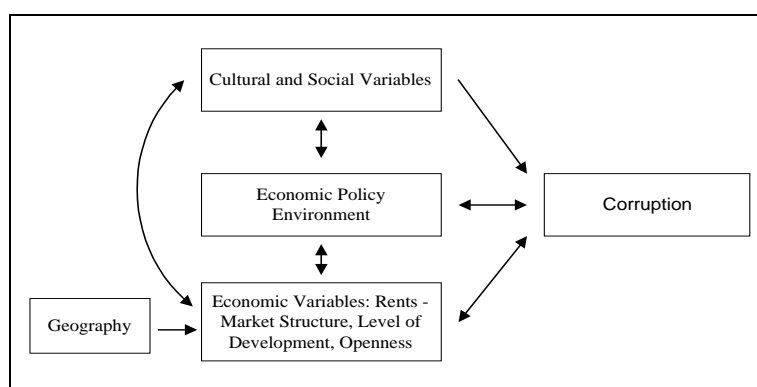
In the Krueger model, trade policy is *exogenous* and causality goes from trade barriers to corruption (or other rent-seeking activities) via a reduction of foreign competition and the creation of artificial rents in import regulated activities.

In the Ades and Di Tella study, the degree of competition influences corruption, but this, in turn, by reaching certain intolerable thresholds, can provide incentives to alter the rules of competition. To overcome this circularity in their corruption regression, they measure import openness, a crucial proxy variable for competition, as if this was determined only by countries' population and land sizes. The identifying assumption here is that these variables affect corruption only through their effect on import openness, and that they cannot be altered by corruption. For the other variables — natural resources share in total exports or trade distance — the direction of causality does not present problems.

Finally, Wei's solution to the causality problem is to consider two types of openness. The first, labelled *natural openness*, is the potential cause for corruption and the second, *residual openness*, is the possible consequence of corruption. In his model, natural openness is determined by geographical measures, such as a country's distance from major trading nations weighted by bilateral trade flows. In this way, corrupt official erecting artificial trade barriers cannot alter this type of openness and will only affect what Wei calls residual openness.

Our discussion on corruption determinants and causality issues is summarised in Figure 2. The three blocks on the left side represents three different sets of variables and the arrows depict the influences they exercise on corruption and among themselves. Apart from *cultural and social variables* and *geography*, all the other factors considered here can be affected by corruption, and this explains the double direction of the arrows.

Figure 2. **Corruption Determinants**



A complete model would take into account all this figure's variables and arrows and provide guidance on how to disentangle causality directions. However, as reported above, economic theories of corruption have not yet reached this ideal stage and we have to adopt several simplifying assumptions. In particular, in our empirical assessment, we introduce additional controls to avoid potential omitted variables bias: if, for instance, we knew that ethnic fractionalisation is strongly correlated with trade openness and determines low levels of corruption but is omitted from our regressions, then the positive influence we would attribute to openness should in reality be assigned to ethnic fractionalisation. Additionally, even if we consider economic policies as exogenous, we take into account potential reverse causality from corruption to other relevant economic variables and correct for this by using geographical determinants as instruments.

III. EMPIRICAL EVIDENCE: MODEL SPECIFICATION AND DATA

The theories we briefly reviewed contribute to explain *why* openness has an effect on corruption; this and the next sections test these theories on real world data and offer an empirical assessment of *how much* openness influences corruption.

The reduced form equations derived from the models described in the previous section as well as all our estimations can be represented by the following equation or by some of its variations:

$$-CORRUPT_{it} = \beta_0 + \beta_1 Openness_{it} + \beta_2 \log(GDP_{it}) + \beta_3 PolR_{it} + \beta_4 Other_{it} + \beta_5 EcPol_{it} + \varepsilon_{it} \quad (1)$$

Our focus is on the sign and magnitude of β_1 , the marginal effect of openness on corruption; however, as suggested by the theory on the causes of corruption, we introduce several additional explanatory variables. The level of development of a country, by influencing cultural attitudes towards corruption and by affecting the amount of resources that may be devoted to monitor public officials, is a key determinant of corruption levels and enters our equation in terms of Gross Domestic Output per capita (*GDP*). Similarly a country score on basic political rights (*PolR*) may be a good proxy for its degree of accountability, another important factor explaining corruption. As shown above in Figure 2 and to avoid omitted variables bias, a series of other variables taking into account social and other causes for corruption is introduced in our empirical estimation (the *Other* variables we used are briefly described below). Finally, we test whether economic policy variables (*EcPol*), such as the degree of trade liberalisation or more general state intervention in the economy, have a direct effect on corruption.

Among the *Other* variables group, exports' sectoral concentration, trade remoteness, country size and additional "cultural" traits are considered important independent determinants of corruption. Natural resources abundant countries will normally record sectorally concentrated exports, low degrees of competition, high rents, and widespread corruption. Less geographically remote countries are 'naturally' more open and need to invest more in institution building and are expected to show lower levels of perceived corruption (Wei, 2000). Small countries could more easily manage an efficient control over their territory and would therefore enjoy lower corruption. Finally, certain important country characteristics such as their colonial past, religious tradition, ethnic composition as well as their being a stable democracy have been frequently considered by studies on corruption and we add them to our list of controls.

Among the variables included in equation (1), *Openness* and *GDP*, at least, may suffer the problem of reverse causality; a corrupt bureaucracy may induce a lower degree of international integration by erecting discretionary barriers or even slow down

the development process through excessive regulations and direct waste of resources. If not corrected reverse causality can be a serious drawback altering not only the magnitude of our β_s^6 but also their meaning: instead of verifying whether openness or GDP influence corruption we would be picking up how much corruption affect our regressors. Endogeneity tests, described in the next section, have been carried out and fortunately the gravity of this problem does not seem too dramatic; however we have performed standard two stages least squares estimations to provide convincing evidence that indeed openness exercises independent influence over perceived corruption effect. The problems in the selection of the instruments used in the first stage and the results of these estimations are detailed in the next section.

A brief description of the data we used in our equations concludes this section. Quantitative studies of the determinants of corruption are relatively recent given that numerical measures for corruption have not been readily available in the past. In this study we use two subjective indices of corruption as our dependent variable. These indices, produced for the use of international investors, are derived by standards questionnaires subjected to large random polls so that, by construction, they facilitate cross-country comparisons. In addition their commercial value partially guarantees their accuracy. Objective indices would be preferable if they were measured consistently across countries and were independent of corruption itself. Consider, for instance, a measure such as reported fraud cases: its *objective* value may depend on country-specific definitions and local corruption-fighting systems so that a country with a true low level of corruption and efficient monitoring schemes may report more numerous fraud cases than a more corrupt country. Corruption indices used here are those produced by Transparency International (TI) and by the International Country Risk Guide (ICRG) of the PRS group. It should be noticed that we have rescaled these two indices to vary in a continuous interval between 0 and 10, where 10 reflects the *best* score, i.e. the *lowest* level for corruption. Given that these two indices cover different country samples and time periods, we use both indices to test for robustness of our results. TI sample contains yearly corruption data covering 53 countries for the period 1980-85, the same countries for 1988-92, and 75 countries for 1995-98; ICRG sample includes 119 countries for the three periods of 1984-88, 1990-94 and 1995-98. Instead of using yearly data, for both TI and ICRG, we calculated three averages corresponding to the time intervals for which corruption indices were available. Due to the fact that yearly estimates for all our dependent variables and for all the countries covered by TI and ICRG do not exist, we preferred to adopt this averages approach to fill the gaps rather than restrict the sample to the few countries that present all the necessary data. In this way we maximise cross-country variation sacrificing little time variation.

In equation (1), our initial measure for openness is given by the ratio of imports on GDP. The other economic variables, namely GDP per capita, the share of natural resources exports on total exports, government expenditure and consumption, and area⁷ were collected from the World Bank's World Development Indicators. Remoteness is a weighted average of each country distance from its trading partners in which the weights are given by the share of exports of the country's partners in global exports. Formally it is constructed in this way:

$Remoteness_{it} = \sum_{i \neq k} w_i \log (distance_{ki}) ,$	where: $w_i = export_i / \sum_{i \neq k} export_i$ (2)
----------------------------------------------------------------	--------------------------------------------------------

In fact remoteness is a unilateral (not multilateral) measure of the distance of each country from a sort of economic geographic centre determined by the largest exporters in world trade. Political rights index — varying between 0, worst score, and 10, best score — was obtained from Freedom House, ethnic fractionalisation and protestant traditions dummies were derived from La Porta *et al.* (1999), colonial past and democracy dummies were taken from Paul Hensel website and Treisman (2001), trade liberalisation index was kindly provided by the IMF, and geographical data (distances, latitude, tropics dummy used to construct our instrumental variables) come from various sources.

Table 7 in appendix presents summary statistics for the main variables used in our regressions. The number of observations for the ICRG and TI groups reflects the largest samples we were able to use in our most complete specification of equation (1), and it does not necessarily equal the sum across periods of all the countries covered by the corruption indices. Besides, the trade liberalisation index is only available for the 1995-98 time interval, and that explains the drop in the number of observation. A major difference between the ICRG and TI samples consists of the latter's exclusion of a fair share of developing countries: this is noticeable in its higher mean for GDP per capita (TI's GDP average is almost 30 per cent higher than that of ICRG). The large dimension of our samples provides significant cross-country and time variation, resulting in high quality estimates of how globalisation improves governance, as claimed in the title.

IV. HOW GLOBALISATION IMPROVES GOVERNANCE

In this section, we present the main results of our empirical investigation on the links between globalisation and governance, or, more precisely, between openness on corruption. Simple correlations, the most basic statistical measure of quantitative relationship, are a good starting point and are shown in Table 1.

Table 1. **Corruption and Explanatory Variables: Simple Correlations**

	ICRG		TI	
	Full Sample	Last period	Full Sample	Last period
LOG(M/GDP) [openness]	0.13	0.14	0.17	0.14
LOG(GDP per capita)	0.66	0.68	0.75	0.82
Political Rights	0.58	0.65	0.60	0.63
Oil-Min Exports	-0.25	-0.22	-0.19	-0.08
Remoteness	-0.54	-0.52	-0.50	-0.52
LOG(AREA)	-0.01	-0.01	-0.11	-0.15
Trade Liberalization Index	-	0.16	-	0.35
LOG(Government Expenditure / GDP) *	0.49	0.55	0.44	0.47
ICRG	1.00	1.00	0.88	0.88
N. obs.	305	103	174	75

* This variable is not available for all the observations included in the samples.

Although they do not give any indication on causality, correlations in Table 1 represent a first approximate test for the corruption theories we described and offer an initial indication of the strength of the relationships. Openness, measured as a ratio of imports on GDP, has a positive effect on corruption: our data show that countries with a higher degree of openness will, on average, also record lower levels of corruption. The same tendency applies, with stronger intensity, to the level of development. For each corruption index, two correlation values are shown in the table where the first is calculated using the full sample and the second using data from the last period only. In general, countries showing stronger accountability, proxied by the political rights index, lower sectoral concentration in their exports, lower geographic remoteness, smaller area, larger government involvement in their economy, and a high degree of trade liberalisation, also register low levels of corruption. Therefore in all cases but for the size of the government (more on this below) the sign of the relationship corresponds to that predicted by theories on the causes of corruption.

More interesting results derived from multivariate OLS regressions are presented in Table 2. The parsimonious specifications in columns (1) and (1)' indicate a positive impact of openness on the quality of governance, in our case a reduced level of corruption, for both samples.

Our regressions are in lin-log specification, meaning that the dependent variable, corruption, is in linear format and the independent variables are in logarithmic format. In

this specification we can interpret the β_s as the marginal effect on corruption of a change in the logarithm of the dependent variable, or, as the marginal effect due to a relative (percentage) change in the independent variable in linear format⁸.

Using estimated coefficient from columns (1) and (1)', the most basic specification of equation (1) predicts that a 10 per cent increase in imports openness results in 0.03-point change in the corruption score (0.34 x 0.1) in the ICRG sample, and in 0.06-point change (0.57 x 0.1) in the TI case. This is a sizeable effect, especially when compared to the 0.09 and 0.17-point changes due to a 10 per cent increase in log GDP per capita. Instead of an arbitrary 10 per cent change, it may in fact be more instructive to consider more realistic variations in the independent variables such as their observed standard deviations. This exercise results in a 0.18 reduction of corruption (0.34 x 0.53) for the ICRG sample and a 0.31 reduction (0.57 x 0.54) for the TI sample.

To isolate the direct impact of openness on governance we need to consider other important simultaneous determinants of corruption: columns (2) and (2)' introduce these additional controls to the basic specification.

Controlling for dependence on oil and mineral exports, for remoteness and size does not change the overall picture. In these specifications a high explicative power is achieved, even if not all the included variables are significant at conventional levels. The basic results concerning openness and corruption are unchanged: the magnitude of import openness changes slightly and the coefficients remain statistically significant.

Table 2. **Globalisation and Corruption: OLS Results**

<i>Estimation</i>	(1)	(2)	(3)	(4)	(1)'	(2)'	(3)'	(4)'
<i>Dependent Var.</i>	ICRG				TI			
<i>Regressors</i>								
C	-4.22	3.74	1.34	-0.22	-12.67	-9.94	-11.26	-14.57
Log (M Openness)	0.34	0.38	0.55	0.51	0.57	0.53	0.60	0.45
	<i>2.33</i>	<i>2.48</i>	<i>2.21</i>	<i>1.98</i>	<i>2.72</i>	<i>2.53</i>	<i>2.06</i>	<i>1.33</i>
Log (GDP per capita)	0.91	0.78	0.63	0.60	1.70	1.61	1.62	1.55
	<i>8.53</i>	<i>6.49</i>	<i>4.59</i>	<i>4.35</i>	<i>9.12</i>	<i>7.57</i>	<i>5.85</i>	<i>5.09</i>
Pol.Rights	0.19	0.14	0.20	0.21	0.10	0.09	0.10	0.06
	<i>5.38</i>	<i>4.17</i>	<i>4.64</i>	<i>4.50</i>	<i>1.78</i>	<i>1.65</i>	<i>1.68</i>	<i>0.82</i>
Oil-Min Exports		-0.73	-0.13	-0.25		-0.78	0.18	0.41
		<i>-3.03</i>	<i>-0.36</i>	<i>-0.72</i>		<i>-1.65</i>	<i>0.19</i>	<i>0.58</i>
Remotness		-0.89	-0.60	-0.49		-0.22	-0.20	-0.02
		<i>-4.06</i>	<i>-1.89</i>	<i>-1.49</i>		<i>-0.83</i>	<i>-0.47</i>	<i>-0.04</i>
Log(Area)		0.10	0.10	0.11		0.01	0.07	0.03
		<i>1.79</i>	<i>1.39</i>	<i>1.44</i>		<i>0.13</i>	<i>0.61</i>	<i>0.20</i>
Trade Lib. Index				-0.06				0.00
				<i>-0.84</i>				<i>0.02</i>
LOG(Gov Expenditure / GDP)*				0.51				1.45
				<i>1.49</i>				<i>2.59</i>
R2	0.49	0.55	0.60	0.61	0.63	0.64	0.70	0.73
Number of Obs	305	305	103	103	174	174	75	75

Note: t statistics are shown in italics below the estimates

Interestingly enough, while for the ICRG case dependence on natural resources, remoteness and, marginally, area turn out to be significant determinants of corruption

levels, these same variables do not appear to reach statistical significance in the TI case. Given a vast literature (among others, Tornell and Lane, 1998) pointing to higher rent-seeking behaviour in natural resource abundant countries, and given that remoteness and area should influence negatively corruption according to the theories described above, one would expect these relationships to hold for both samples. Additionally, in the TI case, openness records a much larger coefficient. These differences may originate for two reasons: the first has to do with the samples. ICRG larger sample includes more countries than TI's and these additional countries produce the differences in the regression results. The second source of difference may consist of variation in scoring methods between ICRG and TI so that countries, similar in their levels of openness and other explanatory variables, get different corruption evaluation by ICRG or TI. To check for these two possibilities we restrict ICRG sample to include just TI's countries and re-run the regression in column (2). The results of this new regression (not displayed) show that 'omitted' countries do count; in particular, the restricted ICRG sample does not include enough oil exporting countries to allow a significant estimation of their effect on corruption, remoteness also loses significance due to the simple fact that the new sample mainly includes large world exporters, i.e. countries close to the economic geographic centre. However, it should be finally noticed that, on a case by case basis, some variations in scoring methods have been identified and that they certainly contribute to the overall difference in the regression results across corruption indexes.

The last two columns in each panel of Table 2 introduce policy variables as potential explanations of corruption. Columns (4) and (4)' show how results vary when an index of trade policy liberalisation and a measure of the extent of government intervention, approximated by government consumption as a share of GDP, are introduced. Notice that since these variables are available just for the last period, columns (3) and (3)' provide relevant comparable regressions. Basic findings are unchanged: the openness coefficient is slightly reduced (especially in the TI case), and trade liberalisation results insignificant for both ICRG and TI samples, whereas government size turns out to be not significantly different from zero just in the TI case. These results may at first appear surprising given the correlation indexes observed in Table 1 above. However, protection as proxied by the liberalisation index is fairly low for the most recent period we consider in our samples. Indeed, Gatti (1999) and Larrain and Tavares (2000) examined the effects of average protection and its sectoral dispersion and find very weak results confirming that trade protection may have some non-linear effect that becomes significant only when trade barriers are above certain levels.

As far as government size is concerned, this additional variable seems to make openness' effect on corruption statistically insignificant in the TI sample. Various possible explanations for this can be thought of. Firstly, the implicit endogeneity of government size with corruption: on the one hand higher public officials' salaries should discourage corruption, on the other hand more pervasive state intervention in the markets may create artificial rents and strong incentives for corruption⁹. Additionally, government size and openness are strongly correlated as shown by Rodrik (1998) and the introduction of the former in our regression may clearly affect the coefficient for the latter. Once more, if globalisation independently determines government size and corruption the coefficient of government size is wrongly estimated due to endogeneity bias.

Recent empirical research on the causes of corruption and the quality of governments (in particular Treisman, 2000 and La Porta *et al.* 1999) points out that a further series cultural variables should be considered. In particular the roles of the ethnic fractionalisation, of the colonial past, of the religious traditions, and that of long-term stable democratic institutions are seen as important explanatory variables for the level of corruption. In Table 3, we add these additional cultural controls to specification (2) of the previous table.

Table 3. **Additional Controls — Cultural Variables**

<i>Estimation</i>	(2a)	(2b)	(2c)	(2d)	(2e)	(2a)'	(2b)'	(2c)'	(2d)'	(2e)'
<i>Dependent Var.</i>	ICRG					TI				
<i>Regressors</i>										
C	2.00	1.97	3.39	1.64	0.26	-12.00	-11.78	-10.18	-11.17	-11.25
Log (M Openness)	0.45	0.45	0.43	0.41	0.50	0.52	0.51	0.54	0.52	0.53
	<i>2.83</i>	<i>2.83</i>	<i>2.54</i>	<i>2.19</i>	<i>2.63</i>	<i>2.48</i>	<i>2.49</i>	<i>2.60</i>	<i>2.57</i>	<i>2.60</i>
Log (GDP)	0.92	0.92	0.77	0.89	0.70	1.84	1.84	1.58	1.48	1.46
	<i>5.86</i>	<i>5.81</i>	<i>4.89</i>	<i>5.11</i>	<i>3.86</i>	<i>9.02</i>	<i>8.68</i>	<i>7.36</i>	<i>7.03</i>	<i>6.53</i>
Pol.Rights	0.14	0.14	0.10	0.08	0.06	0.10	0.10	0.09	0.03	0.03
	<i>3.70</i>	<i>3.61</i>	<i>2.80</i>	<i>1.93</i>	<i>1.42</i>	<i>1.76</i>	<i>1.73</i>	<i>1.48</i>	<i>0.45</i>	<i>0.40</i>
Oil-Min Exports	-0.72	-0.72	-0.78	-0.82	-0.76	-0.82	-0.85	-0.98	-0.93	-0.92
	<i>-2.69</i>	<i>-2.67</i>	<i>-3.06</i>	<i>-2.98</i>	<i>-2.81</i>	<i>-1.80</i>	<i>-1.85</i>	<i>-2.40</i>	<i>-2.18</i>	<i>-2.11</i>
Remotness	-0.90	-0.90	-0.87	-0.70	-0.37	-0.33	-0.37	-0.31	-0.07	-0.03
	<i>-4.07</i>	<i>-3.74</i>	<i>-3.99</i>	<i>-3.16</i>	<i>-1.87</i>	<i>-1.20</i>	<i>-1.21</i>	<i>-1.15</i>	<i>-0.26</i>	<i>-0.12</i>
Log(area)	0.11	0.11	0.09	0.00	-0.03	0.06	0.07	0.06	0.06	0.06
	<i>1.82</i>	<i>1.75</i>	<i>1.45</i>	<i>0.06</i>	<i>-0.48</i>	<i>0.59</i>	<i>0.62</i>	<i>0.63</i>	<i>0.64</i>	<i>0.56</i>
Ethnic Fract.	0.73	0.73	0.41	0.76	0.71	1.62	1.62	1.23	0.78	0.80
	<i>1.67</i>	<i>1.66</i>	<i>0.89</i>	<i>1.57</i>	<i>1.44</i>	<i>3.25</i>	<i>3.23</i>	<i>2.45</i>	<i>1.48</i>	<i>1.50</i>
Colonial Past		-0.01	0.10	0.18	0.31		0.10	0.23	0.31	0.32
		<i>-0.05</i>	<i>0.39</i>	<i>0.71</i>	<i>1.32</i>		<i>0.23</i>	<i>0.58</i>	<i>0.82</i>	<i>0.84</i>
Protestant			1.54	1.40	1.31			1.75	1.53	1.52
			<i>4.99</i>	<i>4.36</i>	<i>4.26</i>			<i>6.96</i>	<i>6.16</i>	<i>6.13</i>
Democracy				0.75	0.65				1.10	1.10
				<i>2.82</i>	<i>2.54</i>				<i>3.62</i>	<i>3.60</i>
OECD					1.17					0.14
					<i>3.44</i>					<i>0.38</i>
R2	0.56	0.56	0.60	0.66	0.68	0.66	0.66	0.71	0.73	0.73
Number of Obs	287	287	287	240	240	171	171	171	168	168

Note: t statistics are shown in italics below the estimates

Table 3 shows that the coefficients on “protestant” traditions, “democracy” and “OECD” membership are significant and show the right sign, whereas “colonial past” is not significant and “ethnic fractionalisation” is significant only for the TI sample but shows a wrong sign¹⁰; overall adding these controls increases the R-squared of the regressions. Countries where protestant is the largest confession, where democracy has been uninterrupted for the last 50 years, and that belong to the Organisation for Economic Co-operation and Development record lower levels of corruption. Table 3 also shows that the estimation of the effect of import openness on corruption is not strongly affected by these historical variables; actually, their introduction slightly increases its explanatory power. It seems that these variables, by lowering the explanatory power of the GDP and political rights coefficients, are in fact accounting for deep institutional and social cross-country differences.

It should be emphasised that these variables are all in dummy formats thereby they are really just labels used to describe a, sometimes quite loose, common characteristic of a particular group of countries. In fact the only *proper* label is the “OECD” one: this group of countries adopted common measures to fight corruption and is trying to enforce them through “peer pressure” mechanisms¹¹. Rather than testing serious hypotheses on how, for instance, being a democracy may affect a country’s corruption level, these dummies provide an indication that our corruption theories are still incomplete.

A last important issue to be considered here is that of reverse causality. As already pointed out, among the explanatory variables, *Openness* and *GDP*, at least, may not be fully exogenous and in this case our estimates would be biased. Fortunately, by identifying suitable variables (instruments) that are highly correlated with openness and GDP but that do not directly influence corruption, standard econometric techniques allow us to bypass this problem. *Suitable* is the crucial attribute here. This means that we need new *theoretically sound* explanations for how openness and GDP are determined *independently* of corruption. In what follows we firstly briefly discuss the instruments selection issue, then comment on the results from specification tests and finally on the endogeneity-corrected two stages least squares estimates.

A frequently used approach to instrument openness has its theoretical foundations in the well-established gravity equation that links bilateral trade flows to distances from major trading partners¹². According to this approach, a country degree of corruption-independent openness increases with its proximity to the largest world traders, or if the country’s official language is English. Conversely, the larger is the size of a country’s domestic market, proxied by its population, the lower its openness.

The resurgence of economic geography in the late 1970s provides valuable instruments for the GDP variable. A series of recent papers study the strong links between geography and the level of economic development¹³. They present empirical evidence on positive correlation between GDP per capita and the absolute value of latitude. They argue that lower development at the tropics may be caused by poorer human health and by inferior productivity in agriculture. They also consider that winter frosts in temperate regions may boost agriculture productivity and thereby development. Geographical variables such as these are convincing instruments because their impact on corruption could only result through their influence on GDP. The absolute value of latitude, a dummy for tropical countries, and time dummies provide us with a valid corruption-independent GDP instruments list¹⁴.

In summary, *Openness* and *GDP* are the *two* possible endogenous variables, and population, English speaking dummy, area, and remoteness (for M) and latitude, tropics dummy, period dummies, and democracy (for GDP) are the *eight* potential instrumental variables. A well-known drawback of instrumental variables procedures is that of providing consistent but quite imprecise estimates when good instruments for the endogenous variables cannot be found. Therefore the choice of instruments becomes rather important; this can be performed in two complementary ways: through a test of over-identifying restrictions (OID) or checking the relevance (i.e. explanatory power) of the instruments. Based on these two criteria our final selection results in the following list of instruments: tropics, population and time dummies; the other instruments have been

excluded because they either exercise a direct effect on corruption (and not via the suspected endogenous regressors) or their explanatory power is too low.

Once appropriate instruments have been selected, a proper endogeneity test on Openness and GDP can be conducted. A Hausman-Wu specification test is used here and its results reject endogeneity for both the ICRG and TI samples¹⁵.

Given that the Hausman-Wu test is sensitive to the choice of instruments and in order to provide final evidence on the independent influence of openness over corruption that is comparable to that of other studies, we proceeded to estimate regression (2) of Table 2 with a two-least squares method. Table 4 compares the results of the OLS and IV estimations.

Table 4. **Globalisation and Corruption: OLS and IV Results**

<i>Estimation</i>	(2)	(2) IV	(2)'	(2)' IV
<i>Dependent Var.</i>	ICRG		TI	
<i>Regressors</i>				
C	3.74	0.78	-9.94	-6.95
Log (M Openness)	0.38	0.56	0.53	0.68
	<i>2.48</i>	<i>2.13</i>	<i>2.53</i>	<i>1.62</i>
Log (GDP per capita)	0.78	0.92	1.61	1.43
	<i>6.49</i>	<i>3.34</i>	<i>7.57</i>	<i>2.60</i>
Pol.Rights	0.14	0.11	0.09	0.12
	<i>4.17</i>	<i>2.05</i>	<i>1.65</i>	<i>1.00</i>
Oil-Min Exports	-0.73	-0.78	-0.78	-0.40
	<i>-3.03</i>	<i>-2.94</i>	<i>-1.65</i>	<i>-0.88</i>
Remotness	-0.89	-0.76	-0.22	-0.39
	<i>-4.06</i>	<i>-2.42</i>	<i>-0.83</i>	<i>-1.05</i>
Log(Area)	0.10	0.13	0.01	0.00
	<i>1.79</i>	<i>2.02</i>	<i>0.13</i>	<i>-0.02</i>
Trade Lib. Index				
LOG(Gov Expenditure / GDP)*				
R2	0.55	0.54	0.64	0.59
Number of Obs	305	305	174	174

Note: t statistics are shown in italics below the estimates

Using instrumented variables (IV) in a rather parsimonious specification of equation (1) slightly increases the magnitude of the estimated openness coefficients, which remain significant at the 1 per cent threshold for the ICRG sample at the 10 per cent for the TI sample. Even when potential reverse causality is accounted for, it clearly appears that, because of reduced rent-seeking wasteful activities or due to their larger investment in institution building, countries more exposed to international imports experience a lower level of corruption.

In summary, our main empirical result, that the *causal link from openness to corruption* is strong and statistically significant, is robust to the introduction of a whole set of additional explanatory variables used in the literature on the causes of corruption, and it is not affected by sample bias. Table 5 confirms that our results are in the broad range of other studies' estimations, providing further support to the thesis that corruption declines in more open societies.

Table 5. Corruption and Openness — Comparative Results

Independent Variable:	Study: Ours		Larrain et al	DiTella et al		Wei		Gatti
	ICRG	TI	ICRG	BI	WCR	BI	TI	ICRG
Dependent Variables:								
β Openness	0.34	0.57	1.08	0.62	0.9	1.28	1.6	0.2
β GDP	0.91	1.70	1.21	2.44	0.5	1.47	1.25	1.12
β Openness x StDev of Openness	0.18	0.31	0.74	0.56	0.92	0.82	0.93	
β GDP x StDev of GDP	1.03	1.82	1.28	1.67	0.23	1.54	1.95	

Note: estimations from most similar specifications have been used to compare these studies.

V. CONCLUSION

This paper showed how openness lowers corruption, a specific yet rather important dimension of the globalisation and governance nexus. Microeconomic theory helped identifying trade policy, competition by foreign producers and international investors, and openness-related differences in institution building costs, as three major transmission mechanisms through which openness affects a country's corruption levels. Examining a large sample of countries covering a 20-year long period, we found robust empirical support for the fact that increases in openness do indeed *cause* reductions in corruption. The magnitude of the effect is also quite strong. After controlling for many cross-country differences, openness' influence on corruption is close to one third of that exercised by the level of development.

Confirming results by Gatti (1999) and Larrain and Tavares (2000), we were not able to measure a significant direct effect from trade policy. We also found that, at least for the TI sample, the addition of government size among our explanatory variables decreases the magnitude of the openness effect and its statistical significance. Although this does not invalidate our findings — openness in the ICRG sample is unaffected by government size and it may as well be the case that this variable is caused by corruption — some caution should be used when drawing economic policy implications.

Firstly, reducing trade barriers may not bring immediate positive corruption reductions. It is true that in the long run, more open economies, enjoying more foreign competition and investing abundantly in institution building, will register lower corruption levels; however, in the short run, domestic policies may be more valuable than pursuing globalisation at all costs. This may be especially important for poorer countries that may face serious trade-offs between complying with international agreements and investing in basic development infrastructures such as education, health, and social security.

Secondly, our support for a positive effect of globalisation onto governance is based on a cross-section study, and it is well known that this type of analysis has several problems. Cross-country differences in the levels of the dependent variables are the central explanation for the variations in the dependent variable, and, no matter how many controls are added, it will always be possible that some additional relevant variable is missed or wrongly measured and that results are thus distorted. It is possible to account for many local characteristics, yet comparing China to the USA, or India to Argentina, will always be a bit stretched. This suggests that future research should focus on in-depth country specific case studies. As in the case of Srinivasan and Baghwati (1999), who examine the links between openness and growth, we are confident that the virtues of outward orientation as quality enhancer for domestic institutions and growth will not be refuted.

APPENDIX. EXTENDED RESULTS TABLES, COUNTRY LISTS, DATA SOURCES AND DEFINITIONS

Table 6. Full ICRG and TI Country Samples

ICRG		TI	
1984-89, 1990-94, & 1995-98		1980-85 & 1998-92	1995-98
Algeria	Madagascar	Argentina	<i>same countries plus</i>
Angola	Malawi	Australia	Bulgaria
Argentina	Malaysia	Austria	Costa Rica
Australia	Mali	Bangladesh	Cote d'Ivoire
Austria	Malta	Belgium	El Salvador
Bahamas, The	Mexico	Bolivia	Ghana
Bahrain	Mongolia	Brazil	Guatemala
Bangladesh	Morocco	Cameroon	Honduras
Belgium	Mozambique	Canada	Iceland
Bolivia	Myanmar	Chile	Jamaica
Brazil	Netherlands	China	Luxembourg
Bulgaria	New Zealand	Colombia	Malawi
Burkina Faso	Nicaragua	Czech Republic	Mauritius
Cameroon	Niger	Denmark	Morocco
Canada	Nigeria	Ecuador	Nicaragua
Chile	Norway	Egypt, Arab Rep.	Paraguay
China	Oman	Finland	Peru
Colombia	Pakistan	France	Romania
Congo, Dem. Rep.	Panama	Germany	Singapore
Congo, Rep.	Papua New Guinea	Greece	Slovak Republic
Costa Rica	Paraguay	Hong Kong, China	Tanzania
Cote d'Ivoire	Peru	Hungary	Turkey
Cyprus	Philippines	India	Uruguay
Czech Republic	Poland	Indonesia	
Denmark	Portugal	Ireland	
Dominican Republic	Qatar	Israel	
Ecuador	Romania	Italy	
Egypt, Arab Rep.	Saudi Arabia	Japan	
El Salvador	Senegal	Jordan	
Ethiopia	Sierra Leone	Kenya	
Finland	Singapore	Korea, Rep.	
France	Slovak Republic	Malaysia	
Gabon	Somalia	Mexico	
Gambia, The	South Africa	Netherlands	
Germany	Spain	New Zealand	
Ghana	Sri Lanka	Nigeria	
Greece	Sudan	Norway	
Guatemala	Suriname	Pakistan	
Guinea	Sweden	Philippines	
Guinea-Bissau	Switzerland	Poland	
Guyana	Syrian Arab Republic	Portugal	
Haiti	Taiwan, China	Senegal	
Honduras	Tanzania	South Africa	
Hong Kong, China	Thailand	Spain	
Hungary	Togo	Sweden	
Iceland	Trinidad and Tobago	Switzerland	
India	Tunisia	Taiwan, China	
Indonesia	Turkey	Thailand	
Iran, Islamic Rep.	Uganda	Tunisia	
Iraq	United Arab Emirates	Uganda	
Ireland	United Kingdom	United Kingdom	
Israel	United States	United States	
Italy	Uruguay	Venezuela, RB	
Jamaica	Venezuela, RB		
Japan	Yemen, Rep.		
Jordan	Yugoslavia, FR (Serbia/Montenegro)		
Kenya	Zambia		
Korea, Rep.	Zimbabwe		
Kuwait			
Liberia			
Luxembourg			

Table 7. Summary Statistics, ICRG and TI Samples ^a

	Observations	Mean	Std. Dev.	StD / Mean	Maximum	Minimum
ICRG Corruption Index	281	5.79	2.25	0.39	10.00	0.00
Imports / GDP	281	35.02	22.27	0.64	181.03	6.29
Gross Private Capital Flows (GPKF) / GDP	281	9.55	16.48	1.72	160.35	0.03
GDP per capita ^b	281	6,647.56	6,799.99	1.02	28,527.14	364.87
Political Rights	281	6.02	3.39	0.56	10.00	0.00
Government Expenditure / GDP	215	30.68	12.70	0.41	96.97	9.13
Government Consumption / GDP	215	15.36	5.88	0.38	48.06	4.36
Trade Liberalization Index	105	6.38	2.07	0.32	10.00	1.00
TI Corruption Index	164	5.10	2.66	0.52	9.65	0.00
Imports / GDP	164	31.58	18.17	0.58	151.19	6.21
Gross Private Capital Flows (GPKF) / GDP	164	10.13	14.20	1.40	92.95	0.13
GDP per capita ^b	164	8,547.20	7,172.52	0.84	28,527.14	463.06
Political Rights	164	7.03	3.14	0.45	10.00	0.00
Government Expenditure / GDP	124	31.39	11.58	0.37	62.73	12.27
Government Consumption / GDP	124	15.51	5.54	0.36	38.27	3.65
Trade Liberalization Index	75	6.32	1.89	0.30	10.00	1.00

Note: a) All variables are averages of the three periods considered by ICRG (1984-88, 1990-94, 1995-98) and TI (1980-85, 1988-92, and 1995-98); except for the Trade Liberalisation Index which is available only for the third most recent period.; ^b GDP is measured in thousands of USD at PPP exchange rates.

Table 8. Cultural Variables (For ICRG sample)

Groups	Never Colony	Protest	Democracy	OECD
Members:	Austria	Bahamas, The	Australia	Australia
	Belgium	Denmark	Austria	Austria
	China	Finland	Belgium	Belgium
	Denmark	Germany	Canada	Canada
	Ethiopia	Iceland	Costa Rica	Czech Republic
	Finland	Jamaica	Denmark	Denmark
	France	Netherlands	Finland	Finland
	Germany	New Zealand	France	France
	Hungary	Norway	Germany	Germany
	Iran, Islamic Rep.	Papua N. Guinea	Iceland	Greece
	Ireland	South Africa	India	Hungary
	Italy	Sweden	Ireland	Iceland
	Japan	Switzerland	Israel	Ireland
	Netherlands	United States	Italy	Italy
	Portugal		Luxembourg	Japan
	Spain		Netherlands	Korea, Rep.
	Sweden		New Zealand	Luxembourg
	Switzerland		Nigeria	Mexico
	Thailand		Sweden	Netherlands
	Turkey		Switzerland	New Zealand
	United Kingdom		United Kingdom	Norway
	United States		United States	Poland
	Uruguay			Portugal
				Slovak Republic
				Spain
				Sweden
				Switzerland
				Turkey
				United Kingdom
				United States
Averages				
ICRG				
Group Members	6.3	8.2	8.1	7.9
Non Members	5.3	5.2	5.2	4.8
M - Openness				
Group Members	33.6	38.9	36.7	35.2
Non Members	32.9	32.6	30.0	32.7
GDP				
Group Members	12476.2	17604.0	19420.3	18257.3
Non Members	6675.9	7400.3	6519.7	5170.3

VARIABLES SOURCES AND DEFINITIONS

Governance — Quality of Institutions

ICRG — **Definition:** Perceived corruption in Government INDEX. **Unit:** 0 to 6, higher scores denoting lower corruption levels. The original index has been re-scaled into a 0 to 10 scale. **Coverage:** yearly observation for 1984-00 (140 countries). **Source:** International Credit Risk Guide, 2000

TI — **Definition:** Transparency International's Corruption Perceptions Index. **Unit:** 0 to 10, ten representing a perceived level of negligible bribery, while zero indicating very high levels of bribery. **Coverage:** 1980-85 average, 1988-92 average, 1995-00 yearly data (99 countries). **Source:** Transparency International (www.transparency.de) and Göttingen University (www.uni-goettingen.de/~uwwv).

Globalisation — Openness

M — **Definition:** Imports of goods and services as percentage of GDP. **Unit:** percentage. **Source:** The World Bank, World Development Indicators (WDI) CD ROM, 2000.

LIB — **Definition:** IMF's Trade Restrictiveness Index. **Unit:** 1 to 10, higher scores denoting less open trade regimes. The original index has been re-scaled so that higher values denote more open trade regimes. **Coverage:** yearly observation for 1997-00 (140 countries). **Source:** IMF.

Additional Controls

GDP — **Definition:** Gross domestic product per capita. **Unit:** current international US\$ PPP. **Source:** Global Development Finance and WDI.

POLR — **Definition:** Freedom House's Political Rights index. **Unit:** ranging from 1 to 7, higher values denoting absence of political rights. The original index has been inverted and re-scaled into a 0 to 10 scale, lower values denoting absence of political rights. **Source:** Freedom House (<http://freedomhouse.org>).

OILMIN — **Definition:** Dummy for countries heavily dependent on fuel and mineral exports. Takes the value of one if the combined share of "fuel exports" (as percentage of merchandise exports) and "ores and metals exports" (as percentage of

merchandise exports) is greater than 50 per cent. **Unit:** 0-1 dummy. **Source:** export data from WDI (2000).

ETHNIC FRAC — **Definition:** Ethnic fractionalisation index, ranging from 0 to 1 (combination of various measures of fractionalisation). **Source:** La Porta *et al.* (1998).

GOVEXP — **Definition:** Consolidated Central Government total expenditure as percentage of GDP. **Unit:** percentage. **Source:** IMF Government Financial Statistics CD ROM (2000).

COLONIAL PAST — **Definition:** Dummy for “ever a colony” countries (OECD founder countries are excluded). **Unit:** 0-1 dummy. **Source:** Issue Correlates of War (ICOW) **Project**, Dr. Paul R. Hensel, homepage at <http://garnet.acns.fsu.edu/~phensel/icow.html>

PROTESTANT — **Definition:** Dummy for countries where Protestant religion accounts for more than one third of the population. **Unit:** 0-1 dummy, one denoting protestant countries. **Source:** La Porta *et al.* (1998).

DEMOCRACY — **Definition:** Dummy for democratic countries in all 48 years between 1950 and 1998. **Unit:** 0-1 dummy. **Source:** Treisman. (2000).

OECD ENGL — **Definition:** Dummy for OECD member countries. **Unit:** 0-1 dummy. **Source:** OECD website.

Instruments

DISTANCE — **Definition:** Bilateral distances. **Unit:** Km. **Source:** <http://www.eiit.org/Trade.Resources/TradeData.html#Gravity>

EXPORT Shares — **Definition:** Export of goods and services as a share of world export of goods and services. **Source:** WDI (2000).

LATITUDE — **Definition:** Distance from the Equator. **Unit:** degrees. **Source:** Easterly database.

TROPICS— **Definition:** Dummy for tropical countries if absolute value of latitude is less than or equal to 23. **Unit:** 0-1 dummy.

ENGL — **Definition:** Dummy for English speaking countries. **Unit:** 0-1 dummy. **Source:** La Porta *et al.* (1998).

NOTES

1. In a companion paper, Braga de Macedo (2001) emphasises the implications of better governance for institutional change in developing countries.
2. For an interesting look at the Wagner's Law, see Easterly and Rebelo (1994).
3. For a sceptical survey of the literature, see Rodriguez and Rodrik (1999) and papers cited therein.
4. The propositions in the text are illustrated by Figures 2 to 4 in Braga de Macedo (2001), which are based on the data set used in this paper.
5. For a recent survey see Aron (2000) and for an interesting approach to the causality issue see Acemoglu *et al.* (2000).
6. Using readily available measures of openness and GDP per capita in a standard ordinary least squares estimation would produce biased coefficients.
7. Since population is highly correlated to import openness, the logarithm of land area is a better measure of size for our purposes.
8. Since $\beta = \frac{\partial Corr}{\partial \ln X} = \frac{\partial Corr}{\frac{\partial X}{X}}$.
9. Notice that the variable "government consumption" includes public wages and salaries, and that it is notoriously difficult to have uniform and good quality data on public finance variables across countries.
10. However the effect of ethnic fractionalisation on corruption is not clear. While recent investigations indicate high fractionalisation as a negative determinant of growth, studies focusing on the causes of corruption do not find such a clear-cut result. Gatti (1999), for instance, finds that fractionalisation is significant and reducing corruption. This finding is explained in terms of the increased difficulties bureaucrats encounter in extracting bribes from ethnic groups they do not belong to.
11. This is elaborated in Braga de Macedo (2001). In appendix, we show the countries forming the groups of "never a colony", "protestant", "democracy", "OECD" and their group averages for M-Openness, GDP, and corruption indices.
12. The gravity model micro-foundations are found in Helpman and Krugman (1985) and Deardorff (1998).
13. Hall and Jones (1999), Gallup, Sachs and Mellinger (1999), Engermann and Sokoloff (1997), Bloom and Sachs (1998), Masters and McMillian (2000), Sachs (2000), Masters and Wiebe (2000), and Acemoglu, Johnson and Robinson (2000).
14. Time dummies provide indispensable time dependent variables.
15. We carried out two types of tests: on the one hand, we checked for endogeneity of both variables and on the other hand for endogeneity of just one of the two. Results are not shown here but available upon request.

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