ISSUES PAPER ON CORRUPTION AND ECONOMIC GROWTH

Introduction

The Russian Presidency of the G20 has chosen growth as the underlying priority of its agenda of the Saint Petersburg Summit. The "Russian Presidency of the G20: Outline" states:

The core objective of the Russian Presidency is to concentrate the efforts of the G20 – the forum of the world's largest economies – on developing a set of measures aimed at boosting sustainable, inclusive and balanced growth and job creation around the world.

In the context of the G20 efforts to fight corruption, the G20 Anticorruption Working Group has asked the OECD to lead the work examining the impact of corrupt practices and anticorruption policies on economic growth and development, resulting in this Paper to be presented to the G20 Leaders at the St. Petersburg Summit in September.

Through an investigation of the relationship between corruption and anticorruption measures on the one hand, and economic performance on the other, and an analysis of the manifold channels through which this relationship operates, this paper offers a better understanding of the complex factors constraining the economic potential of countries affected by this phenomenon. Indeed, it demonstrates that, while the direct link between corruption and GDP growth is difficult to assess, corruption does have significant negative effects on a host of key transmission channels, such as investment (including FDI), competition, entrepreneurship, government efficiency, including with regards to government expenditures and revenues, and human capital formation. Furthermore, corruption affects other important indicators of economic development such as the quality of the environment, personal health and safety status, equity (income distribution), and various types of social or civic capital ("trust") - which impact significantly on economic welfare and, in the case of trust, also a country's development potential.

The G20 agenda on anticorruption as laid out in the 2010 and 2012-2013 Anticorruption Action Plans addresses many of the challenges related to the transmission channels. Tackling domestic and foreign bribery and building transparent and accountable public institutions helps enhance investment and competition and promotes public sector integrity, government efficiency, and entrepreneurship. Further analysis and research at the country level would establish where and how corruption is hurting economic performance, and how the objectives of policy measures and reforms may be more clearly defined. This would also address the difficulty of assessing progress and ascertaining the impact of anticorruption policies – which is currently an obstacle to more decisive, coherent and sustained action in this field in many countries.

This paper, therefore shows that strong and systematic implementation of the various elements of the anticorruption agenda is necessary to address the impact of corruption on the various transmission channels, and consequently on sustained economic growth. This holistic approach builds the case for a global reform agenda to curb corruption that takes account of

the efforts led in other strands of the G20. Building on the preliminary outcomes presented in this issues paper, further work based on countries' experience could help define specific policy recommendations aimed at tackling the various transmission channels, including those discussed in other areas of the G20 agenda (such as the Development Working Group, the finance track on economic growth, investment and infrastructure and), to inform countries' strategic discussions on the G20 Anticorruption agenda in line with the St Petersburg Strategic Framework.

Executive Summary

Policy-makers' attention has increasingly focused on public sector corruption –- the abuse of public office for personal economic gain – as a key determinant of economic performance. Recent advances in the measurement of corruption and other public sector governance indicators have facilitated the examination of the relationship between corruption and output.

The strong negative correlation between perceived corruption and the level of output provides *prima facie* evidence of the negative impact corruption has on value creation. While the causality underlying this relationship is likely to run both ways, the majority of analysts agree that it is primarily running from corruption to output rather than in the opposite direction. Still, the two-way relationship has the potential of setting in motion a virtuous circle, where output gains from curtailing corruption can be invested in human and civic capital necessary to make further progress in reducing corruption, leading to more output gains, and so forth.

The strong correlation between the levels of output and perceived corruption does not establish a direct causal relationship. A major reason why this is so is the fact that corruption indicators tend to be highly correlated with other public sector governance indicators, like the rule of law, government effectiveness, and regulatory quality. Consequently, the corruption impact on output observed in empirical analysis tends to also capture some of the beneficial effects of good governance in general, if the pertinent indicators are not included in the analysis. This is indeed confirmed by the fact that estimated effects of corruption on output tend to change in both size and significance if other governance indicators are included in the analysis.

The true social cost of corruption cannot be measured by the amount of bribes paid or even the amount of state property stolen. Rather, it is the loss of output due to the misallocation of resources, distortions of incentives and other inefficiencies caused by corruption that represent its real cost to society. And in addition to these output losses, corruption can inflict additional welfare costs in terms of adverse effects on the distribution of income and disregard for environmental protection. Most importantly, corruption undermines public trust in the government, thereby diminishing its ability to fulfil its core task of providing adequate public services and a conducive environment for private sector development. In extreme cases, it may entail the delegitimization of the state, leading to severe political and economic instability. The resulting general uncertainty is detrimental to private business' willingness and ability to commit to a long-term development strategy, lack of which makes sustainable development hard to achieve.

In contrast to the strong correlation between perceived corruption and output levels, the correlation between perceived corruption and GDP growth is weak. There are a number of possible reasons for the low correlation between these two variables: the linkages are likely to be complicated, indirect, time variant, and non-linear. And it is indeed conceivable that corruption actually facilitates growth in situations where prevailing government regulations are growth-impeding. Analysis of such situations reveals, however, that they always represent second- (or third-) best scenarios, and that removing the regulatory impediments to growth is better than circumventing them by corruption. Similarly, where "close and intimate" links between public sector officials and leaders of industry (aka "crony capitalism") are claimed to facilitate rapid growth, an explicit and transparent industrial policy should be capable of achieving similar or superior results, without the damaging secrecy and unfairness that crony capitalism necessarily implies. These findings support continuing policies that strengthen accountability and enforce transparency in order to achieve sustainable economic growth.

Corruption may not affect output directly, but operates through different transmission channels that have been studied extensively. They include (indirect) corruption effects on both output levels and growth rates. The most thoroughly studied transmission channel is private investment: by reducing its profitability and increasing uncertainty, corruption will tend to depress the level of business investment. This applies *a fortiori* to the sub-category of foreign direct investment, which is a major vehicle of technology transfer. These effects will in turn reduce the attractiveness of entrepreneurship, diverting entrepreneurial talent to less productive activities, which will negatively impact the pace of innovation and thus economic growth.

An important channel through which corruption affects economic performance is by impacting both the volume and the composition of government expenditures and revenues, subject to existing tax legislation and incomes. By reducing both direct and indirect tax revenues, corruption jeopardizes the public sector's ability to provide adequate levels of public goods to facilitate private sector development. On the expenditure side, diversion of resources from human capital formation (health and education) to less capacity enhancing activities curtails countries' growth potential. Several studies show a particularly damaging effect of corruption on on-going poverty alleviation programmes in low income countries.

Various transmission channels are characterized by a possible two-way causality: for example, the (negative) correlation observed between corruption and openness to trade may well be due to barriers to trade established for other reasons (e.g. in support of industrial policies), which then open up opportunities for corruption. The same is true regarding various types of government regulations aimed at addressing genuine market failures. And the specific design of the tax system and tax collection procedures may increase opportunities for corruption, leading to lower tax revenues. On the other hand, government regulations and red tape, including barriers to free trade, may be excessive because corrupt bureaucrats and politicians want to create and maintain an environment that allows them to extract rents through corruption.

Since corruption will only exist if it is possible to hide the illegal deals involved or to avoid punishment if they are discovered, transparency and accountability are arguably the most important ingredients of an environment aiming at minimizing corruption. Policies

ensuring sound accounting, internal control, and auditing systems in the public sector are crucial for transparent and accountable institutions that enable sustainable and balanced growth. In terms of public sector governance indicators, it confirms the importance of the "rule of law", free from political interference, to facilitate the fair prosecution of perpetrators of corruption, and "voice and accountability" to allow voters to sanction governments which fail to live up to the public's aspirations to a corruption-free environment. Policies should therefore be crafted to support the legal protection of whistle-blowers as well as the presence of a vigorous and independent media.

Additional ingredients of an effective anticorruption policy are to guide and check bureaucrats' discretion in the application of established government policies and to reduce the temptation of corruption by adequate civil servants' compensation. More generally, various aspects of institutional quality and public sector governance have been identified as important intervening variables between corruption and economic growth. In addition to the broad principles such as "transparency and accountability", "rule of law" and "regulatory quality", identified good practices could help countries create or strengthen the institutional environment conducive to reducing corruption. Together with comparative analysis they can explain which institutional arrangements work, how, why and under which circumstances.

International organizations – both public and private – have become increasingly involved in the fight against corruption. They can play a positive role by providing expert advice and capacity building assistance to countries determined to tackle corruption. By disseminating information on –- and facilitating access to –- best practices in anticorruption policies, they can accelerate and improve on-going reforms. But they cannot substitute for the genuine motivation of local stakeholders and governing elites in particular, as well as cultural change, which is essential for the success of such policies. On the other hand, international cooperation is essential in fighting those aspects of corruption that are outside the control of local policymakers, like international money laundering, denial of opportunities for investment of ill-gotten wealth in financial and real sectors, illicit substance and human trafficking, and repatriation of stolen state property, including tax evasion. Some progress has been made in this area recently, but much remains to be done. This further demonstrates the potential spill-over effect of corruption and systemic dimension that it may take, building the case for strong role the G20 can play to move the reform agenda forward.

Specific country experience corroborates many of the policy conclusions emerging from the empirical and theoretical literature. The case of Singapore clearly demonstrates the crucial importance of unconditional support by a country's top leadership for a successful transformation from a high to a low corruption environment. Similar lessons can be drawn from anticorruption campaign in Hong Kong, China, in the first half of the 1970s. In both of these contexts, anticorruption measures were accompanied by improvements in most other public sector governance indicators as well, supporting a holistic approach to anticorruption policies. It is interesting to note that the successful anticorruption campaigns in both Singapore and Hong Kong, China were implemented when they were still relatively poor, and were characterized by a subsequently superior output performance, raising both countries' per capita income well above the OECD average by 2011. This lends credence to the hypothesis that curtailing corruption has a major pay-off in terms of output performance, and that causality runs mainly from less corruption to higher output, rather than in the opposite direction.

I.   Corruption and economic growth and development

i.   Corruption: typology and measurement

The focus of this paper is on corrupt practices involving public officials, how they impact the allocation of resources and economic growth, and how pertinent policies can improve the resulting outcomes. A definition of corruption that corresponds to this focus is "the abuse of public office for private (economic) gain".[1] This excludes corrupt practices that occur exclusively among private sector agents, and purely "political" corruption, which focuses on the allocation of political power, rather than economic resources (although in practice the two frequently overlap). Even such a limited interpretation of the term "corruption" covers a considerable number of different human actions, which may in turn differently affect the operation of the economy. Therefore to analyse how "corruption" affects the economy (and growth in particular) requires the unbundling of the term into the specific human actions it comprises.

Box 1

The cost of corruption

A widely quoted estimate by the World Bank(2013) puts the total amount of bribes paid in both developing and developed countries in 2001/2002 at 1 trillion dollars, about 3 % of world GDP at the time. This estimate does not include embezzlement of public funds or theft of public assets, which are extremely difficult to estimate, although it is known by now that deposed kleptocrats in Indonesia, Nigeria, and Zaire for example embezzled tens of billions of dollars while in office. Shocking as these figures may be, they are not a good measure of the cost of corruption because they represent transfers of financial assets between individuals, or from the state to the kleptocrat, affecting income and wealth distribution, but not necessarily output.

The real (social) cost of corruption is inflicted indirectly by changing individuals' and firms' incentives structures, which can lead to lower productivity of scarce resources, including labour as well as physical and human capital. In addition it is likely to reduce the accumulation of both physical and human capital and/or lower their quality. Corruption's detrimental effect on the efficiency of resource allocation operates through the weakening of market mechanisms, the reduction in the quantity and quality of public goods supplied by governments, the diversion of entrepreneurial talent and real resources to rent seeking, and the subversion of government regulation aimed at mitigating the effects of externalities. In combination, these effects tend to lower the level of output and its growth rate, as discussed in more detail in section 2 of this paper. To how much do the resulting output losses amount is difficult to assess.[1] They are, however, significant enough to have induced the World Bank (2011b) to declare corruption as "…among the greatest obstacle to economic and social development" by undermining the rule of law and weakening the institutional foundations on which sustainable development depends. This assessment implies that apart

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[1] There is no agreement among anticorruption practitioners on a single definition of corruption. In fact, neither the UNCAC nor the OECD Anti-Bribery Corruption provides a broad definition of corruption. Rather, they define specific corrupt acts that should be criminalized. A more detailed discussion of the definition of "corruption" and its scope can be found at the World Bank website on "Helping Countries Combat Corruption": . The definition adopted here is based on this material.

from the substantial output losses entailed by corruption, its most corrosive effect consists of eroding public trust and ultimately delegitimizing the state, as summarized by the OECD(2013): "…disappointed citizens might turn away from the state, retreat from political processes, migrate – or – stand up against what they perceive to be the corrupt political and economic elites. The global uprisings from the Arab world to India, Brazil and occupy Wall Street are proving that business as usual can no longer be an option for a number of countries."

[1] Even modest estimates of the reduction in output growth, when cumulated over time, imply massive output losses due to corruption: The World Bank Institute has published research suggesting that in many developing countries these losses may exceed 100 per cent of current GDP.

Typology

Different actions abusing public office for private economic gain ("corruption", as defined in this Paper) can be categorized in various dimensions to facilitate the understanding of how corruption affects economic performance. The concept includes three broad categories of human action: bribery, theft of public assets, and patronage.

Bribery is the most familiar among corrupt processes: it consists of payments by individuals or firms to public officials in order to influence administrative decisions under their responsibility. Bribery covers a wide range of administrative decisions, determined by the scope of government regulations and activity. It frequently overlaps with the other two corruption categories through the collusion of briber and bribee.

Theft of public assets can occur as unilateral embezzlement by public officials or through the collusion of public officials and private agents. Apart from the illegal transfer of real or financial public assets at below-market prices, it includes evasion of taxes and other legal payments to the public sector, as well as diversion of public funds from their intended use into private pockets.

Corruption in the form of patronage (sometimes called favouritism, nepotism, clientelism) consists of the preferential treatment of firms and/or individuals by public officials regarding the compliance with government rules for the allocation of government contracts or transfer payments. The private sector counterpart consists of "special favours" in the form of financial rewards or professional opportunities granted to the public official involved.

Another distinction which is relevant for impact analysis is that between **centralized and decentralized corruption**. Decentralized corruption prevails if the transactions involved are not coordinated within the public administration. Centralized corruption tends to be more predictable than decentralized corruption, thus reducing the uncertainty involved. By internalizing some of the negative effects of corruption, its centralisation may reduce the degree of the distortions created.

Depending on how common and widespread corruption is in the economy, a distinction is made between **occasional (incidental) and systemic corruption**. Corruption is considered to be systemic (or endemic) if it is widespread and generally considered by the public as regular behaviour of public officials (and by implications of private agents dealing with them). It is characterized by the absence of effective sanctions against corrupt behaviour.

Finally, an act of corruption can be characterized by the value of the transaction concerned. Although this is a continuous variable, the analytical distinction usually made is between low value **("petty")** and large value **("grand") corruption**. Typically, the larger the value of the corrupt transaction, the higher the position in the public hierarchy of the public official(s) involved.

Various combinations of the characteristics detailed above have given rise to specific types of corruption. Thus systematic theft at a grand scale by high public officials is called "kleptocracy", while systematic patronage with large stakes has been labelled "crony capitalism" or "government capture". "Kick-backs" describe acts of bribery that involve theft of public assets or patronage.

Measurement

Given their illegal nature, corrupt transactions are typically cloaked in secrecy and can therefore not be systematically recorded. Thus, no official aggregate statistical records ("hard data") of the incidence of corruption exist. Statistics on the criminal prosecution of corrupt activities are as much or more an indicator of the legal tolerance of corrupt practices than of their prevalence in a given jurisdiction. For this reason, available aggregate measures of the prevalence of corruption rely on the perceptions of economic agents dealing routinely with government officials. Their assessments are recorded periodically and statistically processed in various ways to provide ordinal and cardinal measures of corruption under different jurisdictions (nations or territories). The most prominent among these corruption measures, used in most empirical studies of the impact of corruption on economic activity, are:

i.   The "corruption perception" index (CPI) and bribe payers' index (BPI) produced by Transparency International;
ii. The "control of corruption" (CC) indicator produced by the Worldwide Governance Indicator (WGI) project of the World Bank (this is an aggregate of pertinent indicators available elsewhere);
iii. A corruption index sold by the International Country Risk Guide (ICRG), a private business consulting company.

Given similarities in their methods of preparation, the correlation among these alternative indicators tends to be high (e.g. the correlation coefficient between the latest available CC(2011) and CPI(2012) indicators is 0.986). While these indicators have been widely used in empirical research, some authors have questioned the accuracy of these measures and the validity of their use in empirical research (most recently Campbell(2013)). However, notwithstanding the validity and reliability of perception indicators as measures of the reality of corruption, they remain in fact, a reference for people and both business and political leaders to make decisions, explaining their use in gauging the impact of corruption on the economy.

Box 2

How does corruption differ from user fees and lobbying?

It has been argued that bribery of public officials who control the implementation of business regulation is not unlike the application of the "user pays" principle in the provision of administrative services (Allen and Qian, 2007). However, these transactions obviously differ in terms of who receives the revenue. Another crucial difference between the two is that corruption is by definition a secretive activity, thus lacking transparency and **predictability** that characterize official user pays schemes. In addition, the services and favours promised in a corrupt transaction cannot be enforced legally, thus augmenting **risks and uncertainty** for the business person involved.

Similarly, it has been argued that there is not much difference (in terms of economic effects) of corrupt patronage ("crony capitalism") and "lobbying" (Maiello, 2009). While ideally lobbying serves to provide pertinent expert information to the decision-making process of independent legislators and bureaucrats, it has often the effect of protecting economic benefits of narrow interest groups to the detriment of overall welfare. Such outcomes can be achieved through illegal payments or benefits in kind bestowed on decision-makers in the public sector by lobbyists (in which case lobbying has transmogrified into corruption). Despite legislative and regulatory efforts to make lobbying activities transparent, and avoid their abuse, serious difficulties of effective monitoring usually persist (OECD 2010[2]c, OECD 2012[3]b Transparency International, 2009).

The working definition of « corruption » adopted in this paper implies that by definition corruption involves violating government rules and/or circumventing prescribed government procedures. It follows that if these government rules and procedures are adverse to economic performance, then it is theoretically possible for corruption to actually have a positive effect on economic outcomes.[4] Several studies actually make this claim, and they are supported by some of the empirical evidence reviewed. In fact, this view of the role of corruption tended to be popular regarding the take-off period in low-income countries in the second half of the 20th century (Leff, 1964). However, this view was challenged early on by Myrdal(1968), and increasingly so with the rise of institutional economics. But, notwithstanding the explosion of theoretical and empirical research on corruption since the 1990s, the controversy persists to this day (Svensson, 2005). As a consequence, two competing hypotheses regarding the effect of corruption on economic growth can be found in the literature (Aidt,2009): the "greasing the wheels" hypothesis, which postulates that corruption is beneficial for growth and development because it allows to circumvent administrative impediments, and the "sand in the wheels" hypothesis, which postulates that corruption impedes growth and development because it entails resource misallocation, raises transaction costs, and has other negative effects. This paper analyses both the theoretical underpinnings of these competing hypotheses as well as what the empirical studies reveal about their respective relevance.

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[2] Lobbyists, Government and Public Trust: Volume 1 Increasing transparency through legislation
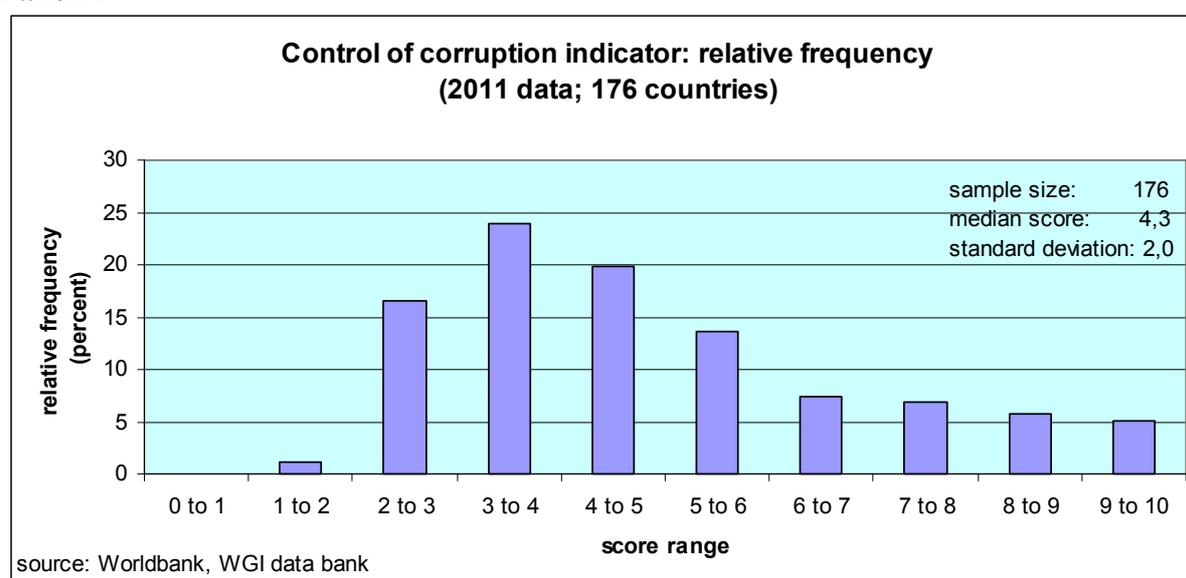[3] "Lobbyists, Government and Public Trust: Volume 2 Promoting Integrity through Self-regulation
[4] For the argument to apply, the social cost of corruption has to be less than the gains from circumventing government imposed obstacles to growth – a condition some experts consider unlikely to be ever met.

ii. Corruption and economic performance

Before presenting the results of individual studies, it will be useful to present a broad picture of the observed relationship of indicators of corruption and output levels (as measured by GDP) and growth rates. 2011 data on the corruption indicator used[5] and GDP pc at purchasing power parity (IMF) are available for 210 and 181 countries/territories respectively, with an overlap of 176 entities (including all G20 nations), which constitute the sample used in this paper. Figure 1 presents a histogram of the 2011 control of corruption (CC) indicator scores and their geographical distribution. The original World Bank CC indicator has been rescaled to run from 0 to 10, where 0 (10) represents the highest (lowest) level of perceived corruption.

Figure 1: Incidence of corruption

Panel A

**Control of corruption indicator: relative frequency
(2011 data; 176 countries)**

sample size: 176
median score: 4,3
standard deviation: 2,0
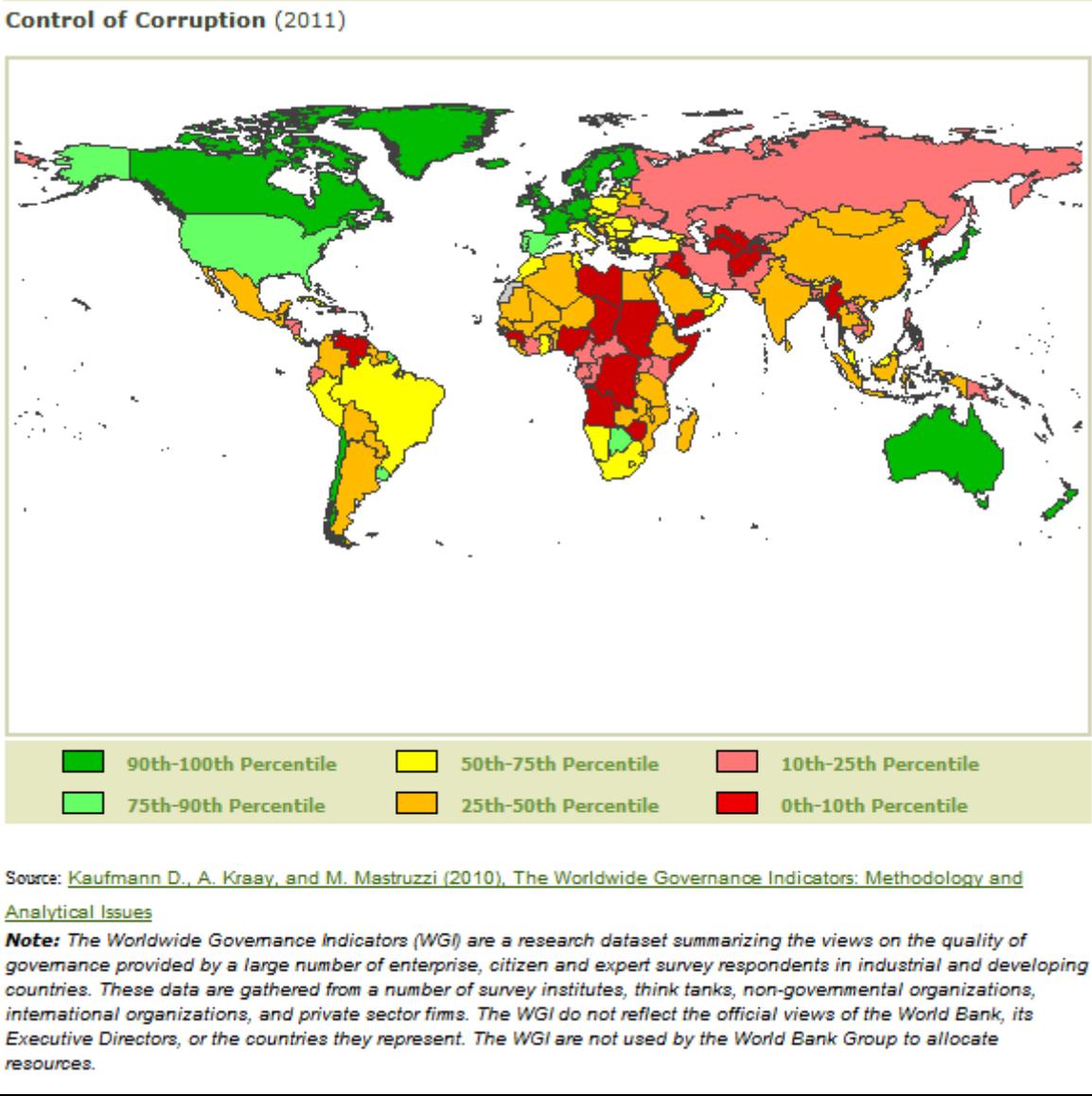
source: Worldbank, WGI data bank

Panel B

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[5] The "control of corruption" (CC) indicator produced by the Worldwide Governance Indicator (WGI) project of the World Bank.

Geographical distribution

Control of Corruption (2011)

🟩 90th-100th Percentile	🟨 50th-75th Percentile	🟥 10th-25th Percentile
🟢 75th-90th Percentile	🟧 25th-50th Percentile	🟥 0th-10th Percentile

Source: Kaufmann D., A. Kraay, and M. Mastruzzi (2010), The Worldwide Governance Indicators: Methodology and Analytical Issues

Note: The Worldwide Governance Indicators (WGI) are a research dataset summarizing the views on the quality of governance provided by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries. These data are gathered from a number of survey institutes, think tanks, non-governmental organizations, international organizations, and private sector firms. The WGI do not reflect the official views of the World Bank, its Executive Directors, or the countries they represent. The WGI are not used by the World Bank Group to allocate resources.
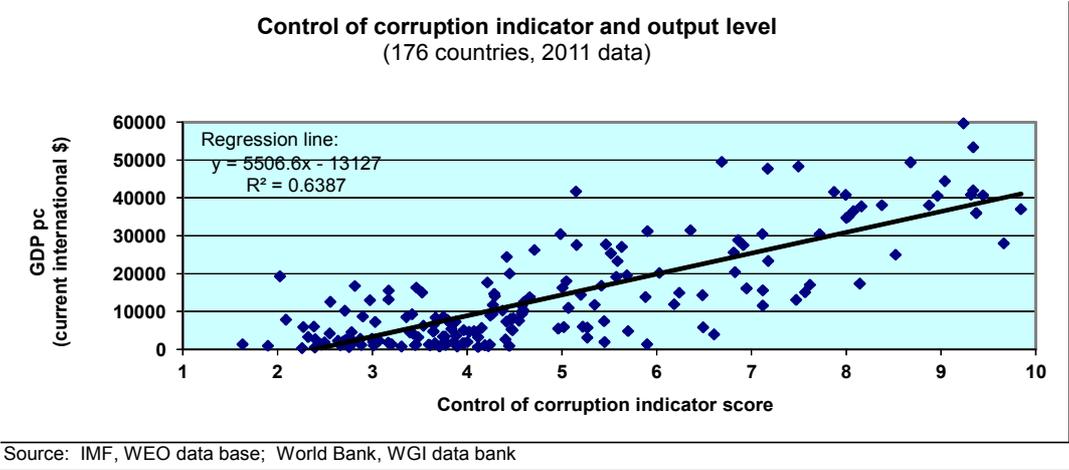
Source: Worldwide Governance Indicators, World Bank's website.

Figure 2 shows the correlation between the CC indicator and per capita GDP at purchasing power parity. The correlation between the two indicators is high (correlation coefficient: 0,77), and the inter-country variation in CC "explains" some 64 per cent in the per capita GDP variation. An improvement in the CC indicator by one standard deviation (2 points) is associated with an increase of some 11000 $ in GDP pc (in 2011 prices). This should, however, not be interpreted as a causal relationship, since in a bivariate regression of GDP pc on the corruption indicator the high correlation between the CC and other component indicators of the quality of public sector governance (WGI) are likely to cause the CC indicator to reflect the output effect of governance quality in general. Another question is whether the causality underlying this high correlation runs from corruption to output or whether it is the level of per capita income that determines the level of corruption. This issue is discussed in more detail in Text Box 3.

Figure 2: Corruption and output levels

Control of corruption indicator and output level
(176 countries, 2011 data)

Regression line:
$y = 5506.6x - 13127$
$R^2 = 0.6387$

Source: IMF, WEO data base; World Bank, WGI data bank

Box 3

Corruption and output: Reverse causality and virtuous circles

The direction of causality underlying the high correlation between the corruption indicator and the output measure (GDP per capita) can be interpreted in different ways: On the one hand, it has been argued that this correlation provides strong evidence for the pernicious effects of corruption on economic efficiency. This is indeed the dominant interpretation of the evidence, as documented in the review of the relevant literature in Part II of this paper. However, some observers have conjectured that the causality may mainly run in the opposite direction: high-quality institutions (and thus low incidence of corruption) are expensive, and only rich countries can afford them. Svensson(2005) summarizes this hypothesis and refers to various authors presenting this view. Evidence against the reverse causality hypothesis is provided by the historical experience of Singapore and Hong Kong, China. Both of them introduced stringent anticorruption policies (in combination with general public sector governance reforms and improvements) at low levels of development (in terms of per capita income), while their subsequent economic growth and development has been quite spectacular. Today their per capita GDP exceeds that of the OECD average, while in the early 1950s it was not much different from income levels in many African countries at the time.

Although the majority of experts argue that causality predominantly runs from corruption to lower output and growth, the alternative interpretation likely contains some truth as well: high quality governance institutions, essential for reducing corruption, require levels of human capital which low-income economies have great difficulty to acquire and sustain for lack of resources (e.g. skilled lawyers and accountants). But whatever a country's level of development, there will always be opportunities to improve the quality of its governance and reduce corruption at the margin. And such improvements will in turn facilitate further development, which will then provide resources which can be applied to improving the quality of governance further, thus creating a virtuous circle. However, such a virtuous circle is far from being inevitable – it requires a persistent political will and vigilance, including at the highest level of government, to protect it from complacency and vested interests.

Unlike in the case of GDP per capita levels, the raw data reveal little correlation between medium-term growth rates of output and the corruption indicator (Figure 3). So, if there is a causal relationship between these two variables, it has to be teased out by more sophisticated

analysis (see Part III below). It has been observed that this lack of correlation may be due to the fact that poorer countries (which also tend to have higher levels of perceived corruption) on average have higher rates of output growth than richer countries (the convergence hypothesis). However, including the start-of-observation-period GDP level as an explanatory variable in the regression of output growth on perceived corruption (the conventional way of testing the convergence hypothesis) does not render the regression coefficient of the corruption indicator statistically significant when the entire set of countries is included. Omission of some countries from the data set and including additional explanatory variables can lead to a significant coefficient for the corruption indicator, but a different choice of countries and explanatory variables can also produce significant coefficients with the opposite sign.

The relationship between output levels and growth rates for the G20 group of nations is presented in Figure 4 for comparison.
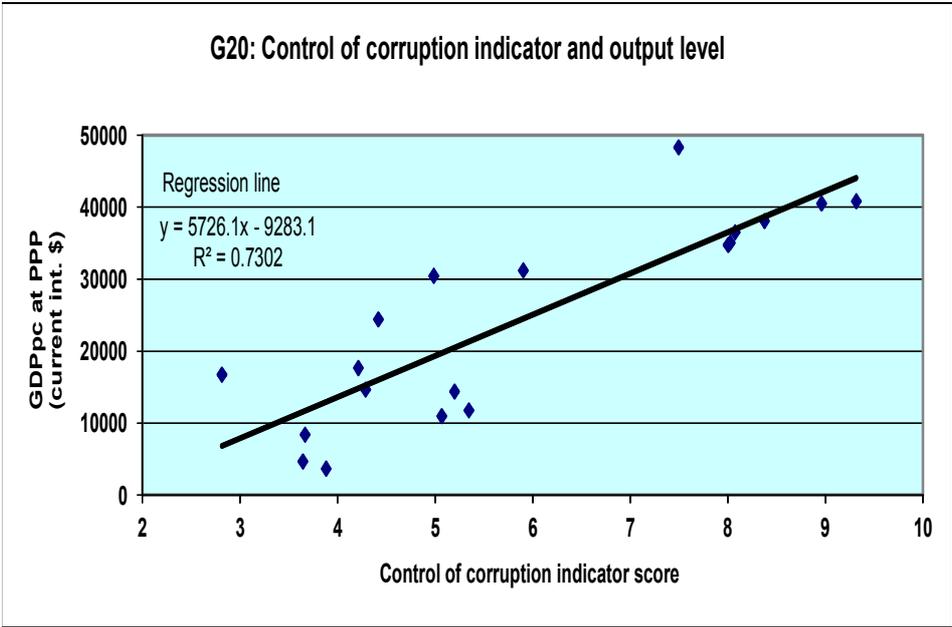
Figure 3: Growth of GDP pc and corruption level
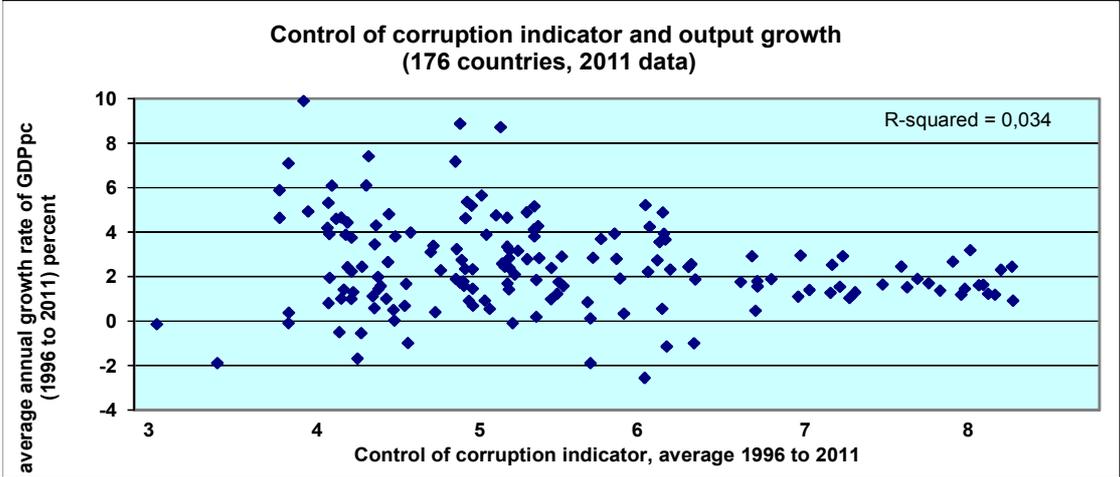
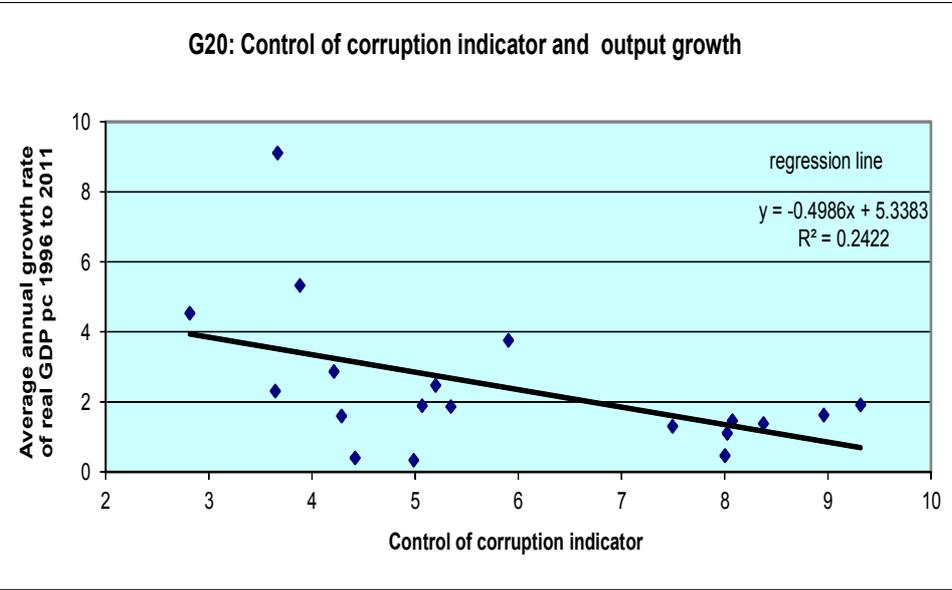Source: IMF, WEO data bank; World Bank, WGI data bank

Figure 4: G20 – Corruption and output

Panel A

G20: Control of corruption indicator and output level

Regression line

y = 5726.1x - 9283.1
R^2 = 0.7302

GDPpc at PPP (current int. $)

Control of corruption indicator score

Source: IMF, WEO data bank; World Bank, WGI data bank

Panel B

G20: Control of corruption indicator and output growth

regression line

y = -0.4986x + 5.3383
R^2 = 0.2422

Average annual growth rate of real GDP pc 1996 to 2011

Control of corruption indicator
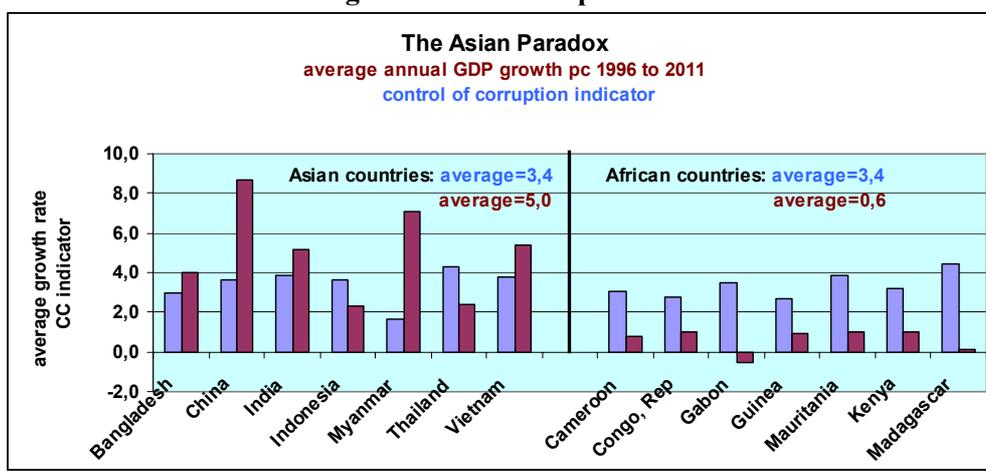
Source: IMF, WEO data bank; World Bank, WGI data bank

These data display an even stronger correlation between corruption and the GDP pc level than observed in the larger sample. However, there seems to be a negative relationship – if any - between output growth and the corruption indicator, a result indicative of what has been labelled "the Asian Paradox": several Asian economies which have very high levels of corruption as gauged by the conventional perception indicators also record some of the highest GDP growth rates. This paradox is explored further in Text Box 4.

Box 4

Corruption and output growth: Asian exceptionalism?

A major puzzle in the discussion of the corruption-growth nexus is the combination of rapid growth and high levels of perceived corruption in many Asian economies. Over the period 1996 to 2011 the average GDP pc growth rate of a sample of Asian economies has exceeded the average growth rate in a sample of African countries with very similar levels of perceived corruption more than eightfold (Figure 5). Statistical analysis by Rock and Bonnett (2004) corroborates this observation: testing the impact of corruption on growth and investment in five large Asian developing countries separately from its effect in other small(er) developing countries, the authors find a positive and significant correlation between the level of perceived corruption and GDP per capita growth in the large Asian economies.

Figure 5: The Asian paradox.

Source: IMF, WEO data bank; World Bank, WGI data bank.

Various analysts have attempted to explain this phenomenon[1]. Whatever the underlying reasons explaining the remarkable growth performance of these countries, the relevant policy question is whether and why the observed growth *cum* corruption regime is more successful in generating rapid growth than reliance on competitive markets, and if so, why this advantage is exploited in the large Asian NICs, but not elsewhere. Another question is whether the superior growth performance achieved under the corruption *cum* growth regimes at the early stages of development can be maintained as these economies move towards higher value-added activities. While a number of plausible arguments has been advanced to elucidate the causes

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underlying the Asian paradox, a comprehensive and robust explanation lending itself to firm policy conclusions has so far not been found[2].

More generally, several different mechanisms through which corruption may have a positive effect on output have been identified. For instance, if existing government rules and procedures are detrimental to growth, (Leff, 1964) or where their slow implementation may delay transactions and thus reduce efficiency (Batabyal and Yoo, 2007), bypassing them through corruption may actually benefit growth. However, the correct policy response would be to remove or modify the inefficient rules rather than tolerating corruption, which always has negative effects on general trust in the government and its legitimacy, as well as adverse effects on income distribution. Similarly, corruption in the form of theft of publicly-owned assets may lead to an increase in output if the new proprietors of the asset exploit it more efficiently. The efficiency-enhancing consequences of transferring productive assets from the public to the private sector have been studied extensively in the context of economic reforms in transition economies (Ehrlich et al., 1994). Little is known, however, about whether and how the legal modalities of this asset transfer influence their effect on output. In any case, it would seem counterproductive to defend theft and embezzlement of public property as a viable growth strategy, as it fatally compromises the "rule of law" - which is a key component of public sector governance, whose crucial effect on the performance of an economy has been well established by both theoretical and empirical research. The obvious policy response to a situation where private use of assets owned by the public sector enhances efficiency and output is to either sell or lease these assets through competitive and transparent auctions.

[1] See Marazza (2006); Rock and Bonnett (2004); Ugur and Dasgupta (2011). Their explanations combine a number of specific characteristics of corruption which are based on theoretical classifications developed by earlier analysts. Most of these explanations, however, provide reasons why corruption in the countries concerned is less detrimental than it could be, rather than arguing convincingly that it makes a positive contribution to efficiency and growth
.[2] In this context, it is also interesting to observe that over the period 1927 to 1946 the average growth rate in the Soviet Union exceeded that in the United States, but the socio-economic regime which produced this result proved increasingly less capable of sustaining growth in the post-war period. Similarly, the crony capitalism that characterises rapid growth regimes in many Asia economies today also prevailed in Korea and China's Taipei at an earlier stage of their development. As these countries moved into the group of higher-income countries, characterized by more sophisticated technologies and innovation, their perceived corruption rating had improved.

II.   Channels through which corruption can affect output and growth

i.   Transmission mechanisms

The power of competitive markets to allocate economic resources efficiently has been well established in theory and has important implications for economic policy. However, in the real world, significant market imperfections often lead to inferior outcomes which governments can mitigate by judicious and targeted intervention in the economic process. These government interventions comprise the regulation of business activity to compensate for, or at least mitigate, the effects of pervasive market imperfections (e.g. imperfect and asymmetric information, externalities etc.). And the existence of public goods requires governments to organize their supply. In order to finance these essential government activities, the latter has to impose a system

of taxation. In this context, corruption is possible because the perpetrators are able to conceal their corrupt actions (lack of transparency) and because it is costly to control their activities properly. But this can be significantly moderated by the quality of public sector governance ("Voice and accountability" in particular), explaining why some countries with large government sectors also rank among the least corrupt (e.g. virtually all Scandinavian countries), thanks to their superior quality of governance. Effective anticorruption policies should strive to ensure transparent and accountable public institutions, rather than focus on the extent of government involvement.

The following summary/overview of transmission channels through which corruption can affect economic performance is based on both survey articles and individual studies.[6] This literature includes both tightly-argued causal relationships based on formal theoretical models as well as less rigorously derived conjectures based on more or less intuitive, *ad hoc* reasoning. In most cases, this literature contains empirical tests of the postulated relationships between corruption and different independent variables representing alternative transmission channels. The quantitative results reported in these studies frequently differ considerably, depending on estimation methods employed, inclusion of other explanatory variables, sample differences regarding countries and time periods covered, etc. A more comprehensive analysis of countries' experiences and transmission channels would help define specific policy recommendations designed to address the risks for corruption affecting economic performance.

Private investment

When private business investment is subject to government regulation, corruption in the form of bribes for processing the pertinent requests will increase the cost of investment (Bardhan, 1997). This will reduce its profitability and thus, all else equal, the overall volume of private investment. Alternatively, it may lead to the redirection of the investment to less productive projects (and/or the firm moving to the informal sector) in order to avoid paying a bribe, entailing a sub-optimal allocation of resources. In either case, the level of output, and probably its rate of growth, will be reduced. Apart from the direct bribe, corruption usually also entails additional costs in terms of delays and unnecessary procedures prescribed only to increase the capacity to extract bribes. The resulting increase in transaction costs has the same negative effect on investment as the direct bribe.

The effect of corruption on investment is one of the most frequently tested transmission channels. Examples of such empirical research include Mauro(1996), Dreher and Herzfeld(2005), Pellegrini and Gerlach(2004) and others. The majority of these studies find a statistically significant negative effect of corruption (however measured) on investment, although quantitative results can differ significantly. A study by Campos, Lien, and Pradhan(1999) finds that the size of the effect also depends on the predictability of corruption, i.e. whether corruption is centralized or decentralized, with the latter usually being more predictable than the former.

Part of overall business investment is foreign direct investment (FDI). The effect of corruption on FDI has been studied extensively, because in practice such investment tends to be

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[6] Apart from the references quoted directly in the text, the results presented are also drawn from the following survey articles: Bardhan(1997), Aidt(2003), Dreher and Herzfeld(2005), and Ugur and Dasgupta(2011).

subject to more intense government scrutiny than domestic investment, thereby increasing the potential for corrupt practices. The World Banks's work with Russia on its customs service provides an interesting illustration of this problem.

Russia - Reforms in the Russian Customs Service: 2003-2008 [7]

Initial situation: The Russian Federal Customs service is one of the largest Russian government agencies, with over 60,000 staff in 11 time zones. The business community has consistently perceived the Russian custom service as one of the major obstacles to trade facilitation. In Transparency Internationals Corruption Perception Index for 2006, businesses cited rent seeking by customs officials as one of the most serious problems affecting their operations in Russia. In an effort to integrate with the world economy and increase the prospects of economic growth, the Russian government launched the *Federal Targeted Program of Development of the Customs Service of the Russian Federation for 2001-2003,* in 2000. This program became the basis for the World Bank strategy to modernize the Russian Custom Service, approved in 2003.

The reform: The effort to reduce corruption was an essential part of the large-scale reform project focusing on modernizing the Federal Customs Service. There was a general agreement that change would not be possible, without improving the integrity and professional skills of customs officers, as well as substantially reducing opportunities for rent seeking by both officers and traders. The Anti-corruption strategy included the following core activities (i) Harmonization and simplification of the regulatory framework, including a new customs code simplifying the custom regulation and customs procedures. (ii) Simple and transparent procedures including the introduction of risk-based verifications to reduce the number of physical inspections and thereby reducing the opportunities for rent-seeking. (iii) Automation of processes; discretion was to be reduced by improving and insuring data exchange and cross-checks, which was made available by the introduction of new technology. (iv) Strengthening and professionalizing customs administration by reforming human resource policies, the organizational restructuring and improving the management systems. A new code of ethics was introduced and had to be signed by every customs official, who also received ethics training. In addition, external feedback mechanisms were reinforced and a personnel inspection unit and an independent appeals mechanism were established.

Outcome: The reforms have shown positive results in several areas, the percentage of import declarations selected for physical inspection has been reduced by 78 percent, export declarations selected for inspection have been reduced by 89 percent, and the average clearance times for vehicle inspections have declined 63 percent. The Business Environment and Enterprise Performance Survey (BEEPS) showed a 45% reduction in bribe frequency from 2005-2008—the percentage of Russian firms stating that informal payments were frequent when dealing with customs decreased from 11% in 2005 to 6% in 2008. The BEEPS results complement the results of the internal stakeholder survey which also revealed fewer negative experiences, such as having to make additional payments to customs officials. However, despite major progress in critical areas, global rankings such as the World Economic Forum's Enabling Trade Index and the World Bank's Logistics Performance Index suggest there is still significant room for further improvement in customs administration.

Sources:
World Bank (2011), *"Trends in Corruption and Regulatory Burden in Eastern Europe and Central Asia"*
World Bank (2011), *"Russian Federation Customs Development Project: Measurable Progress"*

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[7] This information has been compiled by the World Bank.

By reducing its profitability, corruption tends to reduce the volume of FDI; at the limit to zero, if foreign investors avoid corrupt countries altogether (Javorcik and Wei, 2009). Empirical analysis shows that investors from countries that implemented foreign bribery rules in coordination with multiple countries (Parties to the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions) reduced their investments in corruption countries[8]. Effects on FDI warrant special attention because FDI can play an important role in the **transfer of technology**: foreign investors often bring with them advanced technologies and management know-how, thereby accelerating the diffusion of technology and thus raising the rate of technical progress and output growth in the recipient country (UNCTAD, 2011). This process is hindered where corruption reduces the inflow of FDI. However, it has also been observed that FDI may be a major cause of corruption, especially in resource-rich poor countries, if international investors try to gain access to deposits of natural resources (e.g. minerals, forests, and agricultural land) by paying bribes to government officials controlling the access (Leite and Weidmann,1999; Pinto and Zhu,2013). Where such corruption is successful in circumventing government restrictions designed to protect the environment, it may entail the contradictory effects of raising the country's GDP, but lowering its overall welfare by damaging the environment and public health.

Several empirical studies discern a negative effect of corruption on FDI: Smarzynska and Wei (2000), Javorcik and Wei (2009), and Voyer and Beamish (2004). However, Al-Sadig(2009), in a critical survey of previous empirical studies, considers these results contestable on methodological grounds, and thus inconclusive. He summarizes his own empirical findings as follows: "The cross-sectional regressions are consistent with the argument that corruption deters foreign investors. However, as we move to panel data methods, the negative impacts of corruption disappear once we control for the host country's institutional quality". This is another indication of the close interrelationship between the impact of corruption and the institutional framework within which an economy operates. These findings lend further support to creating policies that focus on the quality and transparency of institutions as a means to effectively combat corruption.

Competition and Entrepreneurship

In many cases corruption can damage effective competition, for example by weakening regulation and antitrust enforcement intended to correct market imperfections or by creating barriers to new entry or other restrictions on competition to preserve the privileges of established firms (OECD, 2010). This matters because effective competition has been recognized as a powerful driver of productivity growth and innovation (Nickell, 1996; OECD, 2004, Aghion *et al*., 2005). Without the spur of competition, firms have fewer incentives to increase efficiency and are less prone to innovate. By undermining competition through bribery and/or patronage, a firm directs its efforts towards rent-seeking rather than towards outperforming competing firms by meeting customers' needs. Such rent-seeking will cause entrepreneurial talent and other resources to be diverted from genuine value creation ("productive" entrepreneurship) and management quality to fall (Van Reenen, 2011). Corruption can also harm competition directly, when the

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[8] Cuervo-Cazurra, *The Effectiveness of Laws against Bribery Abroad*, Journal of Int'l Business Studies, 2007

government *is* the customer, by excluding potential competitors, or enabling bidders to avoid competition by rigging bids, in public procurement (OECD, 2010b).

The corrosive effects of corruption for effective competition seem obvious, and Emerson (2006) presents empirical evidence that corruption actually reduces competition. Because of the complexities of consistently measuring competition, it is difficult to estimate the loss of output and/or growth via this channel with precision (see Ahn, 2002). However, the adverse effects of corruption on output via this transmission mechanism will be captured (together with other effects) in the aggregate equations gauging the effects of corruption on output, to be discussed below (cf. Part III). Causality also runs in the opposite direction: A lack of competition creates rents, and often government decisions will determine which firms get them, increasing the scope for corruption (Ades and Di Tella, 1999). In a competitive market, in contrast, firms can only succeed by pleasing customers, so officials' decisions are irrelevant. This is consistent with the observation that corruption tends to be less the more open an economy is to foreign competition.

The corruption-competition relationship is closely related to the effect of corruption on an economy's openness to trade and investment, since the later has major implications for the prevalence of effective competition. Several empirical studies find a significant (inverse) statistical relationship between economic openness and the level of perceived corruption. Most of these studies assume causality to run from administrative restrictions curtailing openness (by creating rents and increasing bureaucrats' discretionary power) to higher levels of corruption, in line with the seminal paper by Krueger (1974). However, it is also possible that politicians and bureaucrats introduce barriers to openness in order to increase their capacity to extract rents, implying reverse causality.[9] Or the relationship may change gradually over time: the introduction of temporary trade restrictions motivated by (valid) infant industry strategies may lead to rent extraction by officials administrating the system, who then resist eliminating these restrictions even if the underlying rationale has disappeared. In all of these cases, the quality of public sector governance can be expected to moderate the strength of the corruption/openness relationship, no matter which way causality runs (Soudis, 2009). As these studies suggest, anticorruption policies should be based on strengthening the quality and accountability of public institutions.

Entrepreneurship is the main driver of economic efficiency and innovation. It has been noted that innovation is disproportionally affected by corruption as start-ups are subject to more regulation than established business. Reduced profitability of investment, increased transaction costs, and increased uncertainty all combine to make entrepreneurship less attractive by reducing its overall rewards. This is likely to reduce the number of people opting for this career path, as well as their eagerness to accumulate the requisite **human capital** to exercise it competently. Some of the potential entrepreneurs may opt for a career in law and/or politics if the expected returns from corruption exceed those of business careers (Murphy et al., 1991). The result is a smaller and less educated entrepreneurial class. The ensuing negative effect on output and growth is reinforced by the need to apply what entrepreneurial talent there is in part to rent-seeking rather than improving productive capacity, especially if widespread patronage characterizes the private-public sector relationship. Using a unique dataset on entrepreneurship collected from LinkedIn, Avnimelech and Zelekha (2011) find strong supportive evidence that corruption has a significant

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[9] This view is prevalent in the analysis of the relationship between corruption and FDI, cf. Wei (1997).

negative impact on ("productive") entrepreneurship, and thus, by implication, on economic growth.[10]

Public governance

Last but not least, an important channel through which corruption affects economic performance is by impacting on both the volume and the composition of government expenditures and revenues. As in the cases of various other transmission mechanisms, the causality between taxation and corruption runs in both directions: Collusion between public officials in the tax collection agency and tax payers reduces the amount of taxes collected, making it more difficult for the state to finance its assigned activities, and compromises the objective of fairness embodied in the tax code. On the other hand, the design of the tax system and the way it is implemented (including tax collection procedures) affect the ability of public officials and taxpayers to engage in corruption. The results of Mexico's efforts to reform their tax authority provide a good illustration.

Mexico – Reforms of the Tax Authority (late 80's and beyond) [11]

Initial situation: In the 1980s, Mexico's Tax Administration Service, known by the acronym SAT, faced numerous challenges. First and foremost, SAT lacked an information management system to keep track of taxpayers and government employees. Second, with 300 tax offices sprinkled across the country, it took months for SAT to receive and process tax returns. Furthermore, taxpayers struggled to decipher which of Mexico's 60 tax forms to submit. Once submitted, each tax form had to clear 14 desks at SAT. Tax evasion was rampant, and SAT staff members lacked proper training in conducting audits and enforcing payments. SAT officers were also known to sell tax forms that were supposed to be free and engage in other forms of corruption.

The reforms: Reforms in the late 1980s and early 1990s helped modernize SAT and improve services by introducing a new information management system, computerizing records, simplifying forms, building staff capacity, identifying and minimizing corruption, and engaging private companies to help meet SAT's goals. In the mid-1990s SAT created an online program for tax services, known as "e-SAT". These early reforms lay the foundation for the renewed effort to combat corruption in the beginning of the 00's. The Anti-corruption strategy consisted of three main efforts; (i) the establishment of a system to anonymously denounce likely acts of corruption using phone, email or paper communication. (ii) continuous monitoring of the internal transparency and service indexes using surveys, and (iii) evaluating staff reliability and reviewing the employment practices – with a focus on the removal and rotation of staff – for those in high-risk positions. These three efforts were complimented by public disclosure of tax officials' income and assets, media campaigns, the establishment and dissemination of institutional values and cooperation.

Outcome: Although some of SAT's progress has backslid over time, the early reforms brought about major changes in Mexico's tax collection administration and broke the cycle of corruption and weak institutional practices. The more recent Anti-Corruption efforts have resulted in 4,056 denunciations that resulted in the removal of 1,567 public officers between

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[10] The OECD project on knowledge based capital (KBC) provides ample evidence on how growth is curtailed by barriers to entrepreneurship and innovation (OECD, 2012).
[11] This information has been compiled by the World Bank.

2003-2008. Moreover, the perception of corruption of SAT members has declined with 55% from 2002 to 2008. However, corruption still persists; the majority of SAT's personnel hold a position susceptible to corruption, especially those working at customs.

Sources:
U4 Anti-Corruption recourse centre, "*U4 Expert Answer: Corruption in Tax Administration*"
Kaufmann (2008), *"Mexico creates model for tackling corruption in tax administration"* http://blogs.worldbank.org/governance/mexico-creates-model-for-tackling-corruption-in-tax-administration

Given this interdependence, there is ample empirical evidence that corruption tends to lower tax efficiency, i.e. the ratio of effective to potential tax collection (subject to existing tax legislation and incomes).[12] Tanzi and Davoodi (2000) document a significant decline in both direct and indirect tax revenues as corruption increases. An indirect channel through which corruption may reduce tax efficiency is by boosting the size of the informal business sector, as entrepreneurs try to avoid dealing with corrupt officials (Dreher and Herzfeld, 2005). However, how reduced tax receipts due to corruption affect output and growth cannot be evaluated without analysing the efficiency of the taxation system and the use to which tax revenues are put by the government.

On the expenditure side, corruption in the form of bribery (often combined with theft) tends to increase the cost of goods and services bought by the government, reducing the volume available for government use. It often impacts negatively also on the quality of purchased items. In addition, it may affect the composition of public expenditure as corrupt bureaucrats and politicians conspire to channel public expenditures to those areas where bribery and theft are easier to conceal. Tanzi and Davoodi (2000) report that corruption actually tends to increase the amount of public investment, while lowering its quality as well as expenditure on repair and maintenance.

Brazil[13] *- Improving service delivery and increasing transparency in the state of Bahia* [14]

Initial situation: In the mid-1990s, shortcomings in Brazil's service delivery systems were particularly acute in Bahia State, the country's poorest. The State's vast size—417 municipalities with 13 million people spread over 350,623 square miles—made providing coverage particularly difficult. In 1995, the Bahia State Government embarked on an ambitious reform program including ambitious efforts to increase transparency to transform the quality and efficiency of service delivery.

The reforms: One of the main obstacles for efficient service delivery in Bahia was the fragmentation of services and the vast number of government agencies. To solve these problems major efforts to consolidate key agency functions into single service centers (SAC) and improve transparency and efficiency was undertaken. The 'One-Stop-Shop' concept allowed a citizen to

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[12] Low tax efficiency does not necessarily mean corruption: unilateral fraud by tax payers ("tax evasion") will have the same result. The latter is increasingly recognized as a major challenge also in developed countries, closely linked to the problem of money laundering discussed in section IV-ii below.
[13] For a comprehensive assessment of Brazil's public sector integrity reform agenda. see *OECD Integrity Review of Brazil: Managing Risks For A Cleaner Public Service*, OECD (2011)
[14] This information has been compiled by the World Bank.

complete a number of transactions in a single visit. The "SAC" reform was based on the following key components: (i) simplification of administrative procedures for both citizens and civil servants, (ii) collaboration among administrative units involved, (iii) development of computerized information systems in all administrative units, (iv) availability of trained human resources, (v) a well-developed network of computer equipment, (vi) specific allocation of duties and responsibilities among all functional components aimed at reducing overlapping and increasing synergies.

As part of the modernization initiatives, the State of Bahia also implemented and launched a web site to improve the interaction between the government and its citizens, the private sector, and other government agencies. The site, administered by the State of Bahia's Secretary of Administration, seeks to increase the transparency of the public administration. The site provides a wide range of services, in the areas of government matters (public finance, government indicators), citizen assistance (health, education, judicial and legal matters, security, labor, social welfare), and private-sector business (notary offices, public bidding documents, small business). As part of this electronic initiative, the government has also implemented an e-procurement online service with the purpose of disclosing on a real-time basis all governmental purchases to suppliers, customers and citizens regarding all steps of the procurement process. The site discloses all electronic purchases, biddings documentation, list of suppliers, and price updates.

Outcome: The SAC concept has enjoyed major success in terms of improving service delivery. It has been replicated in states throughout Brazil and other countries such as Cape Verde, Trinidad and Tobago, Morocco, and Honduras, have sought to learn from this model. In 2004, the Bahia State Government received a UN Public Service Award in recognition of the improvements to service delivery.

Other studies (Mauro, 1998; Gupta et al., 2000) find that corruption negatively affects the share of public spending on education and health, while increasing the share of military spending. The net effect of all these mechanisms is to entail a sub-optimal performance of the public sector both on the revenue and on the expenditure side. This not only affects the overall efficiency of the economy directly, but may also impact on people's perception of government performance and their willingness to cooperate, making it more difficult for a government to assume its proper function in regulating the economy and supplying public goods.

ii. Effects on other relevant development characteristics

The primary focus of this paper is on the effects of corruption on output levels and growth as conventionally measured by GDP. However, it is important to note that corruption can also have significant effects on economic development more generally defined, by negatively impacting on welfare determinants not included in the measurement of GDP, like sustainable development, personal health and safety status, equity (income distribution), and various types of social or civic capital ("trust"). For example Dreher and Herzfeld (2005) report that corruption is correlated with lower **life expectancy** and **school enrolment**, two variables used in the construction of the Human Development Indicator in addition to income per capita.

Apart from prolonging poverty by reducing the rate of output growth, corruption tends to increase **income inequality** by deficient targeting of social programs, lower social spending and unequal access to education (Gupta et al., 1998). It has been observed that bribes extorted from the poor tend to be a larger percentage of their incomes due to the higher frequency with which they confront corrupt officials as well as the higher level of bribes charged (for an example see Recanatini, 2013). In addition, poorer people tend to have less possibilities to avoid the burden imposed by corruption, e.g. by switching from public to private provision of education and health services, where the availability and/or quality of the former is reduced by corruption. Similarly, corruption in tax collection tends to favour well-off individuals more than low-income earners. And grand-scale theft of government assets rarely favours the poor segment of society.

Part of government regulation is aimed at protecting the **environment**, threatened by negative externalities from economic activity ("pollution"). Similarly, market imperfections in the form of imperfect information require various forms of government **health and safety** regulations. Where enforcement of such regulations is subverted by corruption, it may actually lead to increased output (as measured by GDP), but will reduce the **quality of life** (welfare) of the population, which includes more than the level of material wellbeing, importantly including the quality of the environment and personal health status, among other factors. Aidt(2009) extends his research of the output effect of corruption to the impact on **sustainable growth** and finds that the conclusions on the negative impact of corruption are considerably strengthened as corruption (however measured) is more closely (negatively) correlated with "genuine investment"[15] than with gross capital formation as defined in the National Accounts. Conversely, he finds that when including relevant aspects of sustainable growth (like resource depletion, pollution, and human capital formation) in the impact analysis of corruption, the empirical evidence ceases to provide significant support for the « grease » hypothesis.

Some studies find that the effect of corruption on the environment and health and safety status is indirect: systemic corruption induces entrepreneurs to avoid it by operating in the informal sector of the economy. This facilitates the avoidance of government regulations in force, including those aimed at safeguarding the environment (Biswas et al., 2011). What causes the observed correlation between corruption and the size of the informal sector is, however, unlikely to be straightforward. It may be due to the existence of excessive and/or inappropriate regulation and other structural deficiencies like inefficient tax structures (Andrews et al., 2011). Firms can respond to these impediments by either getting around them by paying bribes, or by leaving the formal sector. Thus, attempts at curtailing corruption by increasing sanctions may well lead to more firms deciding to move into the informal sector if the underlying structural distortions remain in place.

Corruption involves unlawful behaviour of both the government officials and the private agents involved. If this goes unpunished, it undermines the public's notion of "rule of law", which is a key element of public sector governance, the importance of which for economic performance has been established in both theoretical and empirical research (cf. North(1990) for the theory and Barro(1991) for the empirical research). The important point here is that the perceptions of

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[15] Aidt's definition of sustainable growth requires that "genuine" investment be positive, where genuine investment is defined as gross fixed investment adjusted for consumption of fixed capital (-), depletion of mineral and energy deposits (-), damage from CO_2 emissions (-), forest depletion (-) and educational expenditures (+).

widespread corruption and weak rule of law diminish society's amount of social or civil capital **("trust"),** which impacts negatively on both the overall economic performance and the general wellbeing and quality of life ("happiness"). In severe cases this may put in question the legitimacy of the state and jeopardize political and macro-economic stability. A recent report, using results from the 2011 Gallup World Poll for a cross section of 31 OECD countries, finds a strong negative correlation (coefficient= -0,84) between the public's perception of the prevalence of corruption and confidence in national governments (OECD,2013a).

III.   A selective review of empirical studies

Most empirical studies on the relationship between corruption and output investigate the impact of some aggregate measure of corruption on the level and/or growth rate of output, without distinguishing between different categories of corruption or different transmission mechanisms. Given the *a priori* ambiguity of this effect, it is not surprising that the findings of available studies differ widely. We report first the results of recent surveys of empirical research (Meta-analyses). This is followed by the presentation of selected individual studies the results of which are of particular interest in the current context. The studies referred to in this review are summarized in Table 1.

Table 1: Selected empirical studies

Summary of selected empirical studies

study	type of analysis	results
A. Meta-Analyses		
Campos et al. (2010)	A review of a total of 460 estimates from 41 different studies. The results are compared and the reasons for different results are analyzed.	32% of the estimates reviewed indicate a significant and negative impact of corruption on growth, 62% suggest a statistically insignificant relationship, while approximately 6% provide support for a positive and significant relation.
Ugur and Dasgupta (2011)	A systematic review of 115 studies, comprising 39 studies of a theoretical/analytical nature and 84 empirical investigations. The theoretical literature is used to built a synthetic narrative of the corruption-growth relationship. Meta-analysis is applied to evaluate the empirical studies and map their results into a synthetic quantitative estimate of the effect of corruption on growth. The focus of the study is on low income countries, although other countries are included as well.	The total impact of corruption on per capita GDP growth in Low Income Countries (Worldbank definition) is -0.59, i.e. a one-unit increase in the perceived corruption index is associated with a 0.59 percentage-point decrease in the growth rate of per capita income. Most of this impact operates through negative effects of corruption on the operation of the public sector, including the levels and composition of both taxes and expenditures and government effectiveness in general. Including all countries, the corresponding overall impact of corruption on the per capita GDP growth rate is a decrease of 0.91 percentage points.
B. Individual studies		
Mo (2001)	Using cross section analysis, this study estimates the overall effect of corruption on the growth rate of GDP. It also decomposes this overall effect into the contributions of various transmission channels, including political instability, human capital formation, and fixed investment.	A one unit increase in corruption (measured on a 0 to 10 scale) reduces the average annual growth rate of GDP by 0.55 percentage points. The most important channel through which corruption affects economic growth is political instability, which accounts for 52 % of the overall decline in the growth rate. Negative effects on human capital formation and private investment contribute 15 and 21 percent to the overall reduction in growth respectively.
Pellegrini and Gerlagh (2004)	Using cross section analysis, this study estimates the direct and indirect effects of corruption on economic growth. The indirect transmission channels analyzed include fixed investment, trade policy, schooling, and political stability	The overall effect of corruption on per capita output growth is a 0,38 percentage point reduction in the average annual growth rate. The contributions of the transmission mechanisms identified are: fixed investment (32%), openness (28%), political (in)stability (16%), and schooling (5%)
Aidt et al. (2008)	The authors test the hypothesis that the relationship between corruption and growth depends on the institutional environment characterizing the economy, i.e. that it is "regime dependent". They use a threshold model to estimate the impact of corruption on growth, using cross section data for 75 countries.	The effect of corruption is "regime dependent": it has a large and statistically significant negative effect on per capita GDP growth in countries with high quality public sector governance regimes. In countries with low quality governance regimes the effect of corruption on growth is not statistically significant.

i.   Meta-analyses

Campos et al. (2010) have investigated a total of 460 empirical estimates of the effect of corruption on growth from 41 different studies. They report the following results: about 32% of the estimates reviewed indicate a significant and negative impact of corruption on growth, 62% suggest a statistically insignificant relationship, while approximately 6% provide support for a positive and significant relation. The authors summarize the main lessons from their research as follows: cross-country macro-econometric evidence provides rather limited support to the view that corruption greases the wheels of growth, with trade openness and institutional quality appearing to be crucial factors in mediating the effects of corruption on growth. They also

critically remark that many of the estimates exclude indicators of institutional quality as an explanatory variable, which in the light of recent research they consider a major shortcoming: given the strong correlation between indicators of corruption and other public sector governance variables (e.g. "government effectiveness" and "rule of law"), the corruption indicator is likely to capture some of the impact of other institutional characteristics on growth.

Ugur and Dasgupta (2011), after screening a total of 1002 studies, include 115 of these in their scrutiny. They first provide a narrative synthesis of the theoretical/analytical literature regarding the channels through which corruption may affect growth. They then summarise the statistical evidence contained in some 53 empirical studies, comprising 596 estimates. Finally, using the empirical evidence from these studies, they construct synthetic estimates for the overall effect of corruption on per capita GDP growth for different country groupings.
Separate quantitative estimates are provided for low-income countries, and for a larger sample including higher income countries as well. The authors find that corruption has a negative effect on growth in both groups. They estimate the overall effect of corruption in low-income countries to amount to a 0.59 percentage-point decrease in the growth rate of per capita GDP for each unit increase in the perceived corruption index. Their corresponding estimate for the complete sample is a decline in per capita GDP growth by 0.91 percentage points per unit increase in the perceived corruption index. When decomposing the overall effect into different transmission channels, they report a positive effect of corruption on overall fixed investment, which contrast with the results of most other studies.

Based on their narrative synthesis of the theoretical/analytical studies reviewed, the authors further conclude that economic gains from reducing corruption in low-income countries can be increased if anticorruption interventions are combined with a wider set of policies aimed at improving institutional quality and providing correct incentives for investment in human capital. The review also indicates that while levels of corruption in low income countries may be higher than in middle and high income countries, the latter on average stand to gain larger increases in output (both in absolute and relative terms)[16] from reducing the incidence of corruption. Synthetic estimates for the decomposition of the overall effect into several transmission mechanisms are also presented and will be discussed below.

ii. Results of selected individual studies

Among the large number of empirical studies which test the relationship between corruption and growth, only a few attempt to decompose the overall effect into contributions from different transmission mechanisms. None of the studies presenting such a decomposition include all the transition channels identified in Section 2.1.1 above, but they all contain a "direct" effect of corruption on growth as well, which can be interpreted as a residual not assigned to any particular transmission channel. The results of the pertinent studies are summarized in Table 2. All studies report a negative overall effect of corruption on output growth, but otherwise the results differ

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[16] This is because high-income countries usually have higher quality governance, and the higher the quality of governance the more damaging its subversion by a given level of corruption. However, it may also be true that reducing corruption by a given amount from an already low level may be considerably more costly than an identical reduction from a high level of corruption (i.e. there may be increasing marginal cost to fighting corruption)

substantially, both with respect to the size of the overall effect and regarding the importance of alternative transmission channels. The first two studies are based on cross-section estimates, while the third study synthesizes its estimates by combining the results of various independent studies.[17]

Table 2: Effect of corruption on output growth: Alternative transmission mechanisms

Effect of corruption on output growth: Alternative transmission mechanisms

STUDY	total effect on annual growth rate of real GDP pc (a) (percentage points)	alternative transmission mechanisms : contribution to total effect (percent)						
		total effect	"direct" effect	indirect transmission channels				
				investment	public finance	political stability	human capital	openness
Mo (2001) [Table 6]	-0.55(b)	100	12	21	na	52	15	na
Pellegrini and Gerlagh (2004) [Table 4]	-0.38	100	19	32	na	16	5	28
Ugur and Dasgupta (2011) [Table 4.8] low income countries only all countries	-0,59 -0,91	100 100	12 14	(c) -5	39 79	na na	49 12	na na

(a) per unit increase in measure of corruption
(b)growth rate of real GDP, total
(c) negative, but does not satisfy the precision-effect test (PET)

One of the reasons repeatedly evoked in empirical studies to explain the large differences in results is that both the incidence and the impact of corruption depend on the institutional environment prevailing in a given country, as represented by other public governance indicators. Variables representing this feature of an economy tend to be correlated with the corruption indicator, so when these variables are excluded from estimation equations, the corruption indicator will pick up some of the effects of these variables as well. This interpretation is corroborated by the finding that inclusion of other public governance indicators (like "rule of law", "voice and accountability, "political stability") in estimation equations testing the effect of corruption often changes both the size and the statistical significance of the estimated coefficients.

Aidt at al. (2008) model this interdependence explicitly and test the resulting model empirically. Their model allows for threshold effects distinguishing between high and low quality governance "regimes", defined by the quality of their governance institutions. The quality of the governance regime is proxied by the "Voice and Accountability"(V&A) indicator from the World Bank's WGI data bank, which tends to be highly correlated with other indicators of governance quality. They then test the model by estimating the impact of corruption on growth, treating both corruption and growth as endogenous variables in a framework that allows for threshold effects. The empirical results reveal two governance scenarios: In the regime with high quality political institutions, corruption has a significant negative effect on growth; while in the regime with low quality institutions, the estimated corruption coefficient is not statistically significant.[18] The

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[17] The dependent variable is real GDP growth in the Mo(2001) study and real GDP per capita growth in the other two studies.
[18] The threshold value of the V&A indicator separating the high from the low quality institution regime is V&A ≈ 6 (when measured on a 0 to 10 scale).

intuitive explanation for this result is that the better the quality of public sector governance, the more its subversion by corruption will hurt economically. In the other extreme, bypassing a completely dysfunctional governance regime via corruption will not hurt economic performance, and may even improve it (the essence of the "grease" argument). For illustrative purposes Figure 7 shows the V&A indicator for the G20 nations and the regime threshold as identified in the Aidt et al. study.

Figure 7: G20: V&A indicator and Regime threshold

Source: Worldbank, WGI data bank
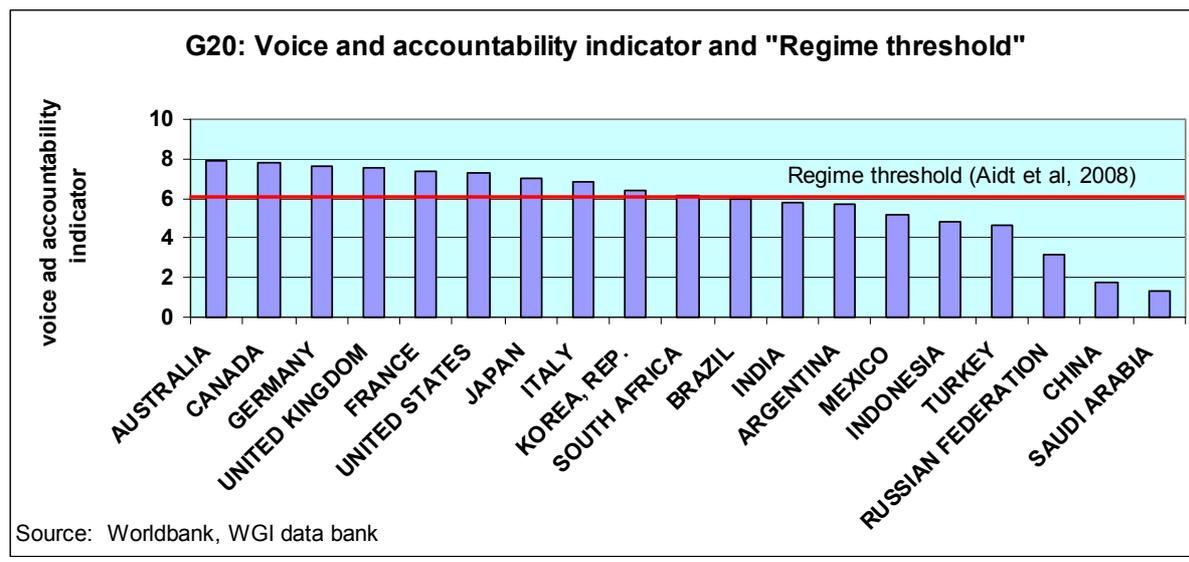
IV.   Global anticorruption policy efforts

The growing attention paid to public sector governance, including perceived corruption, has been largely motivated by the recognition of the potential damage corruption can exert on economic performance (cf. Box 1 above). This has led to increasing policy efforts in many countries to reduce corruption. And these efforts have been supported by international organizations who report regularly on the incidence of corruption, disseminate research identifying best practices in combating it, and in some cases, e.g. when corruption is linked to trans-border activities (like money laundering), participate actively in designing pertinent anticorruption policies.

i.   Anticorruption campaigns

Unlike the large volume of studies analysing the transmission mechanisms and the overall impact of corruption on economic performance, there are few studies that try to measure the effects of anticorruption policies on economic outcomes. This is due to a number of difficulties

such research needs to overcome. One of them is how to define an anticorruption policy. Does it refer to strengthening control mechanisms, including increased sanctions for corrupt activities, while leaving the prevailing institutional environment unchanged, or does it refer to changes in the conditions that lead to corruption? The latter type of policies (e.g. regulatory reforms) is often implemented for other reasons than to combat corruption, but may nevertheless have a major impact on it.

Box 6

Examples of Anticorruption campaigns

Singapore: In 2011 Singapore had the 9th highest control of corruption ranking among 212 countries (96 percentile), and the indicator changed little over the observation period. The origins of the country's persistently superior performance in corruption control can be traced to the radical reforms designed and implemented by the People's Action Party (PAP) during the period 1959/60, which transformed the country from one plagued by corruption to one of the "cleanest" in the world. The key characteristics of these reforms included: (a) Unconditional support from the top political leadership, which indeed initiated the process; (b) Transparent legal codifications of what constitutes corruption and associated sanctions; (c) Thorough implementation of the legislation and application of sanctions; (d) Strict adherence to meritocracy in the appointment and financial compensation of civil servants. It should be noted that the anticorruption reforms were accompanied by similar drastic improvements in other areas of public sector governance

Italy: Italy ranked 91st in 2011 in the global control of corruption ranking (57 percentile), and its indicator deteriorated steadily following an improvement between the years 1996 and 2000. While the anticorruption campaign in the 1990s showed that progress is possible, its ultimate failure to bring Italy up to average OECD performance has been due to lack of support, if not outright obstruction, by segments of the country's political leadership. This failure is also reflected in the mediocre performance regarding other public sector governance indicators (regulatory quality, rule of law, government effectiveness) which are important complements to the control of corruption. Against this background, and given mounting economic difficulties linked to the on-going euro crisis, the Italian parliament approved Law 190 in November 2012, which contains provisions for the prevention and prosecution of corruption in the public administration (cf. OECD (2013c) for details). The focus and scope of the new legislation has generally been evaluated positively. The success of this initiative will crucially depend on full and rigorous implementation both at the national and sub-national level. Implementation at the local level is of particular importance, but may also prove the most difficult part, as it will have to overcome long-established traditions in some parts of the country, and may encounter stiff opposition from current beneficiaries of the status quo.

Zambia: Although a Zambian anticorruption commission was established as early as 1980, both petty and grand corruption remains a major problem in the country, which in 2011 ranked 134th in the control of corruption league (percentile rank: 37). Zambia's anticorruption efforts have received substantial support from various bilateral and multilateral international aid organizations. While instrumental in strengthening the capacity of key anticorruption institutions, these efforts have yet to translate into increased domestic accountability and behavioural changes (NORAD, 2011). A major corruption scandal in the country's Ministry of Health in 2009, linked to donor money, has shaken major donors' confidence in the country's

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financial reporting and control systems, and led to the suspension of aid by major donors. Partly in response to this scandal, the current president Michael Chilufya Sata, elected in 2011, has made the fight against corruption a major plank of his policy program, in contrast to his predecessor's ambivalent commitment. While this has led to various legislative and administrative initiatives (e.g. a new Anticorruption Commission Act in 2012), it is too early to tell whether these will be more successful than similar earlier initiatives.

The results of anticorruption policy efforts around the world have been mixed, both due to differences in efforts made to reduce corruption and to differences in the effectiveness of doing so. Both the World Bank and Transparency International maintain rich data inventories of past and on-going country efforts to combat corruption. Table 3 juxtaposes changes in the control of corruption indicator (CC) and average per capita GDP growth rates over the period 1996 to 2011. It presents the countries with the largest changes (both improvements and deteriorations) observed in the CC indicator (rescaled to range from 0 (high) to 10 (low) corruption perceptions) among 184 countries/territories for which the data are available.[19] All the changes listed in this table are statistically significant in the sense that the size of the observed change in the CC indicator exceeds its estimated standard deviation at least three times. Most of the countries that have experienced large improvements in their corruption indicators have undergone significant political upheavals in the recent past and have subsequently embarked on major comprehensive reforms of their entire public sector governance systems.

For comparison Table 4 presents changes in the same indicators for G20 countries, adding the period 2008 to 2011. Changes are less drastic for this group, but again show both deteriorations and improvements. The largest improvements in the CC indicator over the 1996 to 2011 period were recorded for Japan, Saudi Arabia, and Turkey, while the largest deteriorations occurred in South Africa and the United Kingdom. Only the latter two changes are statistically significant in the sense of exceeding three times the standard deviation of the CC estimate.

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[19] The over-time changes in the control of corruption indicator should be interpreted with caution: The standard deviations of the estimated indicators are such that small changes over time are note statistically significant. In addition, some of the changes recorded are due to modifications in the underlying survey material being used to construct the indices. This can account for as much as half of the over-time variation (Kaufmann and Kraay, 2002).

Table 3: Changes in corruption indicator and GDP pc

Changes in corruption indicators and GDPpc by country 1996 to 2011
corruption measured on a scale from 0 [highest] to 10 [lowest]
change in output measured as average annual growth rate of GDPpc

A. Countries with largest improvement				B. Countries with largest deterioration			
rank*	country	change in		rank*	country	change in	
		corruption	output			corruption	output
1	RWANDA	2.76	3.9	180	CÔTE D'IVOIRE	-2.61	-1.9
2	GEORGIA	2.74	4.9	179	TRINIDAD AND TOBAGO	-2.56	4.7
3	LIBERIA	2.59	-0.1	178	MALDIVES	-2.14	5.0
4	UNITED ARAB EMIRATES	2.34	2.7	177	ZIMBABWE	-2.11	-4.1
5	CAPE VERDE**	2.24	1.6	176	ERITREA	-1.99	-2.5
6	QATAR	2.22	5.3	175	TURKMENISTAN	-1.97	9.3
7	LATVIA	2.05	6.1	174	FIJI	-1.87	0.6
8	ESTONIA	1.94	4.9	173	CYPRUS	-1.69	1.5
9	MACEDONIA, FYR	1.89	1.8	172	YEMEN, REP.	-1.66	0.9
10	CROATIA	1.69	-1.9	171	ISRAEL	-1.59	1.6
11	SERBIA	1.65	2.5	170	PAPUA NEW GUINEA	-1.54	0.5
12	LESOTHO	1.39	4.4	169	SOUTH AFRICA	-1.45	1.9
13	CONGO, DEM. REP.	1.37	4.4	168	GUINEA	-1.42	0.9
14	EL SALVADOR	1.35	2.5	167	DOMINICAN REPUBLIC	-1.39	3.9
15	BULGARIA	1.21	0.2	166	KYRGYZ REPUBLIC	-1.31	3.3
Average		2.0	2.9			-1.8	1.7

*in order of size of change in corruption **change from 1998 to 2011
source: World Bank (2013), WGI indicators (measured on scale 0 to 10)

Table 4: G20 – Changes in corruption and GDP pc

G20: Changes in corruption indicators and GDPpc by country
corruption measured on a scale from 0 [highest] to 10 [lowest]
change in output measured as average annual growth rate of real GDPpc

G20 country	change in		change in		memorandum:	
	corruption	output	corruption	output	control of corruption indicator	
	1996 to 2011		2008 to 2011		level est., 2011	stand. error
Argentina	-0.4	2.9	0.2	4.9	4.2	0.31
Australia	0.5	1.9	0.2	0.8	9.3	0.34
Brazil	0.5	1.9	0.4	2.5	5.3	0.31
Canada	-0.4	1.6	0.0	-0.3	9.0	0.36
China	-0.8	9.1	-0.3	9.1	3.7	0.30
France	0.5	1.1	0.3	-0.4	8.0	0.37
Germany	-0.6	1.4	-0.1	0.6	8.4	0.36
India	-0.3	5.3	-0.4	6.7	3.9	0.30
Indonesia	-0.2	2.3	-0.2	3.9	3.6	0.30
Italy	-0.7	0.3	-0.4	-1.7	5.0	0.36
Japan	0.9	0.5	0.4	-1.1	8.0	0.34
Korea	0.4	3.8	0.2	3.2	5.9	0.31
Mexico	0.2	1.6	-0.2	-0.1	4.3	0.31
Russia	-0.1	4.5	-0.1	-0.1	2.8	0.26
Saudi Arabia	0.7	0.4	-0.5	0.5	4.4	0.39
South Africa	-1.5	1.9	-0.2	0.4	5.1	0.29
Turkey	0.7	2.5	0.0	2.2	5.2	0.30
United Kingdom	-1.2	1.5	-0.3	-1.5	8.1	0.37
United States	-0.6	1.3	-0.3	-0.6	7.5	0.34

Note: changes in the control of corruption indicator exceeding 3 times the size of the standard error
     are highlighted in green
Source:
     average annual growth rate of real GDP per capita, percent: IMF
     change in corruption: Worldbank, WGI corruption indicator (measured on scale 0 to 10)

ii. International cooperation in International Organizations

The short overview provided in this Section does not claim to be exhaustive, but tries to give an indication of the international cooperation and experience in the fight against corruption. This cooperation allows individual countries deciding to confront their corruption problems to benefit from the experience of other countries. And such cooperation is essential in instances where corruption involves transnational activities. The overview does not cover all anticorruption activities pursued by the organisations mentioned, nor does it mention all organisations contributing to anticorruption activities on the international stage.[20] The overview seeks to present examples of the focal points of the major International Organizations in combating corruption and how these approaches positively support anticorruption reforms. It shows the value added of international cooperation fostered by International Organisations, which allows countries to assess progress and ascertains the impact of anticorruption policies. Indeed, through mandatory or voluntary peer reviews and in-country programmes, international institutions can play key roles by: a) establishing integrity standards that may be adopted by countries as a guidance to their reform strategies; (b) developing methodologies to help framing, monitoring and evaluating anti-corruption interventions; and (c) conducting assessments to provide feedback to countries on how they are doing in this area.

United Nations

The "United Nations Convention against Corruption" (UNCAC), adopted by the United Nations General Assembly in 2003, is the broadest manifestation of the international community's resolve to curtail corruption. It serves as a general guideline to anticorruption efforts, and covers a broad range of pertinent issues, including the prevention and criminalization of corruption, the importance of international cooperation, and the principle of stolen asset recovery. In pursuit of these and related issues, the Convention seeks to address both the internal and external effects of corruption that act to the detriment of a country's stability and investment climate. Prevention efforts focus on improved governance, while criminalization ensures that businesses can rely on the redress mechanisms laid out in each country's legislation. Similarly, asset recovery decreases the likelihood of plundering national wealth through corrupt practices, and effective recovery measures add to a country's reputation of visibly tackling corruption in the public and private sectors.[21] The UNCAC implementation review mechanism assists countries in identifying reforms required to meet their commitments in the fight against corruption.

OECD

Signatories of the Convention on Combating Bribery of Foreign Public Officials, so far adopted by 34 OECD Member- and 6 non-Member countries, commit to putting in place and

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[20] In particular, this overview does not cover the important and at times pioneering work done by international NGOs like Transparency International and the Extractive Resource Transparency Initiative, as well as a host of other NGOs.
[21] From "United Nations Convention against Corruption," accessed at
http://www.unodc.org/unodc/en/treaties/CAC/convention-highlights.html.

applying legislation that criminalises the act of bribing foreign public officials. The Convention's monitoring mechanism - based on peer review - not only ensures that countries maintain their efforts to enforce its standards, but also helps countries identify practical steps that should be taken to actively prosecute this form of corruption. Proper enforcement of the Convention supports countries in attracting cleaner foreign investment that is more likely to generate sustainable long-term growth and development. In ensuring transparency and openness in local businesses, countries are better able to join the supply chains of multinational corporations that are increasingly held accountable for adopting socially-responsible practices.

The OECD is also involved in a wide range of anticorruption efforts targeting public sector activities. This work puts at governments' disposal policy instruments, practical tools, best practices to provide guidance for preventing corruption and fostering integrity in the public sector. This ranges from standards of conduct for public officials, interaction between the public and the private sector (including public procurement, lobbying and conflict of interest related to revolving doors) to implementation and compliance mechanisms. The Public Sector Integrity reviews for specific countries help policy-makers adopt best practices and implement established principles and standards from both OECD and non-OECD member countries. These Reviews are based on a comprehensive analysis of the functioning of country's institutions, instruments and processes to promote a cleaner public sector, with special attention to "at risk" areas such as public procurement. The OECD also makes available its expertise and experience in these areas online through a Joint Learning Study (JLS), an innovative method for sharing knowledge on key policy issues between OECD and non-OECD countries.[22]

FATF

The Financial Action Task Force (FATF) is an inter-governmental policy-making body established by the G-7 Summit held in Paris in 1989. It was founded in response to mounting concern over money laundering. Since then, the financing of terrorist activities and the financing of the proliferation of weapons of mass destruction have become other key preoccupations. The mission of the FATF is to safeguard the integrity of the international financial system by setting standards and promoting effective implementation of legal, regulatory and operational measures for combating money laundering (ML), terrorist financing, the financing of proliferation, and other related threats. The founding members included the G7, the European Commission, and eight other countries. Since then, membership has grown to 34 jurisdictions and two regional entities. The FATF includes all but two members of the G20. However, these remaining two G20 countries are also part of the FATF's global network through their membership in FATF-style regional bodies (FSRBs). All members of the FATF and FSRBs have committed to implementing the FATF Recommendations, and undergoing assessments (peer reviews) for compliance with those standards.

The FATF combats corruption by making money laundering more difficult: it develops pertinent recommendations that are recognised as the international standard, it monitors the progress of its members in implementing recommended measures, reviews money laundering and

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[22] More information on the OECD Joint Learning Studies is accessible at:

terrorist financing techniques and counter-measures, and promotes the adoption and implementation of its recommendations globally. In 2012, the FATF strengthened its standards in key areas which have a clear nexus to anti-corruption efforts (for example, customer due diligence, transparency of beneficial ownership, and politically exposed persons). Limited implementation of FATF Recommendations continues to reduce their effectiveness.At the end of 2013, the FATF will begin assessing compliance with its new standards. The methodology that will be used in the assessment process will take into account corruption (along with other relevant risks, material circumstances, structural elements and other contextual factors). The assessment reports will be published, and will clearly reflect where corruption is negatively impacting the effectiveness of implementation of AML/CFT requirements. The entire global network will be assessed on this basis, as this methodology will be used by the FATF, FSRBs, the World Bank, and the IMF in conducting assessments of countries' compliance with the FATF standards.

The FATF's focus on the integrity of the financial system reinforces the objectives and benefits of other international instruments, including the UNCAC and the OECD Convention. The FATF seeks to ensure that the principles of transparency and anticorruption are successfully implemented throughout the international financial markets. In doing so, it promotes the development of a more stable financial system, increasingly attractive to cleaner, more sustainable international businesses. Its institutional focus helps ensure that key financial entities are not infiltrated or abused by terrorist groups or the organised crime, and limits the likelihood that a country becomes a haven for criminals. All of these factors contribute to the long-term sustainability and security of a country's financial climate, making it a sought-after destination for foreign direct investment.[23]

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IFIs (World Bank and IMF)

The World Bank and the International Monetary Fund (IMF) have reacted – and contributed - to the mounting evidence and recognition that corruption is a major impediment to sustainable growth and a threat to international financial stability. Both organizations support the Extractive Industries Transparency Initiative (EITI; see http://eiti.org **for details**), an international NGO established in 2003, aiming to increase transparency regarding payments to public sector entities by companies in the oil and mining industries, as well as transparency regarding the use of these revenues by host country governments.

The World Bank has increasingly focussed on corruption (and weak public sector governance in general) as a major obstacle in the pursuit of its key mission to alleviate poverty. Its World Development Report 2004 "Making Services Work for the Poor" discusses the links between corruption and poverty persistence and the appropriate policy response. Since 1996, the Bank has supported more than 600 anticorruption programs and governance initiatives developed by its member countries. It shares its experience with the international community by free access to extensive documentation on its website, and actively participates in various international

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[23] Information for this paragraph is taken from "An Introduction to the FATF and Its Work" accessible at http://www.fatf-gafi.org/media/fatf/documents/brochuresannualreports/Introduction%20to%20the%20FATF.pdf.

anticorruption activities.[24] The World Bank's initiatives contribute to the analysis of the linkages between poor governance, corruption, and economic growth. Poor governance and corruption negatively affect literacy rates and infant mortality. They reduce the benefits of foreign direct investment and hinder local companies from partnering with multinational firms. The Word Bank has used its extensive experience and data to develop methodologies for designing effective reform processes that increase the stability of a country's investment climate.[25]

Recognizing the importance of good public sector governance for the successful pursuit of the IMF's key mission to secure global financial stability and foster monetary cooperation among member countries, its Interim Committee explicitly included the fight against corruption in its 1996 declaration "Partnership for Sustainable Global Growth". Subsequently, the Executive Board has elaborated guidelines regarding the implementation of pertinent policies.[26] Following these guidelines, the IMF focuses on its areas of expertise, which include financial sector soundness (including exchange rate policies and Central Bank governance) and the related areas of tax administration (including tariffs) and public resource management. The guidelines highlight the importance of accountability to be supported by transparent procedures and institutions. Technical assistance in its areas of expertise to member countries to strengthen their anticorruption efforts has become an integral part of the IMF's work programme. Through these mechanisms, the IMF aims at supporting market integrity and encourage competition by eliminating or reducing obstacles created by corrupt practices.[27]

Concluding remarks and some policy conclusions

While there is a negative correlation between observed levels of output and perceived corruption, attempts to link corruption measures to observed rates of output growth have produced less robust and more ambiguous - and at times puzzling - results. A number of theoretical and practical reasons account for the difficulty in identifying the effect of corruption on economic growth: The relationship between the two variables is not direct, but materializes through a number of diverse transmission mechanisms, which are likely to be characterised by different time lags. In addition, the importance of different transmission mechanisms appears to be influenced by various aspects of public sector governance (or "institutions"), and these relationships often involve feedback effects as well, so that the variables involved are strongly interdependent and jointly determined.

The resulting complex web of mutually-dependent variables is difficult to analyze with conventional methods of empirical research, as it is prone to imply nonlinearities and multiple equilibria. Recent efforts to apply more advanced statistical analyses that are better able to tackle such difficulties (albeit only subject to sweeping simplifications) have shown some promising

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[24] An up-to-date summary of the World Bank's anticorruption activities can be found at its website: "How the Bank Helps Countries Fight Corruption", World Bank(2013b)

[25] Taken from the World Bank's "Tackling Corruption and Promoting Better Governance: The Road Ahead", October 5, 2012.

[26] The Role of the IMF in Governance Issues: Guidance Note (1997), accessible at:
http://www.imf.org/external/pubs/ft/exrp/govern/govindex.htm

[27] "The IMF and Good Governance", accessible at http://www.imf.org/external/np/exr/facts/gov.htm.

results, but have so far fallen short of identifying the corruption-growth nexus with precision. More mundane problems of measurement and imperfect aggregation are also likely to have contributed to mediocre empirical results in this area, as many of the variables involved represent complex multidimensional phenomena which are difficult to gauge by one-dimensional variables.

Insistence on an evidence-based policy approach can therefore not rely on a clear demonstration of a strong direct link between the level of corruption and the economic growth performance, but has to proceed iteratively: There is an extensive literature on what helps and what hinders economic growth, even though our understanding of this relationship remains limited. As a matter of accounting identity, the major source of economic growth is "technical progress", aka "the residual" in the production function. A good chunk of this residual can be explained by quality improvements in the conventional factor inputs of capital and labour, and these can in turn be quantified by proxy measures like human capital (education), knowledge based capital (KBC, i.e. non tangible investment), and social capital (trust), etc.

Thanks to extensive studies in these areas, we also know a lot about what determines the variables identified as key drivers of economic growth: innovation is strongly stimulated by effective competition, including openness to trade and foreign direct investment. Human capital accumulation depends on public expenditure on education, as physical infrastructure is the result of public investment. The accumulation of KBC is stimulated by effective and fair competition and productive entrepreneurship. And, last but not least, public trust depends on transparency and accountability in government operations.

Unlike the missing clear evidence of a direct effect of corruption on measured output growth, studies that have looked separately at the effect of corruption on the key drivers behind economic growth have produced more promising results, despite the fact that several of the abovementioned problems are still present, albeit to a lesser degree, as the analysed relationships become less convoluted. This advantage is partly offset by the rising complexity of some of the variables identified as key drivers of growth (e.g. KBC). The empirical studies reviewed in the report show that corruption affects many of the drivers of economic growth (or their determinants) negatively, and it can therefore be inferred that the ultimate effect on growth is likewise negative, despite the absence of a significant and robust direct correlation between these variables.

A recurring theme in both the theoretical discussion of corruption and in related empirical research is the close interdependence between corruption and the quality of other aspects of public sector governance. Many of the opportunities for corruption are created by imperfections of institutional arrangements like poor regulatory quality, lack of transparency in accounting and financial control systems (importantly including the system of taxation), and government organizations lacking accountability of both bureaucrats and politicians.The fact that corruption appears to be less damaging to growth in an environment of poor public sector governance does not justify complacency by policy makers. Rather, it provides a strong signal that improving governance structures (which will in turn reduce corruption opportunities) should be given high priority in the country's structural reform agenda. The subversive effects of corruption regarding general trust and government legitimacy prevail in both low and high quality governance scenarios, and their damage to overall efficiency and wellbeing is likely to be significant.

A question frequently raised in the discussion on the appropriate policy response to corruption is whether to focus on the punishment of perpetrators or whether to primarily pursue preventive policies, i.e. reducing opportunities and incentives to engage in corrupt practices. In the light of the preceding discussion, the answer clearly depends on the state of public sector governance and pertinent institutions: In an environment where the quality of governance is low, priority should be given to reforms that focus on improving regulatory quality, the rule of law, government effectiveness and other pertinent governance characteristics. Successful reforms in these areas can be expected to reduce the incidence of corruption as well. However, where the quality of governance closely corresponds to best practices (and therefore its subversion by corruption causes significant damage), anticorruption policy should focus on detection and on the implementation of appropriate sanctions.

Further support for a strong anticorruption policy stance is provided by evidence on the damaging effect that corruption has on variables other than output growth, which are nevertheless important for sustainable, equitable, and clean development. Besides public trust mentioned above, these include income distribution and environmental quality. Recent empirical work by Aidt (2009) shows that the negative effect of corruption on sustainable wealth formation, which adjusts gross fixed investment for resource depletion and human capital formation, is statistically significant and robust. This research also shows that, within the context of such an enlarged definition of growth, no significant "grease effect" of corruption is discernible.

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