Consequences of Corruption at the Sector Level and Implications for Economic Growth and Development

OECD

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Please cite this publication as:
OECD (2015), *Consequences of Corruption at the Sector Level and Implications for Economic Growth and Development*, OECD Publishing, Paris.
http://dx.doi.org/10.1787/9789264230781-en

ISBN 978-92-64-23076-7 (print)
ISBN 978-92-64-23078-1 (PDF)

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Foreword

Over the past seven years, G20 countries, with the support of international organisations including the OECD, have been working hard to reignite the engines of growth and promote investment and boost global trade. This report attempts to present a new paradigm for the fight against corruption: strengthening the moral and legal imperative with the economic and political need. Corruption has the potential to hinder growth and development and should therefore be tackled accordingly.

The negative relationship between corruption and economic growth and development was already highlighted by the G20 as early as 2010 with the Group's adoption of the first Anti-Corruption Action Plan. Not until relatively recently, however, was the fight against corruption discussed as an element of the leader's international economic policy agenda. Accordingly, the emphasis was put on developing the best evidence based analysis to show the linkages and the impact of corrupt activities on growth and wellbeing. Although research on this area has been advanced for years in many institutions and international organisations, having clear and factual indicators, beyond perception surveys, is not an easy task to pursue.

This is why, in 2013, the OECD presented to the G20 the Issues Paper on the Impact of Corruption on Economic Growth. *Thereafter, at their St. Petersburg Summit, G20 Leaders called on the OECD to work further on this issue and this report was prepared by the OECD, in cooperation with the World Bank, as another strong institution on these matters, to feed the G20 reflection on its global agenda against corruption.*

The report attempts to shed light on the link between corruption and economic growth and development by unraveling available information and developing recommendations for more effective anticorruption strategies. Indeed, as many countries have made efforts to strengthen their general integrity tools, improved knowledge of the consequences of corruption may promote more robust and systematic implementation and bolster the political momentum for effective and collective action against corruption. It can also track trends and increase citizens' supports for the fight against corruption.

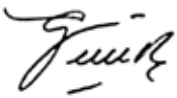
More concretely, the report analyses the impact of corruption on four key sectors: extractive industries, utilities and infrastructure, health, and education. The consequences on investment across all sectors were the object of specific attention. These four sectors are of particular interest because of their significant role in driving growth and producing development. They constitute also a platform of multiple public private interactions, so the risk and vulnerability to corruption could be high.

Some of the macro lessons learned from the cross-sectoral analysis show that, even though the impact of corruption remains difficult to quantify and further analysis of corruption in a broader context is still needed, it is clear that corruption has a direct impact on the cost of a project both for the private and public sectors. Its indirect effects include damaging public institutions, impairing citizens' trust in their government thereby lowering incentives for innovation, and increasing social inequality. But they also increase the cost of doing business, a tax on economic activities, that then is translated to the ultimate users or consumers of the projects.

Corruption causes market distortions thus discouraging foreign investment and competition. For market players, corruption indeed often adds an unpredictable tax on their operations while distorted political decisions due to corruption result in budget allocations, sector regulation, and trade barriers that are contrary to public interest and lead to long-term losses of revenue for the State. This is especially true in the extractive and construction sectors. Moreover, mainly due to the inefficiency that it causes, corruption affects the quality and supply of products and services while also leading to the rise of other criminal activities, which have their own negative consequences on growth. This is without considering the many negative impacts that can derive from capturing of the political space of corrupt private companies, or biased decisions in the public sector when the main consideration is the personal gain.

The report's policy recommendations result from an analysis that yields concrete anticorruption actions that can be undertaken by countries. Such measures should focus on clear outcomes and cost effectiveness as well as provide key general features that address both the supply and demand sides of corruption. Additionally, the cross-sectoral analysis demonstrates the importance of independent, competent and better regulatory and law enforcement systems. In other words, increasing the risk of detection of corruption is essential. They also emphasize the need for input from local business and civil society when tailoring these high-level recommendations to specific country circumstances: governments cannot do this alone, all stakeholders must drive this effort! Finally, this report also reveals the need for the development of a next generation of corruption data to better comprehend the dynamics of corruption and allow evidence-based policy design.

With this report, we urge the international community to send a collective signal that the design, adoption and proper enforcement of anti-corruption measures is a critical national and collective priority and an integral part of the G20 growth and development agenda.



Gabriela Ramos
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Acknowledgements

This report was prepared under the leadership of the OECD Chief of Staff and Sherpa, Gabriela Ramos and Director for Legal affairs and representative of the OECD to the G20 Anticorruption Working Group, Nicola Bonucci. It benefited from comments and supports across the whole Organisation, as well as from substantive inputs from the World Bank Group, coordinated by Jean Pesme, Manager of the financial market integrity unit and co-ordinator of the StAR initiative.

Its drafting was led and co-ordinated by Tina Søreide, an economist at The Faculty of Law, University of Bergen, on leave from Chr. Michelsen Institute (CMI), Norway. Sector-specific analysis was led by Antonio Estache, Professor at The Free University of Brussels (Université Libre de Bruxelles); Jacques Hallak, Former Director of the International Institute for Educational Planning (IIEP) in Paris, now International Consultant; Philippe Le Billon, Professor at the University of British Columbia, Vancouver; Muriel Poisson, Programme Specialist at the International Institute for Educational Planning (IIEP-UNESCO) in Paris; and Taryn Vian, Associate Professor of International Health at Boston University. Special thanks go to Vincent Somville, Senior Economist at Chr. Michelsen Institute (CMI), Norway for its support in finalising the draft.

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Executive summary

The OECD Study on the Impact of Corruption on Economic Growth presented to the G20 in 2013 concluded 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, [...] – which impact significantly on economic welfare and, in the case of trust, also a country's development potential". In order to better understand this correlation between corruption and economic growth as well as to support the development of more efficient anti-corruption strategies, this report attempts to disentangle the data that is available on the effects of corruption. More specifically, it reviews the impact of corruption on four key sectors essential for growth and development, but particularly vulnerable to corruption: extractive industries, utilities and infrastructure, health, and education. For each of these sectors, the study analyses how corruption distorts sector performance and the consequences of these distortions for society at large. This analysis is summarised below.

- **Extractive industries.** Growing demand, rising prices, and the geographic spread of exploration and production have made this sector a major driver of economic growth in many countries. Dependence on natural resources comes with its own challenges, such as the exacerbation of corruption, and may even undermine economic performance in the absence of sound institutions. Several factors make this sector prone to corruption: high-level discretionary political control; frequent blurring of public, shareholder, and personal interests; limited competition among firms often resulting in complicit behaviour; and complex financial structures among others. In analysing this sector, proxies such as contract reporting, national extractive companies' financial reporting and auditing requirements, as well as checks on licensing processes, demonstrate the risk of corruption in resource-dependent countries. Corruption is expected to affect this sector where understandings between public and private agents result in

sub-optimal decision-making in selecting companies and planning which resources to develop. In addition, it can cause operational delays and divert generated funds from populations.

- **Utilities and infrastructure.** Empirical research confirms infrastructure's direct and indirect role in economic development, especially when measured in terms of growth or productivity. One of the characteristics that make this sector especially prone to corruption is the frequent monopoly situation, in which those who control the entities receive large rents. Additionally, due to the need for constant government intervention in this sector, there are many opportunities for misuse of authority and demand for bribes. A review of the largest infrastructure projects globally, for example, found systematic planning failure, cost overruns and inflated demand estimates in all regions. Corruption hampers this sector primarily through distorted competition and market regulation. Sector-specific indicators of corruption were taken from: legal cases or audits by national accounting offices; experimental evidence generated in the field; proxies generated from benchmarking or assessment of incoherencies in public data on cost or production; assessment of irregularities in administrative expenditure; asset sales data incoherencies; and institutional assessments of cross-ownership of assets to identify collusion. All of these have allowed for the identification of governance decisions potentially distorted by corruption across the planning/regulation, financing, and service delivery phases of an infrastructure project.

- **Health.** Investing in health increases a country's long-term GDP growth. But six main types of abuse distort this sector: bribery in medical service delivery (informal payments), corruption in procurement, improper marketing relations, misuse of high level positions, undue reimbursement claims, and fraud and embezzlement of medicine and medical devices. This sector's analysis is thus focused primarily on challenges relating to planning and budgeting, procurement, and service delivery. A review of data linking corruption practices and poor health outcomes shows that, at the highest political level, corruption impacts health by changing government allocation of funding weakening the health systems building blocks thereby allowing for more abuse of power.

- **Education.** Macro-economic studies have demonstrated a positive relationship between government spending on education and economic growth. According to research reviewed for this report, however, this growth potential is impeded by corruption. More specifically, corruption in this sector distorts capital investment, budget allocations, school location, school construction, human resource management (i.e. teacher recruitment, promotion and training), purchase and distribution of

equipment (i.e. textbooks, materials, and food), school and university enrolment, accreditation of programmes and institutions, and private school licensing, among others. The most serious distortions are associated with leakages of public funds, ghost schools and teachers, and widespread absenteeism. This report therefore focuses on three overarching areas of concern within the sector: policy decisions, management decisions, and service delivery decisions. These dysfunctions can be related to weak capacities of governance, but may also be related to well-identified corrupt practices, described more in depth in this study. The consequences of sector distortions for society at large include fewer people trained, lower levels of qualifications, decreased worker productivity, increased social inequality, and a decrease in the country's ability to benefit from FDI or to develop competitive industries.

Through this cross-sectoral study, the OECD has identified macro lessons, general policy recommendations, and sector specific recommendations for the design of anti-corruption strategies aimed at promoting growth and to inform the G20's broader growth agenda. Some of the macro lessons learned from the cross-sectoral analysis show that corruption has a direct impact on the cost of a project both for the private and public sectors, as well as indirect effects such as damaging public institutions, impairing citizens' trust in their government, and increasing social inequality. General policy recommendations therefore highlight, first and foremost, the need for countries to explicitly prioritise anti-corruption measures as an integral part of their growth and development agenda. Such measures should focus on clear outcomes, cost effectiveness, and provide key general features that address both the supply and demand sides of corruption.

Assessment and recommendations

The G20 highlighted that corruption is a severe impediment to economic growth as early as the adoption of its first Anti-Corruption Action Plan in 2010. The OECD's "Issues Paper on Corruption and Economic Growth", presented to G20 Leaders at the St. Petersburg Summit in September 2013, demonstrated 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, [...] – which impact significantly on economic welfare and, in the case of trust, also a country's development potential". Following up on these preliminary findings, this report provides an analysis of the impact of a range of corrupt practices on economic growth and development in four key sectors: utilities and infrastructure, extractive industries, health and education. These sectors were selected because of their unique contributions to growth and development and of specific corruption risks they face.

Drawing lessons from the cross-cutting analysis, it identifies policy recommendations for the design of anti-corruption strategies aimed at promoting growth. In this context, the conclusions may also contribute to the broader growth agenda of the G20, which has focused, under Australia's recent leadership, on lifting the collective Gross Domestic Product (GDP) of G20 members by at least 2% above the current trajectory over five years. Indeed, increasing understanding of how corruption inhibits economic growth and creating synergies between different strands of the G20 can only help the design of G20 actions that have a lasting effect on corruption, that promote growth and tackle the impact of corruption on inequalities. Such an approach would also assist in further integrating anti-corruption in G20 countries' strategies for sustainable growth and development at the country level. For instance, the development of G20 national anti-corruption strategies, for which progress could be measurable, need to be tailored to specific country circumstances and economies so that anti-corruption efforts would achieve the best results for economic growth and value for money.

Lessons from cross-sectoral analysis

Quantification of the impact of corruption on economic growth at the macro level remains difficult. Still, the analysis provides a significant basis to identify avenues for action, by presenting evidence at the micro-level of the consequences of corruption, in particular through a better understanding of

the transmission channels. Further, as indicators of economic performance do not necessarily capture social damage, the impact of corruption needs to be examined in a broader context.

Corruption has a direct specific impact on the cost of a project both for the business and for the public sector. The study shows corruption causing higher prices in all the sectors; higher prices for medicine, health services, textbooks, utility services, infrastructure; and extra payments on the import of inputs needed for petroleum production or mining.

But corruption also has indirect consequences, damaging public institutions, impairing citizens' trust in their government and causing lower incentives for innovation and higher inequality. For example, high levels of perceived corruption are associated with lower spending on social services, including both health and education, which in turn can undermine social welfare, skills in the work force and trust in institutions. Further, the poor are often the first victims of corrupt practices in the education sector since for them, the illegal fees, bribes for promotion to the next grade or to obtain a diploma, etc. are a heavy burden that leads many of them to drop out. Thus it is fair to say that corruption tends to increase social inequality.

Corruption burdens market players by adding an *unpredictable tax* on their operations. This unpredictability may prevent the entry of foreign players and thus also the benefits of competition and technology spill-overs. The mere fact that officials collect bribes, which may accumulate to large sums for those involved even if each single bribe is small, reflects serious institutional dysfunctions – often an indicator that conditions and incentives for economic activity can be made more efficient. For example, in the power infrastructure sector, investors' decision to enter a market is significantly driven by the perceived risks of corruption.

Distortions of political decisions due to corruption are likely to cause the clearest economic damage. They result in budget allocations, sector regulation and trade barriers contrary to the public interest, and eventually losses of revenue for the state. This is particularly the case in extractive sector. The available evidence suggests that such distortions have severe consequences, in particular where governance institutions and integrity systems are weak. Large resource revenues facilitate rent seeking and patronage, potentially resulting in higher levels of corruption, diversion of time and talent from productive activities, inefficient public spending, and low political accountability. Several factors make extractive sectors prone to corruption, including: high-level discretionary political control; frequent blurring of public, shareholder, and personal interests; limited competition among firms, which can result in collusive behaviour; complex financial structures requiring stringent auditing; and lucrative opportunities resulting

from the control of resource export channels (e.g. via exclusive export licenses) as well as the control of imported goods (e.g. exclusive import licenses) in these often highly import-dependent economies. The ultimate function of the development of mining and petroleum operations for resource-rich countries is to create, out of their natural resource endowment, a reliable long-term source of financial flows that can be converted into sustainable economic activities through sound revenue management. In view of all the points exposed above, this sector requires special scrutiny and strong action. This is also a particular challenge in construction, for example with large infrastructure projects that are not really needed as one of the consequences of too tight connections between politicians. In the utilities sectors, corruption may undermine the independence of the regulator with distortive impacts on prices, service delivery and expenses. This in turn results in too-expensive subsidies and over-inflated costs, leading to losses for tax payers. In the health and education sectors, one key consequence of corruption is sub-optimal budget allocation.

Corruption hampers the quality of products and services and reduces their availability. For example, among the factors linking corruption in education to economic growth are the lower value for money in terms of inefficient utilisation of public resources and fewer people trained given the amount of resources. In a particular city, a reform consisting of the reduction of distorted practices in the area of teacher management made it possible to serve 120 000 additional pupils without an additional recruitment of teachers, demonstrating the impact of corruption on efficiency.

Finally, corruption has a clear impact on the rise of other criminal activities, which have their own negative consequences on growth. Corruption is closely related to activities such as money laundering, tax evasion, illicit trade and misuse of corporate vehicles.

Policy conclusions

General policy considerations

A corruption-free environment is by essence a public good in particular in a globalised world and should be treated as such. In light of such governments' international responsibilities, the design of national and international anti-corruption strategies matters, and should ensure sustainable growth and good governance.

- **G20 countries should send a collective signal that the design, adoption and proper enforcement of anti-corruption measures is a critical national and collective priority, integral part of the G20 growth and development agenda.**

Such anti-corruption strategies should focus on clear outcomes and cost effectiveness. Political corruption, bureaucratic corruption and specific sector corruption have their own characteristics and pose their own individual problems, which also differ according to a country's systems. A micro-level analysis of the specific challenges will often be necessary to ensure relevance and value for money.

Anti-corruption initiatives should provide key general features, addressing both the demand and supply side of corruption and ensuring even enforcement across the board.

First and foremost, the sectors review carried out in the study demonstrate the importance of independent, competent and better regulatory and law enforcement systems and auditing rules and systems. **Increasing the risk of detection is essential to combat financial crime.**

- **G20 countries should act decisively for a business environment free from extortive corruption.** They should call on firms to have strong internal controls to prevent bribes. G20 countries should not only stress the importance of collective action against solicitation but should enforce vigorously the existing laws against both bribe payers and bribe takers. They should assess how the legal and institutional framework can be misused by indelicate public officials and take action accordingly.

- **Tackling collusive corruption is much more challenging,** and exclusive reliance on compliance systems within institutions and firms will not be effective. G20 countries should highlight the importance of external controls, regulatory and law enforcement systems and a general set of checks and balances to detect, deter and prosecute collusive corruption, addressing both the supply and demand sides. In this context, effective international co-operation among various jurisdictions becomes even more essential.

- One key finding of the cross-sectoral micro analysis is that **effective integrity frameworks require targeting both collusive and extortive corruption.** The analysis identifies several elements that are relevant to both forms of corruption.

- **Transparency should be an integral component of all anti-corruption strategies.** Access to information and open government make it more difficult for corruption to go undetected. Transparency initiatives, particularly in the areas of construction contracts and financing and extractive industries, are necessary but still insufficient steps in the right direction. There is scope for further transparency initiatives, focussed on ensuring that purchasers receive what they are paying for, including through ensuring public access to contracts and contract information.

- Other important transparency initiatives are those that compare prices for products and services purchased by the public, those that test what information is actually achievable (and control facts), and those initiated to promote **financial transparency**. It is especially important to keep up the international momentum on efforts to further lift excessive professional secrecy, to promote automatic exchange of information on tax matters and transparency of the beneficial ownership of legal entities and arrangements

- **Public procurement merits particular scrutiny.** Whereas considerable attention has been given recently to the procurement process stricto sensu (e-procurement, and other similar initiatives), generally speaking anticorruption strategies have not really addressed the pre- and post-procurement phases. More accountability on why certain decisions are taken and on which basis would allow a better control. Open government – including public access to contracts – can be used for that purpose. Very little is also known on what happens after the call for tender has been concluded and the market attributed. Amendments to contract, post-delivery service agreements or offsets are not subject to the same level of scrutiny and publicity as the main contract.

- The study demonstrates that **anti-corruption measures must therefore be targeted and tailored** – one set of solutions will not work in all contexts, in all sectors or in all countries. Anti-corruption strategies should be based on a clear identification of the objectives, of the causal relationship between the policy and its effects.

- The G20 should call for the **development of a next generation of corruption data,** better tailored to capture the complexity of corruption risks, and to support the development of more evidence-based policies.

- Last but not least, there is a real **need for robust evaluation of anti-corruption practices** and measures. We believe that future policies should be accompanied by a solid evaluation component, with an impact assessment of the measures adopted. These assessments could possibly be undertaken through performance assessments of results, with measurement of efficiency and implementation of anti-corruption measures and identification of value-for-money solutions.

Sector specific recommendations

The impact of corruption and related distortions at the sector level vary according to the sector, the stage of the project cycle and the outcome, as illustrated by the table "*Consequences of corruption across sectors*". The following section provides proposals and recommendations for action in support of

existing sector-driven efforts. It also makes proposals for further sector-specific work to inform anti-corruption strategies and actions by the G20.

Utilities and infrastructure

- **Fighting corruption in the utilities infrastructure sector should target procurement, not only at the tender phase, but through the whole acquisition process.** In the early phases, a rigorous project identification and appraisal system are critical to reduce the risk of grand corruption. The G20 could take the initiative of developing guidance, or common principles, to provide a rigorous framework for identifying, appraising and prioritising public infrastructure projects. Anti-corruption strategies should also consider recourse to a wider set of contractual arrangements, with more integrated forms of contract such as "design-build" or "alliancing" where there is a single point of responsibility or where the relationship is based on a common financial interest as the parties share in any costs savings or losses. Such efforts should also build on the current momentum on open contracting, including transparency of contract opportunities or contract awards, which is likely to be of particular benefit to utilities and infrastructure. A significant challenge post-tender is the renegotiation of contracts, as evidence shows that they are related to significant corruption risks. Anti-corruption efforts should also aim at modernising procurement practices to reduce the risks of implicit forms of corruption such as collusion and capture.

- As corruption in the sector tends to involve decision-making authorities at several levels, anticorruption responses would benefit significantly from **a strengthening of formal accountability systems across the board, including at the sub-national level.**

- Countries could consider requiring independent quality control of final constructions (e.g. group of international experts) on projects conducted on development loans and assistance.

Extractive industries

All areas of government involvement – policy design, licensing, regulation, enforcement, commercial participation, tax administration, and management and spending of revenues – present major corruption risks. G20 countries have considerable experience and expertise in dealing with these issues, and the G20 therefore has a special responsibility to lead by example in the fight against corruption in extractive industries to help resource-rich countries maximise the sustainable growth that they can generate from this

sector. This responsibility also includes the rigorous enforcement of anti-bribery laws against companies in the extractive sector.

- Political corruption is a significant challenge in addressing corruption in the extractive industries, which also brings most severe consequences. **Given the critical importance of licensing, the role of state-owned enterprises and the tax environment for extractive deals, these three pillars should receive particular attention** in any G20 work and initiative related to extractive industries.

- **Enhanced transparency should be a cornerstone of anti-corruption measures to fight corruption in the extractive industry.** This should include financial disclosure for companies involved in the extractive value chain, including transparency of beneficial ownership and of financial flows.

- **Capacity building of audit agencies and accountability mechanisms** in producing countries is critical to tackle corrupt practices in extractive industries, and improve detection of corrupt activities. Emerging good practices such as the appointment of special transaction advisors for very high-value contracts or the appointment of special compliance officers/observers for such transactions should be considered by G20 countries.

- **Building on the growing experience of several G20 countries, the G20 could include steps related to the mandatory reporting of extractive industries fiscal revenues in any extractives related work.** Companies either from G20 countries or listed on their stock markets have a very significant presence in the extractive sector around the world. Based on the G20's public support for disclosure of extractive industry payments to governments, these initiatives could be reinforced by connecting G20 Anti-Corruption Working Group (ACWG) work into the emerging global transparency standard and ensuring a level playing field.

Health

- **Anti-corruption measures targeting the health sector should address the use of informal payments,** which create financial barriers to service use and put citizens at risk for catastrophic payments (defined as payments exceeding 40% of income after subsistence needs are met) and subsequent impoverishment.

- G20 countries should reduce corruption by:

  - **limiting discretion by government actors** (including agency or judicial review of medicines procurement decisions)

- **securing the rights of citizens** against wrongdoing by government agents (including the opportunity to seek redress from clinicians who demand bribes for services that should be free)
- **ensuring adequate exchange of information** between citizens and government (including information about entitlements to health services, official prices, and citizen input to the development of waiting-list policies, insurance-benefit packages, etc.).

- Anti-corruption strategies in the health sector could support the creation of citizen advocacy offices, ombudsman, and grievance redress mechanisms, including strengthening of civil society participation in these functions.

Education

Education is one of the major public sectors, and it is a key component of any sustainable growth. Distortions of the sector due to corruption may have a long-lasting effect even though the sums may not be so important.

- **Initiatives in the education sector should address corrupt practices that come about during policy decisions** (corresponding to general policy and long-term orientations), **management decisions** (whose scope is less broad and whose effects require less time) and **operational decisions and service delivery** (which can be defined as common daily decisions, limited in scope).

- Policy decisions are affected by corruption in different ways, including allocation of resources to certain schools, construction work, allocation of important positions, and sector regulation more generally. Management decisions affected by corruption could be related to the collection of illegal fees for school admission or exams, favouritism and nepotism in the recruitment of teachers. Examples of corruption in service delivery and operational decisions typically include inflated enrolment figures to augment resources for the school, recruitment of teachers on the basis of fake credentials and diplomas, teachers' not teaching the whole curriculum to impose paid private tutoring, unauthorised deductions from teachers' salaries by education officials and bribing of accrediting agencies to obtain a license.

- **Tracking expenditures is particularly useful in this sector to detect and fight corruption,** and appropriate mechanisms could be put in place, such as Public Expenditure Tracking Surveys and Quantitative Service Delivery Surveys (QSDS).

1. Introduction

According to the G20 2010 Anti-Corruption Action Plan, "[C]orruption threatens the integrity of markets, undermines fair competition, distorts resource allocation, destroys public trust, and undermines the rule of law." However, how much it undermines, distorts and destroys – and in what sectors it threatens the integrity of markets the most – is difficult to quantify. A macro-oriented review of correlations between perceived corruption and economic performance was provided in the OECD Issues Paper on Corruption and Economic Growth for the 2013 G20 Leaders in St. Petersburg. It found that research consistently concludes with a significant negative relationship between corruption and development. While the magnitude of the effect varies with data and selection of countries, the most comprehensive study reviewed, a meta-analysis of 53 cross-country studies, found a nearly 1% decline in economic growth per unit improvement on a perception-based corruption index (Ugur and Dasgupta, 2011).

In order to act on corruption, such information needs to be disentangled and understood. Corruption may affect budget allocations, cause scarcity in service provision or loss of state revenues, and facilitate other forms of crime. It is found to reduce foreign direct investment, increase prices for consumers or industry, and hamper the quality goods and services. Unfair allocation of benefits may reduce political stability and even cause civil unrest. These different effects are associated with corruption, but they do not occur in all settings. The design of efficient strategies and priorities requires knowledge of the problem's extent, its causes and the mechanisms at play in different contexts. This paper presents some of the knowledge that is available. It is based on a stock-taking review of the existing data and literature by researchers with competence on corruption in various sectors, augmented by analysis undertaken by international organisations. The study is conducted for the G20 Anti-Corruption Working Group under the leadership of the OECD Secretariat in collaboration with staff of the World Bank Group.

Governments and multilateral organisations have the responsibility to enforce anti-corruption rules and promote barriers to corruption in public and private institutions. The UN Convention Against Corruption, the OECD Anti-bribery Convention and other relevant regional instruments set out the international framework for combatting corruption. Most countries have therefore improved their anti-corruption legislation and strengthened their

integrity tools in general, especially over the past 15 years, and we now have in place legal platforms for acting on corruption nationally and across borders. Progress on the ground depends on how the legal tools are enforced, and this is where initiatives are sometimes met with resistance. Improved knowledge of the consequences of corruption may promote more robust and systematic implementation and bolster the political momentum for effective and collective action against corruption. According to this review, such steps will increase trust in government systems and promote economic growth.

In Toronto in 2010 the G20 established the G20 ACWG. It endorsed its first Anti-Corruption Action Plan in Seoul later that year. This report feeds into the G20 anti-corruption process by taking stock of what we know about the direct and indirect economic consequences of corruption at the sector level. It is complementary to the review presented in St. Petersburg, since it digs deeper at the micro level and provides a better sense of what is behind the macro corruption-growth relationships. As such, it may inform the G20's work on how to improve aspects of the investment climate with particular impact on infrastructure development and the financing of small and medium-sized enterprises (SMEs). However, the details of policy solutions will follow not only from a review of the problem's consequences but also from an understanding of the problem's root causes. A related publication prepared for the World Bank Group provides a review of what we know about the "drivers" of corruption, listing main areas at risk and the individual propensity to exploit such opportunities.[1] This report also draws on sector specific "corruption risk mappings" prepared by the World Bank Group for the G20 ACWG, which add details to the sector-specific results presented here. Insights from these different products can inform policy processes and may contribute to building momentum for change.

This report describes the consequences of corruption in four selected sectors – extractive industries, utilities, health and education – presented in Sections 3-6. We limited the review to these four sectors in order to keep the report concise but sufficiently comprehensive to illustrate differences across sectors. These sectors were selected because of their unique roles in development and specific corruption risks. Each of the sectors is affected by corruption through a combination of overarching country-specific characteristics (including political weaknesses, civil conflict or low capacity) and sector-specific challenges (like market characteristics, government regulation and the overall opportunity to create 'rents').[2] Cross-cutting consequences, sector unique effects and policy considerations are summarised in Section 7.

Questions addressed for each of the four sectors are the following: What is the sector's role in development? What are the corruption-related challenges observed in the sector? What do the results tell us about different

forms of corruption's impacts on the overall economy? Could it be that corruption reduces the welfare benefits from foreign direct investment (FDI) and public-private partnerships (PPP)?[3] Considering such questions for each sector, the report uncovers the complexity of the corruption phenomenon. The mechanisms at play differ across sectors and decision-making stages along each sector's "value chain". Some sectors have characteristics that make them notoriously exposed to corruption – for example, if they require substantial government intervention, include huge public investments, or involve decision-making that is difficult to control. In construction, for example, many governance practices are developed as if there is complete information at the planning stage, while in reality this is rarely so, and the need for ad hoc solutions opens for unintended discretion and renegotiation and, therefore, a higher risk of corruption. When it comes to utility provision, the frequent need for government regulation and ownership decisions create risks of illegal influence on framework conditions. The production and export of oil and gas are consistently associated with higher risks, especially at the top level of governance. Health and education, often riddled with corruption in one country and well-functioning in another, often seem easier to reform. Also in these sectors, corruption coupled with bureaucratic fraud can be hard to control – even for the most action-oriented minister. For policy makers the distinctive character of sector and country challenges implies that one solution will not fit all circumstances. Introducing a range of anti-corruption initiatives, hoping that at least one of them will work – or will have some long-term norm building impact – is not necessarily cost-effective. Anti-corruption strategies need to address the rationale of those involved in corruption and will often require micro-level analysis of the specific situation.

Upon the sector-reviews, the report argues that it is time to start using the opportunities for *evidence-based policy design* that do exist. There are obvious challenges of securing improved data on the extent of corruption, but we do have sufficient information to draw some conclusions. We observe an increasing amount of documentation of what works and how much it matters for societies.[4] Such data-collecting exercises should be encouraged because this is the knowledge needed to tell how well governments perform on this important agenda and what they need to do better.

2. Assessing the consequences of corruption

2.1. What we mean by corruption

How can the consequences of corruption for economic development be measured? Corruption is *expected* to impede public service delivery, add extra taxes on firms and individuals, motivate rent-seeking instead of productivity, distort political planning processes, reduce the funds available for reinvestment, and facilitate other forms of crime. It may well have these different consequences, but corruption is hidden and its effects are rarely well-quantified. This section discusses what we mean by corruption and lists sources of information relied upon.

Corruption refers to the *misuse of entrusted authority for personal benefit*, but there is no universal definition of these acts. The United Nations Convention Against Corruption (UNCAC) Article 15-21 does not define corruption but sets out the corrupt practices that parties to the Convention should criminalise, including the "promise, offering or giving, to a public official, directly or indirectly … an undue advantage … in order that the official act or refrain from acting in the exercise of his or her official duties". It also lists the solicitation or acceptance by a public official of such a benefit, as well as the bribery of foreign public officials and officials of public international organisations. At the same time, there is space for countries to adapt the legal definition of corruption to their criminal justice system and norms and, therefore, there are cross-country variations in the legal definitions of the criminal offence of corruption. At a more conceptual level, corruption refers to a form of *trade in decisions that should not be for sale or in authority exploited to extort* benefits. An individual, trusted to make decisions on behalf of an institution, is compensated personally for making a decision that deviates from what would otherwise be decided. Corruption will prevent society from reaching the benefits associated with the counterfactual (i.e. what would have been decided if the corruption did not take place) and, often, cause unambiguous damage. For analytical and practical purposes, we refer to different forms of corruption.

2.1.1. Categories of corruption

This report distinguishes between political corruption and bureaucratic corruption. *Political corruption* refers to acts at the political level, often with high-level civil servants involved as well; in the more serious cases a situation where those with the highest authority appear more concerned

with personal benefits and power than development for society at large. Its consequences will often depend on the specific source of revenues available for "grabbing" – and for this reason, the environment for anti-corruption is different in an emerging-market economy (where taxes are an increasingly important source of state revenues) compared with an aid-dependent society or a natural-resource exporter (where the government is less dependent on domestic markets and citizens for state revenues). *Bureaucratic corruption* refers to the state administration at central and local levels. Allocation of authority and trust is needed for governance to function and, at the same time, it creates opportunities for corruption. The extent of risks will depend on how authority is organised, as well as the context-specific opportunities to generate rents for grabbing.

Regardless of the level of authority, it is important to distinguish between collusive and extortive corruption. *Collusive corruption* means that both parties involved are motivated for the illegal deal and conspire to keep the crime hidden; often the case in procurement-related corruption or other business deals. This form of corruption is often initiated by those who benefit from a certain government decision, whether market players or individuals. *Extortive corruption* implies that the one who makes a bribe payment feels forced to be involved. Such bribery is often associated with *facilitation payments*[5] – although these payments may well be offered quite voluntarily by the one who benefits from the public sector service or decision in question. Extortion, or what we could call "strong solicitation", as a characteristic of corruption, refers to the cases when citizens or firms consider themselves coerced to pay a bribe or feel obliged to do so, even if the transaction is illegal. The (extortive) demand for bribes may come from any level of decision-making authority, and the term's relevance goes beyond *petty corruption*.[6] Table 2.1. exemplifies these concepts of corruption.

Table 2.1. **Concepts of corruption and areas at risk**

	Bureaucratic corruption	Political corruption
Extortive corruption	Service delivery (health, education, utility provision, permits, police)	Licenses, ownership, expropriation, court decisions
Collusive corruption	Deal on how to deviate from rules (taxes, quality control, permits), public procurement	Close connections between politicians and firms (utility regulation, construction planning), high-level recruitment

2.1.2. Distinction between corruption and other offences or dysfunctions

The distinction between corruption and perceived privileges, cronyism and other forms of favouritism is not always easy to draw, and the general public often refers to influence-peddling of various sorts as corruption, regardless of the strictly legal perspective. Besides, while most measures of corruption are

based on perceived or reported monetary transactions (e.g. bribe payments), the concept of corruption may comprise a broader set of practices – for example, the collusive agreement between decision-makers in the public and private sectors on how to secure hidden benefits for both even if no bribe transfer is being made. Public servants who simply do not conduct their work *misuse their authority* for personal benefit (i.e. they receive a salary in exchange for minimal if any services), sometimes in combination with a job in the private sector. Keeping to a strict sense of the term corruption, such dysfunctions have other names.[7] Trade of counterfeit medicines in the health sector is not corruption, even if they are the only observable result of governance failure (but perhaps such crime is combined with corruption as well).

In this report, the term "corruption" refers to the core concept of such crime, meaning a quid pro quo agreement between two or more parties on how to manipulate an administrative decision. Authority can be misused in several ways, however, and the distinction between embezzlement, fraud and absenteeism from duties is not always clear – especially since giving a bribe to witnesses may help keep other offences secret. Further clarification of corrupt practices and how to separate them from other dysfunctions is provided where relevant in Sections 3-6 on corruption in sectors. Finally, this report does not address private-to-private bribery, also known as "commercial bribery" – even though this is harmful, too.

2.2. Data availability

The covert nature of corruption implies that observed cases of corruption can be exceptional instances or merely the tip of an iceberg. We have various sources of information – many of them significantly improved in recent years, including aggregated governance indicators, business surveys, business-climate assessments, household surveys, country integrity assessments, systematic collection of cases and anecdotal evidence. In combination, these different sources can inform fairly well about the form and extent of corruption in a given setting. It is nonetheless important to keep in mind that a phenomenon like corruption can never be measured accurately.

2.2.1. The extent of corruption

It is often difficult to know what conclusions can be drawn from survey results on corruption. According to polls conducted for a recent EU anti-corruption report,[8] for example, three-quarters of respondents across the area think corruption is widespread in their own country. Personal experience of corruption is far rarer; around 2-3% say they have been asked for bribes and one in eight has witnessed a case of corruption in the most recent year. Four

out of ten European companies consider corruption as a problem for doing business, but the dimension of their added costs is not specified.

Corruption is a crime, usually kept secret, and we can rarely rely fully on only one source of data – whether it is perception-based indices, surveys, or the number of investigations, media cases or prosecutions. Country rankings of perceived corruption have largely been interpreted as if countries have one level of corruption (presented with accuracy to the second digit), while obviously, the problem varies across institutions, sectors and contexts. The number of investigations and court cases may be driven by qualities of the criminal-justice system and will not necessarily reflect the extent of corruption per se. In fact, upon an increasing number of court cases, the extent of corruption may appear to increase, while in reality, it may be the country's criminal-justice system that has improved. Besides, measurement efforts themselves can affect the extent of corruption: agents under scrutiny tend to reduce their illicit practices if they know they are being watched and, conversely, cross-country corruption rankings can persuade some actors that they need to offer bribes to succeed in a given market.[9]

Nonetheless, a combination of several sources amount to useful "approximate knowledge" about the extent of corruption. Systematic gathering of survey data on experienced corruption – with similar approaches and questions applied across countries and over time – are now starting to generate reliable information about the extent of corruption, especially when the methodological approach is consistent and results are replicable. Among the most comprehensive data collection programmes of this sort is the World Bank Enterprise Surveys. Besides, over the past few years we have seen an increasing amount of research results based on *observed corruption*. Even if such studies are usually context- and/or country-specific, and will rarely allow for generalisations across countries, they provide insights that to some extent can be useful for understanding mechanisms in similar settings.[10]

What these data-generating exercises tell us is that corruption is a problem all over the world. No country is free of this problem. There are differences across countries when it comes to how challenged they are. Low levels of corruption correlate with integrity mechanisms – which correlate with stability and increasing income levels over time. It is therefore not surprising that the extent of (perceived/estimated) corruption correlates with income level; poor countries generally experience more serious problems with domestic corruption.[11] The responsibility for these problems is nonetheless also shared with foreign players – since bribery in a number of cases[12] involves foreign firms and, in such circumstances, there no longer seem to be any significant difference amongst countries.

Most arguments in this report build on information from several different sources (see Annex A, Table A.1, for an overview of corruption indicators referred to in this report).[13]

2.2.2. Consequences

At least conceptually, we can distinguish between direct and indirect costs of corruption. The direct costs typically include bribe transfers, higher expenses, scarcity of essential services, lower quality and misallocations of public funds; all aspects that may hold back development. The indirect consequences are more subtle – such as lower incentives to innovate if market opportunities or jobs are allocated on other grounds than qualifications, the effect of not receiving the government services one is entitled to, lower trust in government institutions, adverse selection of contractors (while honest players stay away), and talented youth placing efforts in rent-seeking/positioning instead of productive labour, etc. Such indirect consequences are especially difficult to assess, but since they are potentially severe they cannot be ignored.

The fact that there is coexistence between poverty and corruption does not automatically imply causality; corruption leads to weak institutions and poverty, but it can also be the result of such problems. Given subtle consequences and the overall complexity of society, empirical research on governance more generally is challenged by the difficulty of telling exactly what is being captured by data and correlations. While corruption must be expected to distort the quality of government institutions, there are often a number of alternative reasons behind some observed governance failure. Fundamental challenges – like the general lack of state legitimacy, democratic deficit, civil conflict and low capacity – are not only results of governance dysfunctions, they have implications for governance – including on the extent of corruption. Identified correlations between corruption, sector performance and growth may therefore reflect other causalities than the ones we think we observe – and in fact, the causality may go in a different direction than expected. Two-way causality is likely in this context; thus, economic development may reduce the extent of corruption, while curbed corruption promotes growth.[14] The difficulty of determining the exact consequences of corruption is taken into account throughout this study.

2.2.3. Economic development

Economic performance is typically assessed by an indicator of economic growth, such as GDP. Considering corruption and its many potential indirect consequences, it is tempting to expand the measure of economic performance and include broader development indicators. Such exercises can easily be

tautological, however (i.e. water provision is weak because water provision is distorted – which tells us little), and for macro-economic reference this report refers primarily to standard estimates of economic performance – despite their inability to capture important aspects of development (income inequality, for instance).

Various studies have tried to correlate measures of corruption and a country's GDP growth rate, including several meta-analyses. The macro-oriented review of correlations between perceived corruption and economic performance, provided for the 2013 G20 Leaders in St. Petersburg, offers a useful review of that literature. This report will now turn to sector level distortions. The four sectors selected for this study are examined in Sections 3-6. Results are summarized and debated in Section 7.

3. Extractive industries

Natural-resource sectors are important for economic growth: the economy of many countries is dependent on natural resources, and primary commodity outputs constitute the foundation of most economic activities. In 2011, extractive sectors – oil and gas, and mining – generated about USD 3.5 trillion in annual gross revenue, corresponding to around 5% of global GDP, while the share in global international trade of fuels, metals and other minerals rose from 23% to 34% between 2001 and 2011 (UNCTAD, 2013).

Growing demand, rising prices, and the geographic spread of exploration and production activities have meant that the extractive sector has become a major driver of economic growth in many countries: Angola, Azerbaijan, Chad and Qatar saw growth rates ranging from 20% to 35% in some years over the past decade. Examining growth records between 1960 and 2006, Ross (2012) concludes that growth rates between oil and non-oil states were nearly equivalent, yet much more uneven for oil states within that period as a result of oil-revenue volatility. Oil states thus require much stronger institutions, especially fiscal ones, to offset such volatility and convert major windfalls into durable social and economic gains. Ross (2012) also notes that low women's employment and higher fertility rates in oil states reduced growth rate per capita.

Overall, resource-dependent economies have outperformed more diversified ones in terms of growth over the past decade, with annual growth rates of 6.5% compared with 3.8%, respectively. Yet relationships between extractive sectors and economic growth are not as straightforward as this recent record suggests. Cross-country comparisons show that natural-resource abundance (measured by reserves or production of natural resources per se is linked to positive outcomes such as long-term growth, whereas dependence on natural resources (measured as the share of natural-resource exports in total exports or the share of natural resource rents in GDP) comes with serious challenges (OECD, 2013). A large body of literature has pointed to the growth challenges associated with resource wealth and dependence, and there is now a broad consensus that resource dependence tends to undermine economic performance in the absence of sound institutions (Van der Ploeg, 2011), including as a result of local currency appreciation, delay in reforms, slower economic diversification, exacerbation of corruption, and an increase in the likelihood of armed conflict; such adverse effects being

worst in countries that have weak financial systems, are non-democratic or have presidential democratic regimes, and are already politically volatile. Yet a number of these studies used data from the 1970s to early 1990s, a period of volatile and overall declining primary commodity prices. For example, Sala-i-Martin and Subramian (2013) find fuel and minerals – whose rents are more easily appropriable by the state – to have lowered growth by about 0.36% per year for the period 1970-98.

Hence, while resource sectors are important for growth, especially for about 40 countries that continue to rely on resource rents for about 20% of their GDP, there is also a consensus that growth effects reflect the quality of institutions – and the challenges resulting from large resource rents require exceptionally strong institutions. There remains some debate about the eroding effects of resource rents on the quality of these institutions (Ross, 2014). Political elites may have few incentives to improve already weak institutions that offer them more discretion of the control of rents (Wiens, 2013), while strong institutions tend to be consolidated. There is thus a general consensus on the need to consolidate institutions ahead of resource windfalls, including both institutions of extraction supposed to maximise government take and local beneficiation and institutions of rent distribution, ensuring that revenues are allocated in the most efficient way to achieve development goals.

Corruption is expected to undermine the performance of resource sectors. Vertical forms of corruption between public and private agents can result in sub-optimal decision making over the choice of companies and plans to develop resources, cause operational delays, and promote the diversion of funds generated by the sector away from populations (Kolstad and Søreide, 2009). Horizontal forms of corruption between private agents can result in tax evasion and a preference for speculative or high-return short-term productive activities, notably to hedge against longer-term investment risks including renegotiation of contracts and possible demand for bribes (Ndikumana, 2013). These risks are well identified despite the so far limited systematic empirical evidence. Cross-national indicators assess the governance performance of resource sectors (RWI, 2013) and cross-sectoral indicators estimate the perception of relative frequency of corruption in resource sectors (TI, 2011). While no indicators directly assess (perceptions of) corruption within the detailed workings of resource sectors and effects on their growth, there is recent statistical evidence to suggest that increases in the perception of corruption positively correlate with FDI (Kolstad and Wiig, 2013). Corruption and FDI-related resource sector growth can thus co-exist, perhaps as long as corruption is not perceived as a threat to property rights sectors (Bohn and Deacon, 2000; Cust and Harding, 2013). Moreover, the distribution of massive rents generated by these sectors also

raises corruption concerns, with sub-optimal growth patterns for the host country's economy resulting from overly generous tax incentives, revenue misallocation, public graft and tax evasion.[15]

3.1. How corruption distorts sector performance

Corruption has been described as "*the* development problem in resource-rich countries, rather than just one of a number of problems" (Kolstad and Søreide 2009:214, emphasis added; see also OECD, 2008). Resource income – measured as resource rent per capita – is associated with higher levels of perceived corruption, and in turn with poor economic performance, and this relationship is stronger for extractive sectors, more so for fuel than non-fuel mineral exports (Leite and Weidmann, 2002). This association is observed only for countries with low-quality democratic institutions (Bhattacharyya and Hodler, 2010).

In contexts where governance institutions and integrity systems are weak, large resource revenues facilitate rent-seeking and patronage, potentially resulting in higher levels of corruption, diversion of time and talent from productive activities, inefficient public spending, and low political accountability. Several factors make extractive sectors prone to corruption, including high-level discretionary political control; frequent blurring of public, shareholder, and personal interests; limited competition among firms resulting in (often-complicit) behaviour; complex financial structures requiring stringent auditing and lucrative opportunities resulting from the control of resource-export channels (e.g. via exclusive export licenses) as well as the control of imported goods (e.g. exclusive import licenses) in these often highly import-dependent economies (Gillies, 2010).[16]

3.1.1. Assessing the problem

Large-scale corruption in developing countries is intimately linked to illicit financial flows (Reed and Fontana, 2011). The volumes of these flows are larger from resource-rich economies and may represent a higher level of corruption – along with other sources such as revenues from illegal resource exploitation and tax evasion (Le Billon, 2011; Africa Progress Panel, 2013). Fuel exporters accounted for nearly half of the illicit financial flows from Africa between 1970 and 2008, with Baker and Kodi (2010) stressing that "acceleration in illicit outflows was undoubtedly driven by oil price increases". Boyce and Ndikumana (2011) find a statistically significant

positive relationship between oil exports and illicit financial flows; for each extra US dollar in oil exports, they estimate that an additional 11 to 26 cents leaves the country as illicit financial flow. Andersen et al. (2013), estimate that 8-10% of oil rents from autocracies end up in tax havens, with capital flows intensifying in the year leading to elections and in armed conflicts. The World Bank collects and puts in the public domain documented cases of corruption and embezzlement through its Stolen Assets Recovery (StAR) programme: at least 21 of these cases relate to activities by extractive companies and many more to activities in resource-dependent countries such as Nigeria, Libya and the Republic of Congo.

There are several surveys of perceived corruption within the sector. Transparency International's Bribe Payers Index measures perceptions of bribe payment within a sector by senior members of the business community from some 28 countries. Extractive sectors ranked third-, second- and fourth-worst out of some 19 in 2002, 2008 and 2011, respectively. One of the most relevant corruption indicators is the Revenue Watch Institute's Resource Governance Index (RGI), which assesses the quality of oil, gas and mining sector governance in resource rich countries. RGI's 2013 report covers 58 countries accounting for about 80% of oil and copper world production. Focused on disclosure of information, the RGI provides scores for Institutional and Legal Setting; Reporting Practices; Safeguards and Quality Controls; and Enabling Environment, which includes indicators on perception of general corruption (TI) and control of general corruption (WGI). Though there is no fact-based sector level assessment of corruption, several proxies can be used to assess the risk based on the assumption that disclosure reduces such risk. These proxies include contract reporting, national extractive companies financial reporting and auditing requirements, and checks on licensing processes. Contrasting an aggregate of these proxies with WGI's control of corruption would allow for performance ranking as well as for assessing relative sector-level corruption control compared to general corruption control. Of the 41 resource-dependent countries examined by RWI, only 5 had satisfactory standards of resource governance. Resource governance indicators were lower in more resource-dependent countries, with 9 of the 15 worst performers being among the world's most resource-dependent countries. Several studies have examined the risks of distortion of the sector by corruption, mapping these at different stages of resource project cycles and revenue flows (Kolstad and Søreide, 2009, Le Billon, 2011; Al Kasim et al., 2008/2013; for details, see Table 3.1.).

Table 3.1. **Vertical corruption risks along the resource value chain**

Activity	Corruption risk
Licensing	High – undue influence over award criteria, biased access to geodata and other information, biased selection process, inclusion of unqualified equity partners, privatisation of state assets, discretionary awarding of tax incentives and waiving of signature bonuses
Exploration	Low – enforcement of investment schedule and presentation of survey results; production activities during exploration
Development	High – contract amendments, cost-recovery and production-profile plans, and sub-contracting in construction phase
Production	High – application of production regulations and contract amendments, sub-contracting, transfer mispricing, demand for "facilitation payments" and outright extortion
Trading and transportation	High – resource purchase contracts, shipment authorisation, and pipeline or oil terminal access
Refining and marketing	Medium – circumvention of price controls; informal trade channels; awarding of importing and retailing contracts
End phase	Low – decommissioning expenditures including environmental mitigation
Revenue allocation	High – embezzlement, "white elephant" projects, diversion of sovereign or stabilization funds, discretionary social payments and inefficient "populist" policies pursued for regime consolidation or electoral gains

Sources: McPherson and MacSearraigh (2007), Al-Kasim, Søreide and Williams (2008; 2013), and Kolstad and Søreide (2009), Le Billon (2011), World Bank (2014e).

3.1.2. Major governance decisions

In addition to the mentioned distortions in budget allocations across sectors and how they benefit different segments of a population, political corruption distorts governance decisions through interference in governance structure and associated institutions, as well as in the nomination of officials. Governance structure is often concentrated around the presidency, a ministry of resources, and national resource companies, with limited powers for parliament and other stakeholder groups that could demand greater transparency. The prevalence of corruption tends to concentrate governance decisions within a small group, but with a redistribution of corrupt gains throughout the relevant institutions. It will also vary according to the type of resources and modes of production involved (Snyder, 2006).

Examining the potential impacts of corruption on levels of oil production, Al Kasim et al. (2013) point out that a lack of systematic data on oil production efficiency and corruption limits empirical cross-country analysis; they further note that sub-optimal performance by the sector can occur in the absence of corruption, for example as a result of policy decisions or lack of capacity. It is thus difficult to distinguish between corruption and other explanatory effects. There are concerns, however, that corruption in sector governance can cause a bias towards "quick gains" rather than long-term growth for the resource sectors (Al Kasim et al., 2013). This occurs, for

example, in accelerated production flows for oil fields, and "cherry picking" of the most lucrative and easily accessible ore for mining or timber species for logging. These "low-hanging fruits" are picked through rapid development, often mobilising foreign production assets with little local content that leave behind reserves with low commerciality, little local benefits and socio-environmental damages. Whether such consequences are the result of corruption, or a government in dire need of quick state revenues, is rarely clear. Documentation of the consequences of corruption requires release of production-related details, including information about licenses, field development plans and post-peak-production agreements, as well as surveys of industry stakeholders; expert assessments of the relative performance of governance institutions compared to their capacity; and case-specific costs and corruption risk analysis.[17]

The World Bank has conducted a comparative analysis of 13 cases to better understand the importance of country-level institutional contexts and political incentives (Barma et al. 2012). Drawing specific recommendations for optimising rents while reducing the risk of corruption, the study presents options that are technically sound, compatible with incentives and appropriate for national capacity. Focused on fiscal policies, the study notes that simple fiscal schemes may not yield the best fiscal performance but are easier to administer and can help reduce corruption risks. Systematic analysis could use paired comparisons with similar system designs – for example, based on geographical proximity and resource rent dependence – to try to account for differences in levels of corruption, as used by David-Barrett and Okamura (2013) to test the effectiveness of the Extractive Industry Transparency Initiative.[18]

3.1.3. Sector management

Even if politics is distorted by corruption, ruling elites may well have an interest in maximising rents by increasing the efficiency of institutions of rent extraction and by minimising corruption within the ministry and national resource company, while they maximise their discretionary power over the distribution of rents, as demonstrated in the case of oil in Angola (Amundsen, 2014). As a result, rents can be maximised but very badly allocated to the benefit of a few at the expense of the larger population. However, there are also circumstances where the rent generation within the sector is inferior because of corruption, due to, for example, corrupt and incompetent personnel who distort sector performance through additional costs, delays and poor decisions, especially at the services level (e.g. customs, permitting), and by facilitating abuses including tax evasion by resource companies (Shaxson, 2007).

Bid and tender processes also face high risks if some companies pay bribes or accept to work under conditions where corruption is known to occur. This may mean that the most qualified companies are not selected on a competitive basis, thus decreasing long-term fiscal returns for governments. Joint-venture partners, often controlled by influential politicians and civil servants, may also be imposed, resulting in a conflict of interest and interfering with the governance and operations of the resource companies. Lower-level licensing and permitting can be distorted by corruption, notably resulting in wasted time and diversion of attention for management (due to the queuing effect often required to exercise extortive corruption, though in some cases corruption is perceived by industry as a means of by-passing lengthy regulatory processes), and negative socio-environmental impacts if regulations can be avoided through bribery (Le Billon, 2011).

3.1.4. *Framework conditions for business*

From a corporate perspective, the major issues have to do with the risk of increasing cost and reducing profitability, sometimes also the expropriation of production licenses. Performance is thus measured in terms of security of tenure and contractual stability, cost minimisation, respect of development and production schedule, and compliance with enforceable rules including on corrupt practices (EY, 2013).

Besides high-level contractual issues, resource industries often focus on procurement given the very high number of transactions and the risk of contractors' being politically imposed or having bribed public or private agents to secure contracts. Corruption in procurement can bring about sub-standard or more costly work, as well as accusations of conflict of interest and bribes payment. Given that much equipment needs to be imported and expatriate staff granted visas, corruption in customs is an issue: delays in clearance for refusing to pay bribes can slow development, while the payment of bribes can result in penalties. There is also a risk of misappropriation of assets through both vertical and horizontal forms of corruption, with civil servants or company employees and contractors diverting assets for their own benefit, thus resulting in additional costs, lost income operational delays, pollution, and accidents. This is particularly the case when equipment and resource products can be stolen, and when financial operations are cash-based, all of which can seriously affect project performance.

3.1.5. *FDI and PPP*

Foreign direct investment appears at first glance to be negatively correlated with perceptions of general corruption in a host country (TI, CPI), yet Kolstad and Wiig (2013) find that "increased corruption within a country

is associated with increased extractive industry FDI, but at a diminishing rate as corruption increases grow large". This finding would suggest that companies may interpret a rise in corruption – or the factors associated with such a rise – as a business opportunity, resulting in higher investment flows.

As anecdotally demonstrated by Shaxson (2007), greater corruption can indeed help resource companies secure more lucrative deals. In contrast, Cust and Harding (2013) find that improvement in institutional quality is positively correlated with increased oil drilling expenditure, notably when these institutions guarantee ownership rights (Bohn and Deacon 2000). There is as yet no quantitative study demonstrating the effects of sectoral corruption on production performance, but Al Kasim et al. (2013) conclude from a literature review and interviews with industry informants that intra-sectoral corruption is likely to reduce production, and thus the long-term growth of the sector.

Broadly interpreted, these findings suggest that rising corruption is not a deterrent to extractive-sector investment, probably as long as ownership rights are guaranteed, and this despite indications that corruption within the sector risks reducing production over the long term.

3.2. Consequences for society at large

Corruption is thus likely and potentially harmful economically given that corruption can result in sub-optimal resource production over the long term (on oil, see Al-Kasim et al., 2013) and that resource FDI is negatively correlated with non-resource FDI (Poelhekke and Van der Ploeg, 2013). There is a risk that corruption traps countries into resource dependence with diminishing returns for the producing countries. However, this longer-term effect may not be visible as resource-oriented FDI can fuel a boom in resource sectors even in a context of increased corruption. The distortive effects of corruption are especially likely in unfavourable institutional contexts.

There is much research suggesting that resource dependence exacerbates corruption, and that corruption is harmful to growth. Yet there is little research on the relationship between corruption at the sector level and macroeconomic growth. Studies have generally found strong correlations between natural resource dependence and perceptions of corruption (Treisman, 2000), which in turn is associated with reduced economic growth (Leite and Weidmann, 2002), especially for oil and minerals (Isham et al., 2005). These effects are found only when democratic institutions are weak (Bhattacharyya and Hodler, 2010, Andersen et al., 2013), especially in ethnically fractionalised societies (Hodler, 2006). Looking specifically at transparency through a Release of Information index, Williams (2010) finds that resource-rich countries are less transparent, especially for "point

resources" (e.g. oil, characterized by easily concentrated revenues). This lack of transparency – rather than resource revenues – seems, in turn, to negatively affect subsequent economic growth.

Extractive industries are particularly associated with political corruption, and as the available evidence suggests, such challenges have severe consequences, especially when they undermine the public interest through under-selling natural resource assets and distorting budget decisions. Some societies are set back significantly by the indirect consequences of neglected basic service delivery. What this review points out is that corruption also distorts sector effectiveness and the level of state revenues collected from production. Many of these operations are taking place at the highest political levels, often with the complicity of the international financial sector and particularly off-shore centres facilitating tax evasion and the anonymisation of corporate and bank account owners. This makes them difficult to be monitored and held accountable by the host-country population, therefore justifying further efforts, including by G20 governments, to increase transparency and accountability in resource contracts as well as revenue collection and allocation.

4. Utilities and infrastructure

Infrastructure is defined here to include the activities covering the provision of utilities and transport services, including the construction of facilities. Utilities include electricity, gas, telecommunications and water and sanitation. Transport includes airports, railways, roads, ports and urban transport. All of these activities include a significant construction component. Empirical research confirms infrastructure's role in economic development, especially when measured in terms of growth or productivity.[19]

Infrastructure investment seems to explain half the acceleration in growth in Sub-Saharan Africa from 2001-15, while more generally, a 1% increase in physical infrastructure stocks is found to temporarily raise GDP growth by as much as 1-2 percentage points, given data from both industrial and developing countries and controlling for a number of other relevant variables.[20] However, infrastructure tends to matter more at certain stages of development, and the impact depends on the composition of infrastructure expenditures, in particular investment in maintenance and network expansion. The direct impact of investments in the sector shrinks as countries reach their long-run per capita income, and for most OECD countries the effect of additional investment will be small; in fact, some countries may over-invest in infrastructure.[21] Moreover, the payoff to maintaining constructed facilities appears significantly higher than the payoff from many new investments.[22] For developed economies, the highest impact in recent times has been associated with telecoms investments. For instance, Roller and Waverman (2001) showed that between 1971 and 1990 this sector explained about one-third of growth in OECD countries. Czernich et al. (2011) found a 10 percentage point increase in broadband penetration raised annual per capita growth by 0.9-1.5 percentage points. However, since infrastructure, including utility provision and transport, are services with a direct impact on citizens' everyday life and opportunities to communicate easily across distance, the sector has many indirect impacts on economic growth and development as well.

4.1. How corruption distorts sector performance

One of the sector characteristics that makes infrastructure particularly prone to corruption is the frequent monopoly situation, which generates large rents for those who control the entities. Sometimes the monopoly is a

natural monopoly (i.e. defined by the nature of costs). In other settings it is artificially driven by market design or regulatory decisions adopted by the authorities.[23]

Regulation plays an important role in the sector. The characteristics of the sector will often imply government intervention to address market failures (e.g. pollution, excessive market power, safety) and social concerns (e.g. the need to serve the poor urban users or rural areas). With governments playing a significant role in the infrastructure sector, there are a plethora of opportunities to misuse authority and demand bribes. Investments in construction works are often huge, with significant reliance on public funds, and for outsiders (and voters) it is difficult to tell the correct cost of a utility construction project. However, cost-efficiency is just one out of several common concerns in the politics behind sector regulation and planning.[24] While corruption in infrastructure occurs at all levels, there are few robust indicators of the extent of the problem. The challenges are typically observed in reform processes, sector assessments, and investigations, and the evidence is primarily anecdotal. Nonetheless, we have seen significant progress on data collection over the past two decades, and for developing countries there are now more systematic efforts to collect information at the firm level for a growing number of countries. A review of the largest infrastructure projects globally found systematic planning failure, cost-overruns and inflated demand estimates in all regions. Whether such miscalculations in a given project are the result of corruption or some "optimism bias" is rarely known. However, since the failures systematically seemed to benefit "those around the table" during the planning process, it is not unreasonable to believe that in many cases the deception was deliberate (Flyvbjerg et al., 2003).[25]

Several sector-specific indicators characterise aspects of the corruption problem.[26] The various assessments of corruption in the sector reflect efforts to monitor corruption or other governance issues at three different levels: the macro/sector level, the firm level or the project level. Examples include indicators extracted from legal cases or from audits by national accounting offices (e.g. Ferraz and Finan, 2008), experimental evidence generated in the field (e.g. Olken and Baron, 2009; Sequeira, 2013), proxies generated from the benchmarking or assessment of incoherencies in public data on cost or production (e.g. from measures of the degree of inefficiency generated from benchmarking exercises for regulated companies) (e.g. Dal Bo and Rossi, 2008), assessments of inconsistencies in administrative expenditure (e.g. Olken, 2007; Reinikka and Svensson, 2006) and asset sales data incoherencies[27] and eventually, institutional assessments of cross-ownership of assets or biases in contracts equivalent to those conducted by competition agencies to identify collusion (e.g. Faccio, 2006).

While there is enough information to get a good sense of the state of matters, the following three main problems with the data should be noted: i) indicators continue to be dominated by the concerns of investors rather than by those of consumers and taxpayers; ii) key information continues to be highly confidential, including the name of firms; and iii) the information collected is not really tailored to the characteristics of the sector and fails to reflect relevant challenges. An important exception to these data-collection challenges includes efforts by the European Commission to document more systematically some dimensions of corruption in the context of public-sector procurement with and without EU financing. But most of this information is confidential and available only in a digested way to researchers, analysts and watchdogs. The same observation applies to the procurement data for all major multilateral and bilateral donor agencies, which tend to be big players in the financing of infrastructure in developing and transition economies.

When it comes to how the specific sector governance decisions and services are distorted by corruption, it is important to be aware of the difficulty of classifying distortions correctly. One concern is the distinction between political corruption and alternative power or rent-seeking games (Benitez et al., 2012). There are also sources of confusion when it comes to distinguishing corruption from other obstacles to efficient infrastructure service delivery. This is particularly the case for segments of the industry not subject to competition, especially since there might be large scope for creative accounting and manipulation of transfer pricing, as well as huge challenges due to incompetence or limited capacity of the regulators. These can be severe distortions, although not necessarily corruption per se. We can nevertheless identify the governance decisions potentially distorted by corruption across the life cycle of an infrastructure service: planning/regulation, financing, and service delivery, as discussed below.

4.1.1. Planning, regulation and privatisation

Infrastructure planning and regulatory functions were redesigned in many countries in the 1990s and 2000s. Sector regulation intended to promote market mechanisms is now widely seen as the responsibility of new institutions, separated from the sector ministry, and key decisions, including in planning, regulating, and investment – which are highly exposed to corruption – are supposed to be made independently of ad hoc political interference.[28] In practice, however, no institutional arrangement offers a guarantee against corruption in this sector. Ministries tend to keep their discretionary powers despite such institutional barriers, while at the local level, firms and other groups often find capture even easier if political competition and controls are weaker.

Investment processes are particularly exposed to such interference and often found biased towards the private sector (i.e. *state capture*). This has proved to be a significant risk in utilities and transport – including influence ex ante on the design of the market structure as well as ex post influence within a given market and legal framework. Whether corruption explains the bias is usually uncertain. However, the Business Environment and Enterprise Performance Survey (BEEPS), which covered 4 000 firms in 22 transition countries, provides information about firms' expenses in various forms of bribery (Hellman et al., 2000). Analysis of these data suggests that construction firms pay considerably more than the average firm in bribes, often with a focus on bypassing regulation and obtaining government contracts (Kenny, 2007).

Generally the literature finds corruption in utility sector regulation to increase prices, costs and profits margins and restrict potential entry in the market. The effects of corruption on quality and output level and their effects on equity are less predictable since corruption can result in both over- and undersupply of quantity and quality.[29] Privatisation is another process especially exposed to political interference (and often corruption), especially since assets are often sold with their monopoly power well intact – resulting in private-sector oligopolists and profits well secured for the owners.[30] Assessments of privatisation and market reform in general should focus on the resulting sector performance indicators (prices, access, quality), not the performance of privatized firms – which sometimes continue a position as subsidized "national champions" despite the private ownership.[31]

4.1.2. *Financing the sector and audits*

A second area of risk is financing – which seems to be the least studied and least understood of the stages in terms of its potential source of corruption in the industry. A systematic review conducted by those involved in the CoST (Construction Sector Transparency) initiative found that half of 42 public-procurement entities surveyed never disclosed public-investment decisions at all.[32] Opaque arrangements may cover corrupt strategies raising costs to users.

For the private sector, creative accounting allows regulated companies to inflate costs or optimise cost allocation rules between regulated and non-regulated parts of an industry when costs are hard to monitor by regulators.[33] Although this problem is found in any industry in which there is scope for internal cross-subsidies, few countries have adopted specific accounting guidelines for their regulated industries.[34] Accounting rules thus define what is controllable and the space for distortions.

The question of corruption is primarily associated with influence on decision-makers for bending, violating or reformulating accounting and transparency rules, or for controllers of various sorts to condone manipulations. In current systems, the potential consequences of cost "gaming" among infrastructure providers is relatively large, possibly larger than in many other industries, while accounting incompetence (and failure to introduce proper controls) can easily excuse or cover corruption on this area. For these different reasons it is important that anti-corruption control begins with analysis of sector performance and the reasons behind observed performance weaknesses in institutional arrangements, and not primarily (or only) procedure control.

4.1.3. Procurement and construction

When it comes to procurement, the mechanics of corruption are simpler since they boil down to inflating cost and somehow sharing the cost mark-up, while the victims tend to be users, taxpayers and excluded potential entrants. Upon bribes, contracts are tailored to suit a particular firm or over-designed to increase consultants' fees and contractors' profits. A substantial share of contractors reports that they pay bribes to win tenders, and there are numerous ways of making it look like as if all procurement procedures have been respected.[35] In addition, infrastructure contracting is often challenged by a combination of corruption and cartel collaboration between bidders (Lambert-Mogliansky, 2011; World Bank, 2011a), a risk that has been confirmed several times, for example in African road projects.

However, procurement-related manipulations does not necessarily take place at the auction stage. Not only the tender criteria, but the whole acquisition may be influenced by a corrupt deal that has taken place far ahead of the tender – resulting in manipulation of a whole set of parameters that not only steers the contract towards a specific entrepreneur (often with partly hidden ownership), but also secures the entrepreneur an inflated profit. A significant challenge ex post tender is the renegotiation of contracts, sometimes made possible by help of corruption.[36] Once the project is started, corruption may help secure profit on the contract by reducing the quality of the construction or skip some of the commitments.[37] Another area which would require further analysis is the emerging practice of "offset" in international contract. Offsets are a counter-trade mechanism agreed between purchasing governments and supplying companies requiring them to put in place a number of additional investments, often unconnected to the main contract, as a condition of undertaking it.[38] This practice is especially common in defence contracts, but increasingly also in infrastructure and extractive industries. How and to what extent these offsets are used to cover a corrupt deal is a question in need of more research.

4.1.4. *Service delivery*

The final stage is the actual delivery of the service. This is where perception indicators and surveys collect most of the evidence of corruption in utilities. The World Bank Enterprise Survey, for example, provides information about the percentage of firms facing demand for various facilitation payments, including for utility service provision. According to the most recent figures, the share of firms "expected to give gifts to get an electrical connection" is 34% in the Middle East and North Africa. In several countries (in several regions) the figure exceeds 50%. When it comes to bribes demanded for providing access to water, firms' expectations are similar.

4.1.5. *Implications of corruption for FDI and PPPs*

According to the FDI literature[39] there is a widespread conviction that corruption hampers FDI, but due to a general lack of sector-specific data on FDI it is difficult to draw definite conclusions for infrastructure. According to Fung et al. (2011), corruption generally reduces prospects for FDI in the sector by hampering competition and increasing user-prices or subsidy requirements. Moreover, a World Bank study of PPP in the power sector finds corruption and the degree of democracy to matter primarily to investors' decision to *enter* a market, not the subsequent level of investment – which may indicate that the investors are somewhat protected against such risks once they do invest (Vagliasindi, 2013:xix).

4.2. Consequences for society at large

In terms of providing basis for policy priorities, it seems that corruption hampers this sector primarily through distorted competition and market regulation (often combined with expensive subsidies). This is a challenge across all regions, OECD countries included (Estache, 2011), often resulting in network services and constructions that are more expensive or costly (for taxpayers) than they need to be. Evidence suggests that if corruption slows down investment in infrastructure, it i) slows growth; ii) slows the reduction of access barriers for those who still lack access; slows the adoption of new technologies, including those with desirable environmental payoffs, and iii) penalises the poor more than any other income class.

Countries can enhance the development impact of infrastructure by strengthening integrity mechanisms. This is especially the case when it comes to procurement practices, independent regulation and competition control, as well as the introduction of international accounting rules designed for regulated public services and targeted at challenges related to cost accounting, cost allocation and transfer pricing.

However, since corruption in the sector tends to involve decision-making authorities at several levels (including sub-sovereign), the sector is likely to benefit significantly from a strengthening of formal accountability systems more generally. Political checks and balances can therefore be essential for securing cost-efficient infrastructure, as are an independent judiciary and a criminal justice system with capacity to investigate corruption – thus increasing the chance of being detected and held responsible whatever the level of governance. Moreover, inclusive multi-stakeholder approaches to monitor the sector including regulators, operators, users and civil society organisations (like the CoST initiative in construction) may play an important role in strengthening the general demand for accountability in sector governance and regulation.

5. Health

Health is one of the main sectors of the economy in OECD countries, accounting for 9.3% of GDP in 2011. How much a country spends on health is the single most important factor in health outcomes and investing in health increases long term GDP growth.40 A World Bank World Development Report from 1993 stressed the relationship between health expenditures and economic prosperity: if finance ministers allocated resources towards cost-effective interventions for high-burden diseases, countries would see improvements in the public health which could then stimulate economic development (World Bank, 1993). This argument has later been supported with empirical evidence, documenting the mechanisms by which health leads to economic development, including labour productivity (healthier workers are more productive), educational attainment (healthier children do better in school; higher educational attainment leads to skill development, greater productivity, and higher income), investment (healthier people save more), access to natural resources (public health interventions to control endemic diseases can increase access to land or other resources), and ratio of workers to dependents (lower child mortality leads to lower fertility, an increased ratio of workers to dependents, and higher GDP per head).[41] New data supporting the conclusion that health improvements boost income are found in the Lancet Commission's Global Health 2035 report which claims that annual reduction in mortality accounts for about 11% of recent economic growth in low-income and middle-income countries as measured in their national income accounts.[42] The importance of health to GDP differs across regions, and this reflects how the marginal impact of reform decreases in economic development.[43]

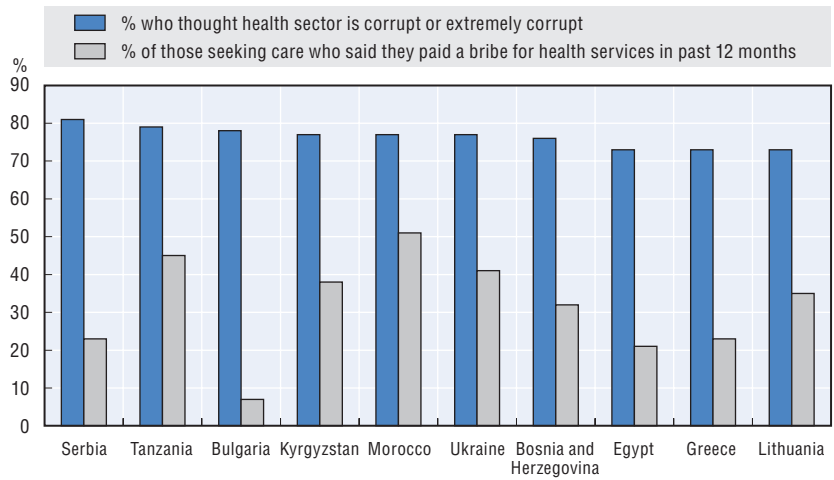
5.1. How corruption distorts sector performance

Corruption distorts the provision of health sector services by weakening service delivery, human-resources management, medicines and technologies-supply systems, financing and resource allocation, and information management (World Health Organization, 2007). Health care systems are vulnerable to various forms of power abuse given information asymmetries between providers and patients, the relatively inelastic demand for services and the complexity of health systems, as well as the involvement of many public and private providers and payers.

A European Commission study from 2013 developed a typology of six main types of abuse: bribery in medical service delivery (informal payments), procurement corruption, improper marketing relations (generally between physicians and industry), misuse of high-level positions, undue reimbursement claims (insurance fraud), and fraud and embezzlement of medicine and medical devices.[44] As in all sectors, the extent of these challenges is difficult to distinguish and quantify.[45] Much of the published data on health sector corruption is based on perceptions-based surveys or self-reported informal payments to doctors or nurses and, as discussed, there are weaknesses associated with such results. Cross-country comparisons of sector-specific perceived corruption and reported payments are nevertheless useful. See for example Figure 5.1., derived from data from Transparency International's Global Corruption Barometer 2013, which lists countries where more than 70% of the population considers the health sector corrupt or extremely corrupt, while in several countries as much as 30-50% of those who have consulted service providers in the most recent year have paid a bribe.[46]

In what follows we discuss corruption-related challenges relating to planning and budgeting, procurement and service delivery; areas where the corruption-related mechanisms at play and their solutions differ substantially.

Figure 5.1. **Top 10 countries based on perception of corruption in the health sector**



Source: Authors, using data from Transparency International Global Corruption Barometer, 2013. Note that 80% of Albanians and 75% of Russians surveyed thought the health sector was corrupt or extremely corrupt, but data were missing on the percentage who said they had paid a bribe when accessing health services, so these are omitted from figure.

5.1.1. *Planning and budgeting*

Multiple studies find correlations between perceived levels of corruption and the amount of funding available for health programmes and services. The immediate effect of corruption is likely to raise costs through inflated prices and volumes of health services and/or reduce the effectiveness of health spending by leading to misallocations. In practice, high levels of perceived corruption are associated with lower spending on social services, including both health and education, which in turn can undermine social welfare and trust.[47]

A study by the Hertie School of Governance in Berlin found that the most corrupt European countries spend significantly less on health: state insurance funds are insufficient to cover the needs of populations, and health staff is underpaid, resulting in greater demand by providers for informal payments from patients (Mungiu-Pippidi, 2013). In European countries, where the health sector accounts for between 3% and 11% of GDP, one study estimated that the annual cost of corruption in this sector was about EUR 56 billion, or EUR 80 million per day (European Commission, 2011).[48] Delavallade (2006) estimated the effect of a country's perceived corruption level on the national budget allocation to health for 64 countries between 1996 and 2001. She finds that a one point decrease in the World Bank Corruption index (higher corruption) translates into a decrease of 1.5% -2.4% of the health expenditures in the national budgets.

However, whether reduced health allocations can be explained by political corruption (i.e. corrupt politicians benefit more from other sectors) or administrative corruption (i.e. fewer funds are allocated to the sector since corruption reduced the marginal value of sector allocations) is not clear, and the reasons for low health allocations differ across countries perceived to have severe corruption-related challenges.

5.1.2. *Acquisitions and procurement*

While political corruption reduces overall budget allocations to health, bureaucratic corruption tends to increase the share of available funds spent on procurement.[49] Corruption can distort the quantities and types of inputs selected or purchased (including staff, medicines and medical equipment).

In Colombia, one study of health sector procurement estimated that about 11% of costs could have been saved if proper public tendering rules had been followed (Giedion et al., 2001). Corruption in the acquisition of medicines was found to cause non-availability of certain medicines, substandard quality and inflated public procurement prices. Drugs tend to be a commonly leaked product from public facilities because they can be sold in the private market.[50] For example, the average leakage rate in Uganda for drugs was

estimated at 73%, ranging from 40-95% across 10 public facilities, with drugs used to treat malaria being the least available to patients due to internal theft (McPake et al., 1999). The leakage itself might fall under the category of fraud or embezzlement, rather than corruption. It is difficult to discern whether the cause of drug leakage is poor logistics management, limited oversight, graft, or a combination of these factors. However, the substantial amounts involved in some of the cases investigated, while consequences have been condoned, may suggest some substantial management failure involving a network of allies who benefit personally.[51] In Nigeria, Papua New Guinea, Rwanda, and Senegal there is evidence of leakage, but neither the levels nor the sources of the problem have been determined (Lewis, 2006). A study in Argentina, Bolivia, Colombia, and Venezuela showed great irregularities with respect to purchase prices of commonly stocked medical supplies. Overpayment for supplies in public hospitals pointed to corruption, though it could not be determined with certainty given the general mismanagement in procurement systems (DiTella and Savedoff, 2001).

Analysis of 39 state procurement tenders for HIV and TB medications in Ukraine revealed several ways in which corruption affected purchasing.[52] Corruption pathways included companies with the same beneficial ownership competing with each other, direct collusion prior to submitting bids, inflated benchmark prices, shell corporations and offshore bank accounts. These practices resulted in inflated prices paid for medicines that were not delivered in sufficient quantities or in a timely manner.

Another consequence of corruption in the pharmaceutical sector is the infiltration of substandard, falsified, fake and counterfeit medicines into markets. Twenty-five major pharmaceutical companies found substandard or falsified drugs sold in 124 countries in 2011 (Institute of Medicine, 2013). Substandard or falsified medicines cause treatment failure and can be a cause of mortality in low- and middle-income countries, including deaths attributed to fake drugs and vaccines in Cambodia, China, Haiti, India, and Niger (World Bank, 2014a). Sub-therapeutic doses of medicines allow the growth of resistant organisms leading to drug-resistant infections such as tuberculosis, malaria, and staphylococcus.

The root cause of substandard medicine is poor manufacturing procedures, while the root cause of fake drugs is crime and corruption. Both problems are facilitated by lax regulation, which may be influenced by bribes. A recent report suggests that “complicit government officials are often bribed with revenue from underground pharmaceutical business [and] criminal executives may be embedded in the government hierarchy” (Institute of Medicine, 2013). Price transparency tools can shed light on possible corruption in procurement. Between 2002 and 2006, one research team analysed 5 000 country-level procurements of HIV/AIDS drugs totalling

USD 250 million (Waning and Vian, 2008). They identified 80 procurements with high price outliers, meaning that public procurement agencies paid prices much higher than the international average, possibly indicating bribes or collusion. For example, the median price paid for nevirapine was USD 0.13, but prices ranged as high as USD 3.43 to USD 7.14 per tablet. While there might other causes for the price differences, the outliers indicate areas with higher risk of corruption.[53]

5.1.3. *Service delivery*

Corruption influences whether services are delivered at all, and the quality of those services and several analyses have related corruption to child mortality and other health outcomes. In these studies corruption is often measured using World Bank governance indicators or perception-based indicators. Using data from 136 UN member countries from 2008, one team of researchers found that the more corrupt a country was perceived to be, the stronger the association with increased rates of infant, child, and maternal mortality (Muldoon et al., 2011). Another study assessed the impact of corruption on the global child mortality rate after adjusting for health expenditure, sanitation levels, dependency ratio, climate and other factors. The authors found a significant association between perceived corruption and child death rates and estimated that 1.6% of world deaths in children, or 140 000 child deaths per year, could be indirectly attributed to corruption (Hanf et al., 2011).

Such correlations between poor health outcomes and corruption could be direct (i.e. corruption affects service delivery) or indirect (i.e. corruption flourishes in environments where governance is poor, and poor governance leads to inefficient and ineffective health care service delivery). Some studies have attempted to map the influence of corruption more precisely. Hanf et al. (2013) concluded that corruption's immediate and delayed effect on child mortality was caused by disrupting access to and quality of health care systems and national health investments. In a study of the effect of corruption on health outcomes in 80 randomly selected municipalities in Philippines, Azfar (2005) found a significant and clear effect of corruption on knowledge of required immunisations by physicians. Since this knowledge had a clear association with health outcomes, the authors concluded that corruption undermines the delivery of health services in the Philippines. Moreover, in data from 64 countries, the presence of bribery (as measured in the Global Corruption Barometer) was positively correlated to death rates for women giving birth, even after adjusting for *per capita* income and share of total spending on health in the country (Fagan, 2010).

Embezzlement and absenteeism are not corruption per se, but very often, they are associated with an environment where corruption is a problem – possibly because a bribe has made it possible to steal funds or stay away from work without facing sanctions.[54] For example, a study in Honduras found that absenteeism in the health sector can be quite common (26%) across all staff categories (Reinikka and Svensson, 2006) while an analysis of absenteeism in rural health clinics in Bangladesh found that on average, 42% of physicians and 35% of other staff were absent across the 60 clinics visited (Chaudhury and Hammer, 2004); whether corruption explains these findings is not clear. Several studies have quantified the share of "ghosts" on payroll, that is, the percentage of health workers who are receiving a salary but who are not working in the system, or salaries paid to non-existent people (Varpilah et al., 2011). For example, one survey in Honduras found that 8.3% of general practitioners on payroll in 2000 were ghosts (World Bank, 2001). A similar effort in Liberia's education sector resulted in removal of 1 077 ghost workers for a savings of USD 1.8 million per year (World Bank, 2014b). In transferring hospital management authority from the Health Ministry to the Nairobi county government, the Kenyan government identified 2 170 ghost workers or nearly half the payroll (Nzioka, 2013).

Given the literature reviewed, it is difficult to disentangle the underlying causes of leakage and absenteeism. Pharmaceutical companies (and more recently, medical-device providers) have long engaged in practices to persuade physicians to provide their products to patients. This can be a benign or even beneficial practice: doctors may not be aware of the benefits of new products. On the other hand, the practice can slip over the line between ethical and unethical practice. Direct payments to doctors to prescribe the drugs of a particular company are usually illegal – though high-profile accusations of such behaviour continue to be made in some G20 countries, as illustrated by the recent investigations in China and in the countries of origin of the companies. Rewarding physicians who switch patients onto particular drugs through indirect payments for "hospitality" or "professional development" may result in more expensive or less effective medical care. Many countries have reviewed the boundaries of acceptable practice to outlaw such interactions, though new methods of exploiting loopholes continue to be developed.

Moreover, the demands for informal payments create financial barriers to service use and put citizens at risk for *catastrophic payments* (defined as payments exceeding 40% of income after subsistence needs are met) and subsequent impoverishment (Kutzin, 2013). Despite the essential importance of health services, most studies have found that the use of services falls when fees (formal or informal) are charged (Palmer et al., 2004). The demand for informal payments is also associated with higher infant, child, and maternal

mortality (Muldoon et al., 2011). Rates of informal payment vary by country as shown earlier in Figure 5.1. (Lewis, 2007).[55] A 2009 report by Amnesty International estimated that a thousand women die of complications of pregnancy and childbirth per year in Burkina Faso, in part due to lack of financial access to care. Families are being charged significant sums for medicines and medical services that should be free of charge subsidised according to government policy. This means that patients either do not seek care, delay care, or do not get the care they need due to financial barriers. Another study by the Human Rights Law Network found that maternal deaths in the central Indian state of Madhya Pradesh are significantly influenced by corruption in the public health system (World Bank, 2014a).

5.1.4. *Foreign direct investment*

FDI in service sectors has been growing over the last 15 years. This trend affects the health sector primarily in countries in which the private sector plays a large role in service delivery, but so far, the level of investments is very modest. The vehicle for FDI in the health sector is most typically through multinational corporations, and the common pattern of foreign participation is to invest in existing hospitals or specialised clinics or enter a joint venture with local partners (Outreville, 2007; Lunt et al. 2011). Although there is a paucity of evidence on the impact of FDI on the health sector specifically, one study found the determinants of FDI by the largest multinational corporations to resemble those in other sectors, including cultural distance, country risk, governance, level of socioeconomic development and the availability of quality inputs (Outreville, 2007). Moreover, studies have shown that inflows of FDI are strongly and positively influenced by population health (Alsan et al. 2006; CMH, 2001).

Since corruption is associated with poorer health outcomes, as discussed, this may be a factor driving down FDI in some countries. Moreover, health affects FDI because healthy workers are more productive, which attracts foreign companies seeking a long-term investment opportunity. In addition, where health infrastructure is lacking, a foreign firm may face the additional cost of building a parallel health-care system for its workers, which eats into profits and makes investment less desirable.

Public-private partnerships are applied as a vehicle for FDI in health care.[56] The healthcare PPP's contractual agreement creates a level of accountability in cost management that may be otherwise difficult to achieve when the government is both the purchaser and the provider of care (Sekhri et al., 2011). While there are no studies to date which link PPP performance and corruption in this sector, PPP options can be part of a solution if the risk of

corruption in government institutions is perceived high, implicitly assuming that political corruption will not distort the selected model or general sector oversight (Marriot, 2014).

5.2. Consequences for society at large

This section has listed strong evidence showing that improving the health of populations is instrumental to increasing economic growth and development. Health is one of the sectors with the highest impact on countries' economic growth, especially in the longer term. We then reviewed results linking corruption practices and poor health outcomes. At the highest political level, corruption affects health by changing government allocation of funding. Cuts in spending weaken the health systems building blocks and, in turn, allows for more abuse of power.

We also noted that in some instances, highly ranked officials are involved in the counterfeit drugs trade. That trade is recognised as an increasingly damaging issue worldwide. The network of persons involved, sometimes including civil servants, indicates some form of corruption, but in most of the studies conducted, the exact distortions have not been identified. At the sector management level, we drew attention to the importance of i) corruption in public procurement in many countries, ii) drug leakages, iii) overpayment for public hospital supplies and iv) absenteeism and ghost workers. In addition, the relatively inelastic demand for health services makes them particularly prone to extortive corruption (in this setting; demand for facilitation payments). For many citizens, the demand for extra payments is the biggest challenge associated with the health sector, but this is also where governments find the "low-hanging fruits" in terms of anti-corruption achievements.

Overall, the literature on corruption in the health sector paints a dire picture, with challenges at all levels of sector governance and with examples of distortions in all categories of countries. The immediate consequences are dramatic, and corruption is thought to have direct effects on children and mothers' mortality rates, in addition to the consequences to the overall economic performance in primarily low-and middle-income countries.

6. Education

The impact of government spending on education on GDP growth has been demonstrated by several macro-economic studies. Allocating an additional 1% of GDP to education is found to increase the rate of potential annual growth by a mere 0.07 percentage point. Even though the effect may be lower than for other types of public spending in the short run, over a longer period the effects of education on growth accumulate, reaching as much as 20% of GDP (Barbiero and Cournède, 2013). It is also estimated that an increase in the average educational attainment of a country's population by one year increases GDP per capita by 1% in the long run, and this effect is likely to be stronger in countries where the population starts with less than 10 years of schooling on average. In the case of China, the rapid increase in the labour force's average years of schooling since the early 1990s may have added half a percentage point to annual growth in GDP per capita over the past decade (Johansson et al., 2013). In Latin America, it is claimed that the increased number of years adults have spent at school (from 3.6 in 1965 to 7.5 in 2005) contributed to two-thirds of the average annual growth rate of 2.8% in GDP per capita between 2005 and 2010 (UNESCO, 2013).

The impact of education on growth helps explain differences in growth rates among regions. Considering Asia and Africa in the period 1965-2010, for instance, the average number of years of schooling was 2.7 years higher in East Asia and the Pacific than in sub-Saharan Africa, whereas average annual growth in income per capita was 3.4% in East Asia and the Pacific but only 0.8% in sub-Saharan Africa. The initial difference in the average duration of schooling could explain approximately half of the difference in growth rates, according to UNESCO (2013). All of these estimates rest on the assumption that the quality of spending in education is maintained proportionally as its amount increases and that public authorities show an interest in the issue of equity: to provide all students with the same opportunities.

6.1. How corruption distorts sector performance

The listed macroeconomic empirical evidence on the sector's economic importance is largely supported by studies of education, including the micro-level mechanisms.[57] Transparency International's (TI) Global Corruption Barometer (GCB) measures the perceived extent of corruption specifically in the education sector. According to the 2013 report, the average score obtained

by education institutions was 3.2 on a scale of 1 to 5, where 1 means "not at all corrupt" and 5 "extremely corrupt". According to these results, obtained in 2013 across 95 countries, 16% of the people declared that they had paid a bribe in education (versus 13% in utilities, 15% in tax, 17% in medical, and 31% in police) – a figure that reflects bureaucratic corruption in service delivery and does not necessarily capture political corruption (Transparency International, 2013).[58] Le Van and Maurel (2007) analyse the relationship between education, perceived corruption and economic growth in developing countries. They logged economic growth variables between 1960 and 1996 against governance indicators developed by the World Bank and found that corruption decreased the returns on education, though there also appears to be a threshold level of GDP per capita below which bad governance has no discernible effect.

The quality of educational outcomes derives not only from the amount of resources invested, however, but also from the way they are distributed and the evaluation and assessment mechanisms built into education systems. According to a recent OECD report, "[C]orrupt schools and universities hinder prosperity, cause long-term damage to societies and raise the cost of education at the expense of equity and quality."[59] A further indirect consequence with potential macro-economic implications is the effect on work ethics. In a society where dishonesty and corruption are rewarded (as opposed to a merit-based system), the ethical cost of corruption is higher in education than for any other public service. As a result of such a system, the younger generation can develop cynicism and discouragement that translates into lack of trust in the government and, consequently, a lack of civic and political participation. Both of these outcomes undermine the basic principles of democracy, which is found to have a positive impact on economic performance (Feng, 2003; Knutsen, 2013).[60]

There can be two-way causalities between macroeconomic growth and corruption at the sector level, however. According to a USAID study on Europe and Eurasia, the overall economic decline experienced by the countries in these regions contributed not only

> … to the deterioration of the education systems, but also provided increased opportunities and/or lower opportunity costs for engaging in corrupt practices. The steady decline of GDP during the 1990s resulted in a drastic reduction of financial resources channelled to the education sector. The sector was ill-prepared to cope with the dropping of government financing and, the consequent decrease in teacher salaries. In order to compensate for these inequities, Ministry of Education officials, as well as university administrators, professors, regional managerial staff, school directors and teachers, were forced to seek other opportunities to supplement their incomes. (USAID, 2005)

While in-depth studies are required to quantify the impact of corrupt practices on access, quality and equity, there are few obvious approaches to assessing corruption in the sector. This is an area where objective assessments can be conducted. So far studies have been conducted to calculate the leakage of resources between the central ministry of education and schools, or to assess school performance.[61] These different indicators do not cover all types of malpractice that exist in the sector, and all forms of malpractice observed are not corruption, but they give a good picture of integrity challenges in the sector.[62]

While there are few clear-cut generalizable results on corruption in education, documented experiences illustrate patterns of distortion in sector performance. We can distinguish among corrupt practices that come about during *policy decisions* (corresponding to general policy and long-term orientations), *management decisions* (whose scope is less broad and whose effects require less time) and *service delivery decisions* (which can be defined as common daily decisions, limited in scope) (Hallak and Poisson, 2002). Decisions potentially distorted by corruption include capital investment; budget allocations; specific allowances and fellowships; school location; school construction; teacher recruitment; promotion and training; the purchase and distribution of equipment, textbooks, materials and food; school and university enrolment; examinations and diplomas; accreditation of programmes and institutions; and private-school licensing. Dysfunctions in these domains can be related to weak capacities of governance, but they can also be related to well-identified corrupt practices, as illustrated in the examples below.

6.1.1. Policy decisions and budgeting

Political corruption is found to harm the education sector primarily in terms of reduced political commitment and lower allocations of public resources. From the political level to sector administration, corruption channels government expenses towards less productive activities; thus, the greater the government expenses, the greater the negative effects of corruption (Delavallade 2006; Mendez and Sepulveda, 2006). This is all the more true for the education sector, which represents in most countries the largest or second-largest share of the public budget, and employs a significant share of civil servants and skilled workers. Policy decisions are affected by corruption in different ways, including the allocation of resources to certain schools, construction work, the allocation of important positions and sector regulation more generally. As in the health sector, there are distortions due to tight connections and networks of allies, although it is difficult to determine whether they are caused by corruption. For example, in some countries, teacher unions are seen as a political vehicle because they are well-organised

and reach into every small community and often wield influence over pupils and their families, while they are also responsible for organising election polls in school premises. Citizens sometimes perceive such networks as a device for corrupt politics. Similarly, a politicised process of appointments of school principals and teachers in Kosovo (Serbia) is said to have a detrimental effect on the overall performance of the education system (MEST, 2013).

Management decisions affected by corruption could be related to collecting illegal fees for school admission or exams, showing favouritism and nepotism in the recruitment of teachers (including the appointment of former civil servants as "ghost teachers" after an election resulting in regime change), ignoring school mapping criteria to locate a university in an unjustified area, contracting corrupt textbook publishers through irregular bidding processes, forcing students to purchase unnecessary materials copyrighted by instructors, etc. Numerous studies confirm that corruption is part of such challenges with distortive consequences on equity, access, quality and overall efficiency. In the case of Pakistan, the existence of thousands of ghost schools (13 000 according to the 2005 National Education Census and 30 000, according to media reports) reduces educational opportunities for thousands of children (Save the Children UK, 2010). A quarter of school supplies never reach schools in Burkina Faso (in 2010-11, 26% of school supplies; 24% of didactic materials; and 35% of specific materials such as chalk, paper, rulers or glue), and this is found to have detrimental impact on the learning process (Oubda, 2013). Several tracking surveys prove that the capture of funds between central and frontline service delivery levels is more likely to affect the poorest schools: in the case of Uganda, a 10% increase in household income increased the amount of public funding reaching the school by 3 percentage points (Reinikka and Smith, 2004). In Colombia, a reform consisting of the reduction of distorted practices in teacher management in the city of Bogotá made it possible to serve 120 000 additional pupils without an additional recruitment of teachers, due to the redeployment of existing staff (Peña, 2005) – thus demonstrating the impact of corruption on efficiency.

6.1.2. Service provision

Examples of corruption in service delivery and operational decisions typically include inflated enrolment figures to augment resources for the school, recruitment of teachers on the basis of fake credentials and diplomas, teachers not teaching the whole curriculum to impose paid private tutoring, unauthorised deductions from teachers' salaries by education officials or bribing of accrediting agencies to obtain a license (Hallak and Poisson, 2006). Teacher absenteeism is well-documented, especially after a survey from 2004 found that one-third of teachers in Assam, Bihar, and Punjab (India) were absent on any given school day (Kremer et al., 2004). A systematic

review in Sierra Leone in 2011, for example, resulted in the disclosure of more than 5 000 ghost teachers (Poisson, 2014). Given the share of teacher salaries in the education budget at the primary-education level (usually above 90%), 20% ghost teachers means 18% fewer pupils trained. This is particularly significant for technical and vocational training and higher education, which have both a direct effect on the supply of semi-skilled and skilled workers for the labour market. The problem of ghost teachers may have severe indirect consequences since teachers who do not show up, or even who arrive late, are arguably unfit for teaching universal values (civic education, moral values, honesty, integrity, etc.). Simple anti-corruption policies have been found to curb such cases of malpractice. A case worth noting concerns the decision of the government of Uganda in 1997 to start publishing its monthly disbursements to schools in national newspapers, so that parents, teachers and headmasters could better monitor the administration. As a result of this decision, financial leakages in the education sector fell from 87% to 13% (Reinikka and Svensson, 2006), and school enrolment increased substantially around the country (Reinikka and Svensson, 2011).

6.1.3. *International players*

While FDI in education rarely reaches substantial amounts, it is growing in higher education in a number of countries. Accreditation, evaluation and licensing processes should include foreign providers. Besides, the sector's performance matters to the overall benefit of FDI in other sectors. FDI is known to produce the most positive effects on growth when it has strong externalities and spillovers in terms of technology transfers. The adoption of new technologies and methods employed by foreign-owned companies (for example, via local content requirements) is facilitated if the general education level in the recipient country is sufficiently high.

So far, however, the role of foreign players in the sector has generally been more important when it comes to their impact on educational services, including how results are compared across countries, how development partners collaborate with governments and finance international nongovernmental organisations to strengthen the sector and, potentially, what conditionalities are placed on development aid and lending for the improvement of sector performance.

6.2. Consequences for society at large

The international community recognises corruption as a major obstacle to achieving both the Millennium Development Goals and the Sustainable Development Goals as well as the Education for All Goals. According to the Global Corruption Barometer, education is not among the most corrupt public

sectors. Studies focussing specifically on education, however, demonstrate that not only is corruption a significant obstacle to development, it also affects the overall performance of the sector in developed and developing countries alike, even if not to the same extent.[63]

It has been estimated that developing countries could improve their Gross National Product (GNP) per capita by 5% if they were to base their leadership upon (true) qualifications, as opposed to gender, social status or contacts (Hallak and Poisson, 2007). Among the listed factors linking corruption in education to economic growth are the lower value for money in terms of inefficient use of public resources and fewer people trained given the amount of resources. A lower level of qualifications and performance of workers affect productivity.[64] The poor are often the first victims of corrupt practices in the education sector since for them the illegal fees, bribes for promotion to the next grade or to obtain a diploma, etc., are a heavy burden that lead many to drop out of school. Corruption thus tends to increase social inequality. Distorted distribution of certificated merit can have pervasive effects on the labour market and development: corruption in education not only contributes to the preparation of unqualified young professionals, but distorts also recruitment processes to influential positions in society.

As in the health sector, corruption at the political level in education is globally associated with lower public investment in the sector. When it comes to the spending of the budget allocated, the most serious distortions are associated with leakages of public funds, ghost schools and teachers, and widespread absenteeism in some regions of the world. The extent to which these forms of mismanagement reflect corruption is not sufficiently documented. The various forms of fraud and embezzlement may have indirect effects on competence levels and youth work ethics. Indirectly, these distortions reduce a country's ability to benefit from FDI in other sectors and prevent them from developing competitive industries. A well-functioning education system is also essential to sustain anti-corruption initiatives and institutional reform more generally.

7. Sector challenges and policy considerations

The sector reviews below disclose numerous circumstances of corruption with unique distortions, while there are also similarities across the sectors. Some observations are summarized here, regarding first the sector specific distortions, then cross-cutting challenges and, eventually, some policy considerations.

7.1. Distortions at the sector level

Across the sector reviews we have sought to understand how political corruption affects the various sectors differently while, clearly, such overarching dysfunctions is a major development challenge whatever the sector. When it comes to accountability problems in the state bureaucracy for sector oversight, control and the implementation of various policies, we see a plethora of exposed decisions combined with a difficulty of identifying who is really responsible. For either form of corruption it has become clear that distortive consequences depend on how the corruption alters decisions and practices.

Consider corruption in the forms of an *extra informal price* – for example, children who can attend their class even if some of the teacher's salary is paid informally, or firms that "have to" make an extra payment to get connected to electricity. They do get connected, the children get some schooling, and the extra payments could just as well have been a higher formal price. On a low scale, the distortive consequences of this corruption is limited. In larger scales and/or with large payments, however, it may keep poor children out of school and families without electricity. Bribes demanded for services that should have been offered free of charge or at a low cost are more distortive i) the less predictable they are, ii) the larger the bribe payments and iii) the more they affect service provision – including what happens to those who do not get the services because of the corruption.

If payment means preferential treatment *at the expense of* others, the corruption distorts an allocation mechanism, which is a different type of consequence compared with the price effect. This distortion depends on the civil servant's authority: how much authority and controlled by whom. It also depends on how easily the unfair allocation of s ervices can be observed and whether witnesses have a place where they can report the crime. In some

"monopoly situations" (i.e. the only person who determines applications for construction, for example), the civil servant can "demand the whole supply curve" in terms of the size of the bribe payment, especially if the demand for the given service is sufficiently *inelastic*. For example, a person with a severe illness may pay whatever is requested to get the necessary treatment. Likewise, the more sunk investments a company has made in its attempt to enter a market, the more it might be willing to pay informally (and illegally) to make its business endeavours succeed.

In this study we have found corruption to be causing *higher prices* in all the sectors: higher prices for medicine, health services, textbooks, utility services and infrastructure, with extra payments on import of inputs needed for petroleum production or mining. At first sight, the consequences resemble the microeconomic impacts of a higher formal price or a tax on market players and citizens. However, the mere fact that officials collect bribes, which may accumulate to large sums for those involved even if each single bribe is small, reflects serious institutional dysfunctions. Behind the demand for bribes, there may be a comprehensive set of players, roles and incentives – see for example Raballand and Marteu (2014), who map the political economy behind the demand for bribes at ports in Sub-Saharan Africa. Delays at ports and bribe requests reflect more than custom officials' greed, the authors find: they are the result of dysfunctions that go all the way up to the political level and involve influential representatives of the private sector – including domestic players who seek market power by preventing efficient entry via customs duties.[65]

What we find across the sector reviews is that corruption rarely causes an isolated price effect. There are *additional indirect effects*, allocation effects – such as more severe consequences for the poor – and almost always, these lead to inferior quality of some sort. While the consequences on health can be dramatic, lower quality in construction is indeed life-threatening as well.[66] In education, quality hampers the level of competence but also the incentives to perform if certifications that are supposed to signal competence are corrupted. Weak petroleum regulation may result in a lower volume of oil produced or misreported quality, with consequences for tax revenues. More generally, inflated prices – for example, on a large public construction project – lower the budget of other services and may well affect the provision of essential services. A further consequence is *scarcity* – for example, in the forms of utility services not supplied, roads not built, teachers not showing up in class, unavailability of medicines, etc. While such distortions can have a number of legitimate explanations, they can also be the result of corruption. Table 7.1. below lists examples of these different corruption effects for each sector (see sector reviews in Sections 3-6 for references and more examples).

Table 7.1. **Consequences of corruption across sectors**

	Extractives	Infrastructure	Health	Education
Misallocation of state revenues	Budget skewed away from services for the poor. Resource dependency common.	Over-investment and mis-investment in infrastructure facilities.	Budget cuts. Health and pharmaceutical subsidies. "Corruption-friendly investments" (construction, building, consultancy services).	Lower value for money (education is one of the bigger posts on national budgets).
Wasted resources	Illicit financial flows may reflect stolen state revenues. Inefficient sector governance hampers production and revenue potential.	Too-expensive subsidies. Over-inflated costs in construction cause losses for tax payers	Ghost workers and absenteeism facilitated by corruption.	Leakage of funds allocated for education. Ghost workers and absenteeism.
Inflated prices	Framework conditions for industrial development in other sectors of the economy largely neglected, resulting in uncompetitive prices for individuals and firms.	Bribes demanded for access to water and electricity. More expensive power supply.	Inflated prices of medicines and services.	Extra (informal) payments for textbooks, certificates/ grades and teachers' salaries.
Reduced quality	Few consequences if services are inferior. Lower quality of basic service delivery, including health and education.	Low-quality roads and other constructions. Poorer utility service provisions (like power cuts).	Substandard and fake medicine. Lower quality of health services offered.	Inferior teaching. Lower-quality school facilities. False diplomas (grades not reflecting qualifications).
Scarcity	"Scarcity" of competitors if tenders for oil licenses are manipulated.	Network services not necessarily provided to all districts, despite contractual commitments.	Lack of medicines (non-availability, sub-standard, or fake/not working).	Teaching not taking place. Insufficient supply of teaching services and school supplies.
Unfair allocation of benefits	Political corruption causes income inequalities.	Poor segments more exposed if there is government failure behind the provision of electricity, water and sanitation.	Health care allocated to those who pay bribes, and less upon needs.	Good grades to those who pay. Private schools not available for poor segments.
Other negative consequences	Conflict/civil war, terror attacks, bunkering (stolen oil), illegal mining, environmental damage, lack of safety in production (causes health damage and deaths).	Tax/accounting-related fraud. Theft of electricity supply. Embezzlement in construction. Low quality construction claims lives.	Fake medicines – sold by help of corruption and linked to organized crime. Lack of treatment claims lives.	Embezzlement of public funds – from the central level to each single school.

7.2. Cross-cutting challenges

Cases of corruption must be understood as the result of individual choices and the allocation of authority, and in light of sector characteristics. In addition to the direct consequences listed in Table 7.1., we now turn to some of the more general cross-cutting aspects and challenges identified in this review – including the distinction between collusive and extortive corruption, the particular concerns associated with political corruption, and how the (true) demand for integrity mechanisms seem to depend on a country's source of state revenues.

7.2.1. Extortive versus collusive corruption

For the understanding of corruption and development of strategies against it, it is necessary to grasp the difference between collusive and extortive corruption. Extortive corruption is the easier form to observe and is easier to control, whereas *collusive corruption* is subtle, often taking a grey-zone form, hidden behind campaign finance, compensated board positions, exchange of benefits or simply some naïve willingness among high-ranking officials and politicians to support their good friends.[67]

The distinction between the two categories depends on the extent to which those involved are "partners in crime". In the case of extortive corruption, the interests of the bribe-payer and government official are not aligned: a civil servant misuses his or her authority and forces the bribe-payer to pay. Examples discussed in the sector reviews are payments for services that should have been offered for free or at a low cost – such as payments for various permissions/licenses, services and controls. The risk of extortive corruption depends on how state authority is organised and controlled. Discretion can make a state administration more efficient, but this trust can be exploited, and each and every decision made cannot be subject to external scrutiny. Over the past decades, however, the problem of extortive corruption has decreased with economic development and steady improvement of institutions. This trend is confirmed by the previously mentioned EU report on corruption from spring 2014 (page 16), which claims that in several member states, where such corruption was an issue a decade or two ago, the problem is now largely eradicated.

When it comes to collusive corruption, the bribe is offered (or gladly transferred) to facilitate a service, alter a decision or influence a government strategy – for example, on taxation or protectionist policies. Other examples include the business leader who discusses industry regulation and exchange of benefits with a minister or the school manager who collaborates with a government oversight representative to embezzle funds allocated for education. There is a genuine agreement between those involved where both

parties benefit from the crime. This form of corruption will not evaporate with better institutions and development; it is a risk associated with government structures and political power.[68] It needs other approaches than those used to control extortive forms of corruption, especially if the manipulation of controls is part of the collusion. Control on decision-making procedures will rarely reveal such crime, and those involved have every incentive to stay silent. The most efficient strategies probably imply some form of performance assessment and investigation upon performance failure.[69]

In each of the sectors reviewed, there are risks of both categories of corruption. However, regulation of production of non-renewable resources, network industries (electricity, water, transport) and the promotion of domestic industry are typically more exposed to collusive forms of corruption, while the allocation of import licenses for production inputs in petroleum, health service delivery and utility provision (to end users) are rather associated with extortive corruption.

7.2.2. Political corruption

Collusive corruption overlaps with forms of political corruption (as illustrated by Table 2.1.) - although the terms are not synonymous. Political corruption, however, typically has severe cross-cutting effects and, whatever reforms are introduced, the bottom-up effect of various good governance policy initiatives reach only as far as corrupt politicians allow. While it is difficult to determine the exact consequences, on a grand scale, political corruption is clearly the category that can damage an economy – and society – most.

As addressed in the sector reviews, political corruption affects budget allocations across sectors, the direction of industry regulation and foreign entry to markets (i.e. markets are more exposed to competition in countries perceived to have fewer problems with corruption). Political corruption is also associated with income inequality (as estimated by the Gini coefficient), especially in the resource-rich economies, and is known to distort government contract allocations – which is a particular challenge in construction. In several sectors – and countries of all income levels – we observe examples of large infrastructure projects that are constructed even if they are not really needed. These projects are possibly the result of clear-cut corruption, or in other ways, overly tight connections between politicians and firms.

The consequences of political corruption play out differently across the sectors. In the utilities sector, for example, political corruption is found to undermine the independence of the regulator, with distortive impacts on prices, service delivery and expenses. In extractive industries, however, political corruption can go together with efficient sector regulation, while the corruption tends to harm other sectors of the economy – and the size

of state revenues. The health and education sectors typically receive less state revenue if the politicians are corrupt, and allocations tend to be skewed towards construction, acquisitions and subsidies for suppliers in the private sector. In all sectors there are examples of how political corruption at the central or local governance level increases market power for some firms. For this reason, it is important to consider anti-corruption and pro-competition initiatives as two sides of the same coin, and not as competing goals.[70]

The problem of political corruption can be prevented with formal checks and balances, the public's control upon access to information and voting decisions. Once it has become a systemic issue, however, it is particularly difficult to fight, especially when the incumbent (corrupt) government controls recruitment processes.[71] In some countries this appears to be the most challenging obstacle to development, since those in position to act cannot be expected to fight their own behaviour. Anti-corruption policies may therefore have to rely on mechanisms that are outside the government's reach.[72]

7.2.3. Why the main source of state revenue matters

The solutions to the most challenging forms of corruption will crucially depend on the nature of the state revenues available for "corrupt grabbing". Intuitively, the scope of political corruption is related to the country's main source of revenue and, if so, the demand for integrity mechanisms from those who can influence those revenues matter more than what other players try to achieve.[73] If the function of some integrity mechanisms is important to secure a certain revenue base (for corrupt grabbing), they are more likely to be introduced. To some extent, even for a corrupt leader it would be possible to secure good framework conditions for the private sector (and a basis for revenues) and to promote economic growth while securing exclusive personal benefits to oneself and a (limited) group of allies. Given the perspective of this (presumed) corrupt leader, his or her "need" for integrity mechanisms will not be the same across countries. When it comes to *extractive resource exporters*, for instance, huge revenues are generally secured from the sale of those resources. Integrity mechanisms might exist but are not necessarily well-enforced since their function is unimportant to secure revenues; investors will enter these markets and the natural resources will be sold whatever the country's institutional environment.

Hence, the theory suggests a different environment for anti-corruption at the highest government levels in different categories of countries. For the typical *emerging markets*, state revenues depend increasingly on taxes from multiple sources in the economy. Even the most corrupt politicians have to accept that integrity mechanisms matter to sustain revenues. A major risk for these economies – with markets growing from poor to more developed,

still striving with weak institutions – is the opportunity for some market players to secure their positions for longer-term profits. For each corrupt politician there will be a trade-off between (honestly) securing tax revenues and state revenues from the overall economy, or promoting narrow interest at the expense of well-functioning markets.

A third category includes the so-called aid-dependent countries.[74] These governments are faced with demands for integrity mechanisms from their development partners. Many of the demands are not sufficiently convincing, however; it is often "enough" for the corrupt leaders to make it look like as if new laws and institutions are respected – and insist on their good intentions to make them work. Such a façade strategy may well secure them higher revenues compared to a setting where they simply embezzle state revenues (Moene and Søreide, 2014b).

In conclusion, it is essential to understand the environment for corruption before strategies are developed. Political corruption – and collusive corruption involving already powerful players in a society – is probably the more important corruption-related obstacle to development. In various fora, government representatives and corporations often act and discuss corruption as if the problem consists of primarily extortive corruption. With the dichotomy discussed in this section, it might have become clearer why the different forms of corruption need different strategies – and why the collusive corruption at the top level of governments and among corporate management must be taken more seriously.

7.3. Policy considerations

This section discusses elements of conclusions that can be drawn from the sector reviews and presents further thoughts about efficient anti-corruption strategies.

7.3.1. The whole set of integrity mechanisms matters

Many of the corruption-related challenges addressed in this report could be significantly reduced with the effective implementation of all the anti-corruption principles and guidelines already agreed by member countries of the G20 Anti-Corruption Working Group. Besides, the general key elements of an integrity framework to mitigate a number of risks common in all countries is also well-known to reduce corruption-related challenges.

Societies are in constant change and so are the various forms of undesired acts, like corruption. The main anti-corruption responsibility for governments is to *strengthen their set of integrity mechanisms* for well-known as well as new corruption challenges, and to actually enforce them. Given

the severe consequences discussed in this report, governments must act on these principles with both domestic and international perspectives in mind.

7.3.2. Act on the consequences of corruption

To some extent, the items listed in the first column of Table 4 – the direct consequences of corruption – can be used to guide policy work. These are areas where corruption comes to expression, regardless of how the corrupt transactions are visible or possible to prove. When weak performance – of the sort listed in Table 7.1. – is observed, it is relevant to ask *if* the reason could be some form of corruption. Obviously, performance failure has a range of alternative origins. However, unless the question of corruption is considered upon performance weaknesses, such crimes will easily go unnoticed. The point is that corruption can hardly be controlled if the controllers search primarily for a breach of decision-making procedures. Since procedures are often manipulated, it is necessary to start by looking behind weak performance – whether it is some unexpected allocation of resources over a state budget, lower revenues than expected at a state administrative entity, higher prices for products or services in private sector markets compared with those of other countries or markets, or lower quality than expected – for example, in construction projects or the delivery of basic services, or scarcity for benefits when supply should have been able to meet the demand. Even acts of crime should be investigated for the risk of corruption. Environmental crimes or acts of terrorism are both easier to carry out if someone on the side of regulators or other control posts has been bribed.

The problem of corruption can be detected and controlled, not only by searching for acts of bribery, but also by searching for the consequences of bribery. A certain risk of being held responsible for poor performance – at the individual or group level – increases responsibility and honours good performance, and this may motivate many (honest) decision-makers for change.

7.3.3. The public good of anti-corruption law enforcement

When it comes to governments' international responsibilities, it is essential that states recognise the *public good* character of anti-corruption; i.e. as from unpolluted air, we all benefit from well-functioning markets. Governments do not want foreign firms to offer bribes "in [their] country", and the commercial benefits of obtaining contracts abroad can never excuse a lenient attitude on foreign bribery. In order to avoid free-riding on some jurisdictions' active enforcement, all countries should follow up on financial transparency initiatives, international co-operation for investigative purposes and the enforcement of foreign bribery legislation.[75] Internationally

we observe, however, that many well-designed anti-corruption initiatives meet substantial resistance or a lack of enthusiasm when it comes to the implementation stage. For this reason, it is important that governments not only focus on their own systems, but also, as international players, signal clear expectations of law enforcement in other countries.

Governments have multiple goals, however, and may face trade-offs in their anti-corruption ambitions. Few seem to have carefully considered what to prioritise given their comparative advantages, development agenda and unique industrial structure. For this reason, and in order to have in place a sustainable strategy for their engagement on this important agenda, governments could benefit from the development of *a foreign policy anti-corruption strategy*. Such a strategy would help them stay informed about their role and potential impact, recognise compromises between goals, identify ambitions and which domestic and international players to support, and flag their role in the international collaboration against corruption.

For research and policy design more generally, it is time to move beyond the design of laws and institutions and do more to understand the dynamics of reform and the political economy of enforcement.

7.3.4. Value for money in anti-corruption

Notwithstanding the severe consequences of corruption, it is required to consider the value for money when promoting anti-corruption initiatives. The introduction of best-practice anti-corruption initiatives is no guarantee of success if we do not know how they will affect those involved. The various empirical research on which this study has been built shows that one set of solutions will not work in all contexts. There may even be unintended consequences – for example, if the initiatives serve as a façade behind which decision-makers continue their corruption while they appear committed to the agenda, or if they reduce discretionary authority among already honest decision-makers. These difficulties are no excuse for inaction, nevertheless, since the costs of *not* implementing efficient solutions are substantial and have long-term effects.

In this context, it is worth stressing that one of the safe implications of the sector reviews is the promotion of independent competent regulatory, as well as law enforcement frameworks and auditing rules and systems. Increasing the risk of detection is essential to combat corruption and financial crime – and if we do not know where to place resources for anti-corruption, this is usually a safe bet.[76] Especially in education and health, we have noted high risks of embezzlement and fraud, sometimes facilitated by corruption, and better expenditure control and tracking will strengthen these important sectors. From an international perspective it is important that governments

support ongoing investigations in other jurisdictions and provide requested evidence and facts, in line with international agreements. The international development community should recognise the norm-building function of holding offenders responsible for their crimes, even if more forward-looking good governance initiatives might appear less likely to provoke governments. As regulation and law enforcement are improved, it is important to promote whistleblower protection, which is too weak in most countries.

When it comes to underlying institutional dysfunction or weaknesses, value for money in anti-corruption requires understanding the challenges before priorities can be set. In practice, this is difficult since an analysis of corruption often requires deep political-economy analysis. Moreover, strategies should ideally be grounded in society's interest and be tailored to the given government and, at the same time, set to match the capacity and competence level of those who will carry through the initiatives. "International best practice" can play a role of guidance, and interaction with international players for better institutions can be constructive if those players work truly in the interest of the society in question.

Many developing countries have fragile state structures, and G20 leaders should do what they can to avoid situations where some market players are allowed to exploit the weaknesses associated with state building processes – whatever natural resources the countries have.

7.3.5. Access to information matters in many ways

The term *transparency* is frequently applied in anti-corruption debates. Access to information makes it more difficult to be corrupt without being detected, and this will reduce the incentives for corruption if detected acts are sanctioned. Access to information laws is part of the standard integrity mechanisms that all governments should implement, respect and enforce. The opportunity for the public to assess and collect information about decisions, prices, expenses and cases of corruption strengthen the likelihood that leaders are held responsible for their corruption and other governance failures. Access to contract details makes it possible for the public to know how state revenues are being spent – which many citizens consider to be an obvious right. Information should be made available regardless of whether it is likely to be read or not, and regardless of how well the average citizen is likely to understand the documents.

Some industries operate with complex contracts, such as in infrastructure projects. For these sectors to gain from transparency, there should be a qualified group that can assess the information and "translate" it for the public. International actions like the Construction Sector Transparency Initiative (CoST), financial transparency initiatives in natural resource-

rich countries (EITI) and Open Contracting are steps in the right direction and serve as platforms for collaboration on integrity mechanisms. The development of further transparency initiatives, for example for comparing prices for products and services purchased by the public, would strengthen the anti-corruption agenda.

At this stage, it is especially important to keep up the international momentum on efforts for more financial transparency, and the implementation of new international agreements should be assessed continuously.

7.3.6. The political economy of extortive corruption

Throughout the paper we have debated the distinction between *collusive* corruption and *extortive* corruption. Collusive corruption can never be totally eradicated in state administration and politics, but it can be (significantly) mitigated; for example, through controls, sanctions and compliance systems and the just-mentioned transparency initiatives. Extortive corruption, on the other hand, could be easier to combat, as discussed, since there is no or only weak alignment of interest between those involved. In practice, however, there are some reasons that this form of corruption has not already been eradicated. There is a political economy behind the extortive demand for bribes – for licenses, in customs or by the police. For example, high-ranking civil servants or politicians may have benefited from the opportunity to secure their allies lucrative positions where such bribes can easily be demanded, and they may want to continue to do so. Another possible reason it continues is that these extra payments present a flexible informal remuneration scheme: a manager may condone extortive corruption among staff in order to reduce the wage gap between the public and private sectors – and thus keep staff who may otherwise leave the institution for better pay elsewhere. A further reason some leaders condone such acts is that they may keep staff loyal: staff involved in extortive corruption might be more likely to stay silent if they witness their leader's personal involvement in even more serious fraud and corruption.[77]

Nonetheless, extortive forms of corruption appear to decrease with development – as discussed – and this is why such forms of corruption are rarely an issue in most OECD member countries. Efforts to eradicate extortive corruption (including facilitation payments) can be promoted by governments domestically and supported by international players. G20 leaders can support representatives of the private sector in demanding a business environment free from extortive corruption.

7.3.7 Impact evaluation of policies will strengthen anti-corruption over time

Successful control of corruption over time requires knowledge about the effect of various strategies. Evidence-based policies require reliable data, but this is difficult in practice. The most reliable data are usually micro-level data on certain acts of corruption observed in specific contexts.[78] The problem with these data is that the results cannot necessarily be generalised for other settings. When gathering the next generation of corruption data, we will have to collect context-specific information more systematically to better determine when conclusions are valid across contexts.

A further challenge for the development of evidence-based policies is the weak tradition among anti-corruption practitioners to do impact-evaluation studies.[79] Future anti-corruption intervention should ideally be accompanied by a solid evaluation component, with a clear strategy for identifying impact and the causal relationship between a policy and its effects. A recent example of how this can be done is the current deployment of pay-for-performance systems in many developing countries, especially relevant in health and education.[80] These are solutions tailored to the specific challenge, and their impacts are being evaluated so that the results can be applied in the design of future policies.[81] The OECD Secretariat has already developed an assessment methodology on various shortcomings in education. Sophisticated data on utility performance can be gathered as well, and these will be useful for evaluating the effect of various regulatory choices on prices and service delivery, as discussed in Section 4. For the extractive industries it is possible to learn more from further analysis of resource governance indicators, as discussed in Section 3. More solid knowledge on what works in anti-corruption requires data collection efforts and research. The G20 countries could benefit from joint research initiatives.

Information about the consequences of corruption may drive reforms, while knowledge about causalities makes it possible to outline cost-efficient policy initiatives. This report has summarised empirical insights on the consequences of corruption for economic performance. The evidence on consequences and workable solutions is far from perfect but, as pointed out, there is a lot that can safely be done better to control corruption.

Notes

1. The Global Forum on Law, Justice and Development – a permanent knowledge sharing initiative consisting of more than 150 development partners coordinated by the World Bank, aims at understanding the underlying causes of corruption in order to assess and improve policy tools. The 'Drivers of corruption' report is a review of the literature prepared for this initiative and its working groups (Søreide, 2014).
2. For reviews of the causes of corruption, see Lambsdorff (2006), Campos and Pradhan (2007), Rose-Ackerman and Truex (2013) and Søreide (2014).
3. A public-private partnership (PPP) is a business model in which a public service is funded and operated through a partnership of government and the private sector. There are many PPP models with different risk management, financing, and payment structures (Barlow et al., 2013; Nikolic and Maikisch, 2006). When it comes to FDI it should though be noted that a general lack of comparable statistics on sector-specific FDI makes it difficult to attribute FDI distortions to sector-specific corruption.
4. See various reports under the Joint Evaluation of Anti-Corruption Support (Norad website). See also *www.u4.no* for related initiatives.
5. The OECD Anti-Bribery Convention defines facilitation payments as payments which, in some countries, are "made to induce public officials to perform their functions, such as issuing licenses or permits".
6. Petty corruption refers to minor payments for services that should have been offered free of charge, or extra payments for services formally offered at a set price.
7. Corruption will typically include some form of embezzlement, but there can well be embezzlement without corruption. Absenteeism (from civil servant positions) can undermine service delivery and compromise objectives of publicly financed health care, but again, it is not *corruption*. Such challenges may nonetheless reflect weak governance, possibly corruption, but weak service provision has a number of alternative causes – such as weak competence, lack of resources, conflict-related risks, transportation problems due to poor infrastructure, and more.
8. Presented to the European Parliament on 3 February 2014 and made available on the EU website (COM (2014) 38 Final).
9. Firms make heavy use of various investment climate indicators when they enter a market. Whether perceived corruption will affect their propensity to offer bribes, react against it or leave the market if the challenges are too substantial is studied by Søreide (2006, 2009) among others.
10. Peisakhin (2011) provides an overview of corruption experiments.
11. See Olken and Pande (2012) for a review of data sources on the extent of corruption and debate about how reliably we can rely on research conclusions.
12. OECD Foreign Bribery Report (2014).
13. Treisman (2007) reviews evidence-based weaknesses associated with perceptions-based indicators based on expert assessments and refers to a study by Razafindrakato and Roubaud from 2001-03, where households in eight African countries were surveyed about their experiences with corruption. The results were compared with experts' assumptions of what the households would respond. According to this study, experts not only overestimated the risk of corruption grossly; there were also no correlations between their expectations

and reported challenges. There was, however, a correlation between expert assessments and previous years' country rankings of corruption (Treisman, 2007:217).

14. See Bai et al. (2013), who suggest corruption may decrease with better framework conditions since well-functioning markets may "crowd out" corruption.

15. See Le Billon (2011), Africa Progress Panel (2013).

16. Import is relevant because several resource exporters tend to be not only resource-export dependent but also goods-import dependent (which is affected by corruption). Export channels are frequently limited (e.g. state marketing organization in charge of selling the government's share of oil), and there are often a limited number of licensed exporters for minerals, such as diamonds.

17. Al-Kasim et al. (2008) provide an overview of details needed to assess sector performance, including the risk of corruption at various stages prior to production and during operational phases.

18. See Acosta (2014) commenting on an EITI evaluation.

19. Many of the early papers have been criticised for the poor quality of the data used and most importantly for not adopting econometric estimation techniques that dealt with endogeneity, thereby generating unreliable conclusions (Straub 2011). The availability of new GIS anchored datasets is allowing the reliance on more rigorous micro-econometrics to revisit many of the early results and further add to our collective understanding of the importance of infrastructure for growth.

20. Results by Calderon et al. (2011) and Calderon and Serven (2014).

21. See Chapter 6 in OECD (2009).

22. This is especially the case when new investments are not the result of significant technological changes or efforts reduce bottleneck costs (i.e. reduced accessibility) for infrastructure users.

23. Network industries have both network segments (for example transmission grids in the case of electricity) and non-network segments (e.g. generation and end-user distribution). In fairness, we try to make competition work only in non-network segments.

24. For reviews of corruption mechanisms in utilities, see various chapters in Estache (2011), Kenny and Søreide (2010). For more comprehensive insights on sector dysfunctions, see Gómez-Ibáñez (2003), while Benitez et al. (2012) associate weak sector performance with alternative reasons for political failure (not only corruption).

25. See Flyvbjerg and Molloy (2011) for debate about the extent to which these results reflect corruption.

26. Overviews provided by Kenny (2009) and Estache (2014).

27. Fisman and Wang (2011) provide proxies derived from the benchmarking of private or public procurement data, Coviello and Galiarducci (2011) provide detailed case study of Italy, and Cole and Tran (2011) creatively compares public and private procurement.

28. A study from Argentina in the mid-1990s found that the annual payoff of effective regulation of utilities would (if it worked) be as much as 2% of GDP (Chisari et al., 1999).

29. "White elephants" – huge infrastructure investments that hardly come to use – are indeed a typical example of oversupply or overinvestment. At the other extreme, underinvestment is what characterises the recurrent postponing of service coverage in areas perceived by operators to be high commercial risks areas or the tolerance for abnormal service failures. For a discussion of how Spain's oversupply of infrastructure may be the result of close ties between politicians and firms, see Bel et al. (2014).

30. For details, explanation and examples, see Bjorvatn and Søreide (2005), Auriol and Straub (2011), World Bank (2014d) and Manzetti (1999). Vagliasindi (2011) describes company performance given different categories of ownership in light of corruption risks.

31. Chapters in Estache (2011) describe the consequences of such challenges in European markets.

32. See World Bank (2014c) and the CoST website: www.constructiontransparency.org/home

33. In the water and sanitation sector, for example, it is not unusual to have large water operators playing transfer pricing games with firms in which they have. This is the case for the purchase of chemicals needed to treat the water or software needed to manage client information for instance. Direct ownership interests in firms supplying them with key inputs such as chemicals or software to manage clients' information. If the pricing of these inputs (sold between units of the same corporation) is not competitive, the water users end up paying too much (or the taxpayers if the sector is subsidised).

34. The main exceptions are a few OCED countries (e.g. UK, Australia, Canada, and New Zealand) across infrastructure sectors and a few African (e.g. Mali) or Latin American countries (e.g. Brazil, Chile, Colombia or Peru) for some specific sectors.

35. World Bank, 2014c; Søreide (2002), Dellaporta and Vannucci (1999).

36. See Guasch and Straub (2009), Gassner et al. (2007) and Andres et al. (2013). For details on corruption in infrastructure-related procurement, see Piga (2013) in the context of OECD countries, Auriol and Blanc (2009) for water and energy in SSA, while Kenny and Musatova (2011) discuss how procurement issues can be used as red flags for risks of corruption in infrastructure. Kenny (2009) was early to raise the issue of construction processes and contracts. Most recently, Cole and Tran (2011) added useful insights with new empirical research techniques, showing how corruption masked by creative cost accounting could lead to a doubling of real profits in their study of a series of contracts for a construction firm.

37. World Bank (2014c) provides examples and lists further construction-related risks. Olken (2007) finds the quality of roads to decrease systematically in the extent of corruption across Indonesian districts.

38. Definition from Transparency International UK's Defence and Security Programme.

39. See Wei (2000) and Kirkpatrick et al. (2005).

40. Using panel data for OECD countries, Barbiero and Cournède (2013) show that increasing expenditure on health, education and transport increases long term GDP growth. The relationship between health investments and health outcomes is documented by the OECD.

41. Bloom et al. (2004); Bloom and Fink (2014); Jamison et al. (2013); OECD (2012); Ruger et al. (2006).

42. A further and more accurate way of estimating the relationship between health and development uses "full income" as a way to bring the value of reduction in mortality into national income accounting. Full income is defined as income growth measured in national income accounts plus the Value of Additional Life Years (VLYs) gained in that period. Figure 1 in Annex A presents data on the contribution of health to growth in GDP per capita (%), 2000-2011.

43. Likewise, recent OECD estimates by Barbiero and Cournède (2013) found a 1% GDP reallocation towards health created an average direct effect of 0.03 percentage points and a net present value of future gains of around 12% of GDP, yet they also note that beyond a certain point of development, the growth effect of rising health spending (relative to income) is bound to diminish.

44. Their method of measuring corruption included collecting and analysing 86 cases of corruption in European nations and interviewing key informants (European Commission, 2013).

45. See Bandiera et al. for a useful exercise where active and passive waste were documented.

46. Including Tanzania, Kyrgyzstan, Morocco, Ukraine, Bosnia and Herzegovina, Lithuania.

47. See Delavallade (2006), Lewis (2006), Mauro (1998), Radin (2013) and Savedoff (2006).

48. In Liberia, severe irregularities committed by employees of the Ministry of Health and Social Welfare resulted in USD 4 million in unaccounted for funds, or 20% of the ministry's budget (Fagan, 2010).

49. OECD (2013) provides a review of challenges in health sector procurement. For details and solutions for corruption in health sector procurement is conducted, see also Vian et al. (2010).

50. For example, one study in Ethiopia found a lack of drugs in the public sector and availability of those drugs in private pharmacies and clinics (Lindelow et al., 2003). Qualitative studies that have probed this issue have concluded that quality and drug availability are virtually synonymous, and that lack of drugs discourages the use of public health facilities (World Bank, 2005). According to a study in Costa Rica, half of exit-survey respondents had not received a prescribed drug due to non-availability (Cohen, 2002). In Uganda, researchers quantified the effect of three sources of leakage at public health facilities: over-reported utilization (i.e. "ghost" patients), prescriptions recorded for real patients who did not actually receive those medicines, and medicines missing from the store room and unaccounted for.

51. Health care fraud involves intentional deception by persons or entities such as health care providers or vendors, resulting in unauthorised benefits. It has been estimated that 3-10% of health-care spending is lost to fraud and abuse each year, amounting to billions of dollars (Rashidian et al., 2012). In 2012, the WHO estimated that worldwide health expenditures were USD 5.7 trillion, of which USD 415 billion or 7.29% is lost to fraud (and errors) annually through practices ranging from theft of wheelchairs to organised crime rackets that steal patient information and set up shell corporations to bill insurance funds for "ghost" services (World Health Organization, 2011).

52. Anti-corruption Action Centre (AntAC), 2013.

53. Likewise, a study prepared by a think tank, the Mexican Institute for Competitiveness, analysed the impact of the OECD Public Procurement reviews of IMSS and found a saving of 3,3% in procurement spending in selected medicines, which represents about EUR 20 million in a year. The study also shows that the OECD reviews resulted in a 34% increase in the number of bidders (OECD, 2013).

54. This might be why the World Bank in the Africa Development Indicators 2010 report refers to such offences as "quiet corruption".

55. Informal payments are more common in Central and Eastern Europe, Africa, and Southeast Asia, and are more frequent in the hospital sector and for surgical procedures (Gaal et al, 2010). Amounts are generally low, but for a subset of patients (e.g. those needing hospitalization), informal payments can be substantial. In Moldova, national budget survey data show that 25% of inpatients reported making informal payments, 37% of which were involuntary (extorted or required in order to access care). The average payment was EUR 90 (the median was EUR 44). Those who underwent surgery were 70% more likely to pay informally (Vian and Feeley, 2014). Informal payments are similar to fee-for-service payments, which have a demonstrated negative impact on equity and efficiency (Gaal and McKee, 2005).

56. See La Forgia and Harding (2009), McKee et al. (2006) for a summary of these early studies.

57. Schultz (2008), for instance, has exposed "strong empirical regularities between educational attainments of populations and their productivity and performance in both market and non-market (home) production activities". See also UNESCO (2013).

58. Religious bodies obtained 2.6; NGOs 2.7; military 2.9; and media 3.1; all other public institutions ranked higher.

59. Foreword to *Strengthening integrity and fighting corruption in education: Serbia*, OECD 2012.

60. While democracy is often found to correlate with economic performance, while not necessarily explaining development for low-income countries, Knutsen (2013) demonstrates such causality also for developing countries. On the importance of trust for economic performance, see Zak and Knack (2001).

61. Public Expenditure Tracking Surveys (PETS) assess specific flows of funds, i.e. school grants, teacher salaries, textbooks, school meals, etc.); school report cards can estimate the percentage of irregular fees as a percentage of total fees. Quantitative Service Delivery Surveys (QSDS) performed during unannounced school visits can determine the percentage of unjustified absenteeism of teachers; comparison of the official list of schools, teachers and pupils with those actually registered. Most of the indicators listed are mainly drawn from sample-based facility surveys, in particular PETS, QSDS and report cards. For details, see Reinikka and Smith (2004), Karim (2004), Chaudhury et al., 2005; Hamminger (2008) and Silova (2006).

62. The OECD has developed an assessment methodology that seeks to identify the specific shortcomings of education systems and anti-corruption policies that create demand and provide opportunities for malpractice in education. This tool will help track corruption-related challenges.

63. See Weidman (2007) for perceptions-based studies of the relationship between corruption, education and economic outcomes.

64. Rumyantseva (2005) describes examples in Russia and Ukraine where employers explicitly state in advertisement that only graduates from certain universities are welcome to apply because they do not trust the process of certification in place elsewhere.

65. See also Raballand et al. (2012).

66. In Angola, for example, a new hospital was so poorly constructed that it was not safe to use the building and thus medical services for a large group of citizens could not be offered as intended.

67. See Auriol (2014) and Section 2 on these concepts of corruption.

68. Also this trend on collusive corruption is somewhat confirmed by the mentioned 2014 EU report. On pp. 17-18 it argues that grand corruption, involving politicians and civil servants, must be taken more seriously across member states (regardless of their income level). The EU points in this report at the results uncovered by the Stolen Asset Recovery Initiative of the World Bank and the UNODC "which analyzed 150 cases of grand corruption and found a direct link between large-scale corruption by high-level public officials and the concealment of stolen assets through opaque shell companies, foundations and trusts" (p. 18).

69. Basu et al. (2014) discuss the option of introducing leniency for those who pay and then report bribery, and claim this step will distort the trust between the briber and the bribee in cases of facilitation payments. Dufwenberg and Spagnolo (2014) argue it will reduce all forms of corruption (not only extortive forms).

70. For example, some authors, concerned about the risk of cartel collaboration, consider transparency initiatives a threat to competition (see Graells, 2014). However, as reviewed by Kenny (2014), there is little substance to such concerns. See also papers presented at the OECD Global Forum on Competition, Paris 27-28 2014, available at the OECD website.

71. Consider for example the sale of parliament positions in Bangladesh, as discussed by Amundsen (2014); the incumbents' illegal tapping of state budgets to win the next election, as discussed by Helle and Rakner (2014) for the case of Uganda; the many examples across countries of how political recruitment processes are blocked by corrupt leaders, as described by Gboyega et al. (2010) for the case of Nigeria; or the high propensity among African states to alter their constitution towards presidency and providing the ruling president with complete control over revenues, as described by Robinson et al. (2006).

72. Rose-Ackerman and Carrington (2013) provide a collection of chapters on the role of various international players in anti-corruption.

73. Argument presented in by Moene and Søreide (2014a).

74. While the categorisation may be over-simplified, it may nevertheless be used here for the sake of clarity.

75. The OECD tracks enforcement records of all signatories to the OECD anti-bribery convention; see the OECD website. See Pieth et al. (2013) for details on the implementation and enforcement of the convention.

76. The mentioned 2014 EU anti-corruption report points at law enforcement weaknesses in many member states. In particular it points at how procedural shortcomings hinder investigation of cases.

77. For analysis of explanatory factors behind demand for bribes in Sub-Saharan ports, see Raballand et al. (2012), summarized by Raballand & Marteu (2014).

78. (Olken and Pande, 2012) provides an overview of such studies.

79. Johnsøn et al. (2012) describe severe knowledge gaps in donor-financed anti-corruption work. Jøhnson and Søreide (2013) discuss impact evaluation methodology for corruption policies.

80. For recent examples, see Peabody et al.(2013), Sylvia et al. (2013) or Olken et al. (2012).

81. The impact evaluation results of pay for performance schemes are not obvious. According to anti-corruption investigators, there have been detected many attempts of manipulating performance reports. The overall effect cannot be determined without systematic evaluation, and this is just one example where knowledge about effects would help determine whether and how programmes should be scaled up for use in many countries.

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Annex A

Corruption indicators most frequently referred to in this paper

Table A.1. **The corruption indicators most frequently referred to in this paper**

Indicator	Institution	Description
The Corruption Perception Index	Transparency International	The Corruption Perceptions Index ranks countries and territories based on how corrupt their public sector is perceived to be. A country or territory's score indicates the perceived level of public sector corruption on a scale of 0-100, where 0 means that a country is perceived as highly corrupt and 100 means it is perceived as very clean.
The Bribe Payers Index	Transparency International	The bribe payers index ranks the likelihood of companies to win business abroad by paying bribes.
The Global Corruption Barometer	Transparency International	The last survey involved more than 114,000 respondents in 107 countries, it addresses people's direct experiences with bribery and details their views on corruption in the main institutions in their countries. Significantly, Transparency International's Global corruption Barometer also provides insights into how willing and ready people are to act to stop corruption.
The Resource Governance Index	Revenue Watch Institute	The RGI scores and ranks the countries, relying on a detailed questionnaire completed by researchers with expertise in the extractive industries. The Index assesses the quality of four key governance components: Institutional and Legal Setting; Reporting Practices; Safeguards and Quality Controls; and Enabling Environment. It also includes information on three special mechanisms used commonly to govern oil, gas and minerals – state-owned companies, natural resource funds and subnational revenue transfers.
Stolen Assets Recovery	The World Bank and the United Nations Office on Drugs and Crime	The database is comprised of cases where the underlying offenses implicated (or are alleged to implicate) articles of the United Nations Convention against Corruption.
Entreprise Surveys	The World Bank	An Enterprise Survey is a firm-level survey of a representative sample of an economy's private sector. The surveys cover a broad range of business environment topics including access to finance, corruption, infrastructure, crime, competition, and performance measures. Since 2002, the World Bank has collected these data from face-to-face interviews with top managers and business owners in more than 130 000 companies in 135 economies.
Worldwide Governance Indicators - Control of corruption	Revenue Watch, Brookings Institution, World Bank Development Research Group and World Bank Institute	The WGI compile and summarise information from 31 existing data sources that report the views and experiences of citizens, entrepreneurs, and experts in the public, private and NGO sectors from around the world, on the quality of various aspects of governance.

Annex B

Issues paper on corruption and economic growth

The Issues Paper on Corruption and Economic Growth was prepared in 2013 to contribute to the G20 anti-corruption agenda, under the leadership of the Russian Presidency. It was presented to the G20 members at the 2013 G20 Summit in St. Petersburg and provided the basis to follow up analysis contained in the report. The drafting of this Issues Paper was led by Peter Sturm.

Introduction

The Russian Presidency of the G20 has chosen growth as the underlying priority of its agenda of the St. 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 Anti-Corruption Working Group has asked the OECD to lead the work examining the impact of corrupt practices and anti-corruption policies on economic growth and development, resulting in this paper to be presented to the G20 leaders at the St. Petersburg Summit in September 2013.

Through an investigation of the relationship between corruption and anti-corruption 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 Foreign Direct Investment, 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 significantly affect economic welfare and, in the case of trust, a country's development potential.

The G20 agenda on anti-corruption as laid out in the 2010 and 2012-13 Anti-Corruption 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 anti-corruption policies – 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 anti-corruption 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 G20 work. 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), to inform countries' strategic discussions on the G20 anti-corruption agenda in line with the St Petersburg Strategic Framework.

Overview

Policy makers' attention has increasingly focussed 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 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 this is so is 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 also to 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. 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 delegitimisation 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, the 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 impede growth. An analysis of such situations reveals, however, that the regulations 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 (i.e. "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. These 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 tends 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 affect the pace of innovation and thus economic growth.

An important channel through which corruption influences economic performance is by affecting 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, a 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 ongoing poverty alleviation programmes in low-income countries.

Various transmission channels are characterised 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 for 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 only exists 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 elements of an environment aiming at minimising 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 that 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 whistleblowers as well as the presence of a vigorous and independent media.

Additional ingredients of an effective anti-corruption 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, the rule of law and regulatory quality, identified good practices could help countries create or strengthen the institutional environment conducive to reducing corruption. Together with a comparative analysis, they can explain which institutional arrangements work, how, why and under what circumstances.

International organisations – 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 anti-corruption policies, they can accelerate and improve ongoing reforms. But they cannot substitute for the genuine motivation of local stakeholders and governing elites in particular, or for cultural change, which are essential for the success of such policies. On the other hand, international co-operation is essential in fighting those aspects of corruption that are outside the control of local policy makers, like international money laundering, denial of opportunities for investment of ill-gotten wealth in the 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 spillover effect of corruption and the systemic dimension that it may take, building the case for the 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 anti-corruption campaign in Hong Kong, China, in the first half of the 1970s. In both of these contexts, anti-corruption measures were accompanied by improvements in most other public-sector governance indicators as well, supporting a holistic approach to anti-corruption policies. It is noteworthy that the successful anti-corruption campaigns in both Singapore and Hong Kong, China, were implemented when the states were still relatively poor and were characterised 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.

Corruption and economic growth and development

Corruption: Typology and measurement

The focus of this paper is on corrupt practices involving public officials, how they affect 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 B.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 2001-02 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 Zaïre, 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. How much the resulting output losses amount to is difficult to assess.*

Box B.1. **The cost of corruption** *(cont.)*

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 from the substantial output losses entailed by corruption, its most corrosive effect consists of eroding public trust and ultimately delegitimising the state, as summarised 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."

*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% of current GDP.

Typology

Different actions abusing public office for private economic gain ("corruption", as defined in this paper) can be categorised 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 or 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 that is relevant to impact analysis is that between centralised and decentralised corruption. Decentralised corruption prevails if the transactions involved are not co-ordinated within the public administration. Centralised corruption tends to be more predictable than decentralised, thus reducing the uncertainty involved. By internalising 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 characterised by the absence of effective sanctions against corrupt behaviour.

Finally, an act of corruption can be characterised 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 on 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 rest 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:

1. The "corruption perception" index (CPI) and bribe payers' index (BPI) produced by Transparency International;
2. 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);
3. A corruption index, the International Country Risk Guide (ICRG), sold by the PRS Group, a private business-consulting company.

Box B.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 the transparency and predictability that characterise 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 the 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 to prevent their abuse, serious difficulties of effective monitoring usually persist (OECD 2010[1]c, OECD 2012[2]b Transparency International, 2009).

1. Lobbyists, Government and Public Trust: Volume 1: Increasing transparency through legislation.
2. Lobbyists, Government and Public Trust: Volume 2: Promoting integrity through self-regulation.

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

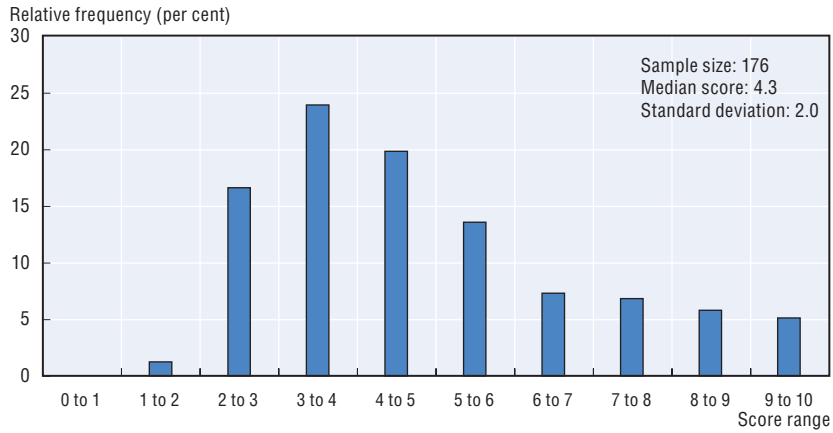
0.986). While these indicators have been widely used in empirical research, some authors have questioned their accuracy and the validity of their use in empirical research (most recently Campbell (2013)). Notwithstanding the validity and reliability of perception indicators as measures of the reality of corruption, they remain in fact, a reference to help people and both business and political leaders take decisions, explaining their use in gauging the impact of corruption on the economy.

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.[2] 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. 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 one 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.

Corruption and economic performance

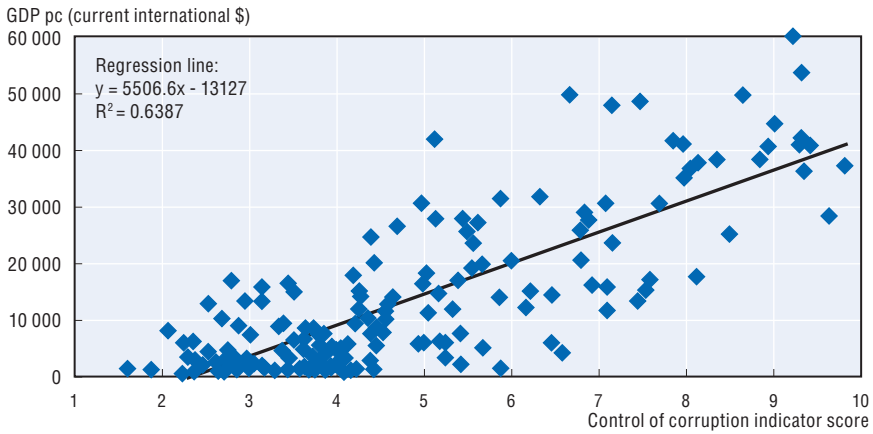
Before presenting the results of individual studies, it will be useful to present a broad picture of the observed relationship of indicators of corruption and output levels (as measured by GDP) and growth rates. Year 2011 data on the corruption indicator used[3] and GDP per capita at purchasing power parity (IMF) are available for 210 and 181 countries/territories respectively, with an overlap of 176 entities (including all G20 nations), constituting the sample used in this paper. Figure B.1 presents a histogram of the 2011 CC indicator scores. The original World Bank CC indicator has been rescaled to run from 0 to 10, where 0 represents the highest level of perceived corruption.

Figure B.1. **Incidence of corruption**



Source: World Bank, WGI data bank.

Figure B.2. **Corruption and output levels**



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

Figure B.2 shows the correlation between the CC indicator and GDP per capita 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% in the GDP per capita variation. An improvement in the CC indicator by one standard deviation (2 points) is associated with an increase of some USD 11 000 in GDP per capita (in 2011 prices). This should not, however, be interpreted as a causal relationship, since in a bivariate regression of GDP per capita 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 Box B.3.

Box B.3. **Corruption and output: Reverse causality and virtuous circles**

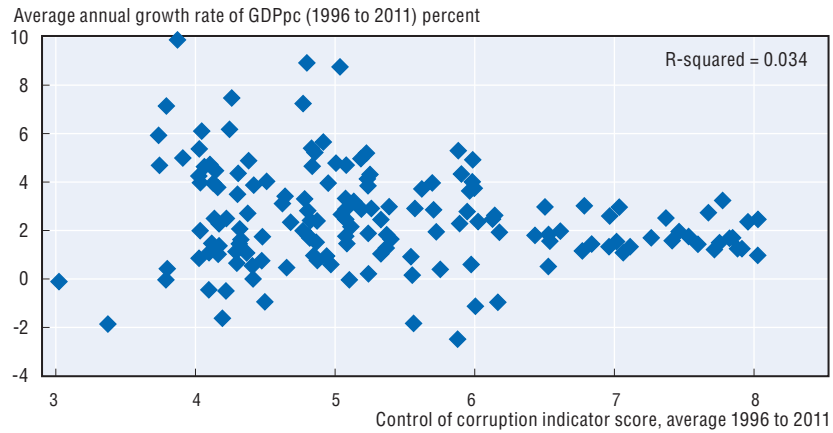
The direction of causality underlying the high correlation between the corruption indicator and the output measure (GDP per capita) can be interpreted in different ways: On the one hand, it has been argued that the correlation provides strong evidence for the pernicious effects of corruption on economic 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) summarises 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 anti-corruption 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 have been quite spectacular. Today their GDP per capita exceeds that of the OECD average, while in the early 1950s it was not much different from income levels in many concomitant African countries.

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 that 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 that can be applied to improving the quality of governance further, thus creating a virtuous circle. However, such a virtuous circle is far from 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 B.3). So, if there is a causal relationship between these two variables, it has to be teased out by more sophisticated analysis (discussed 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.

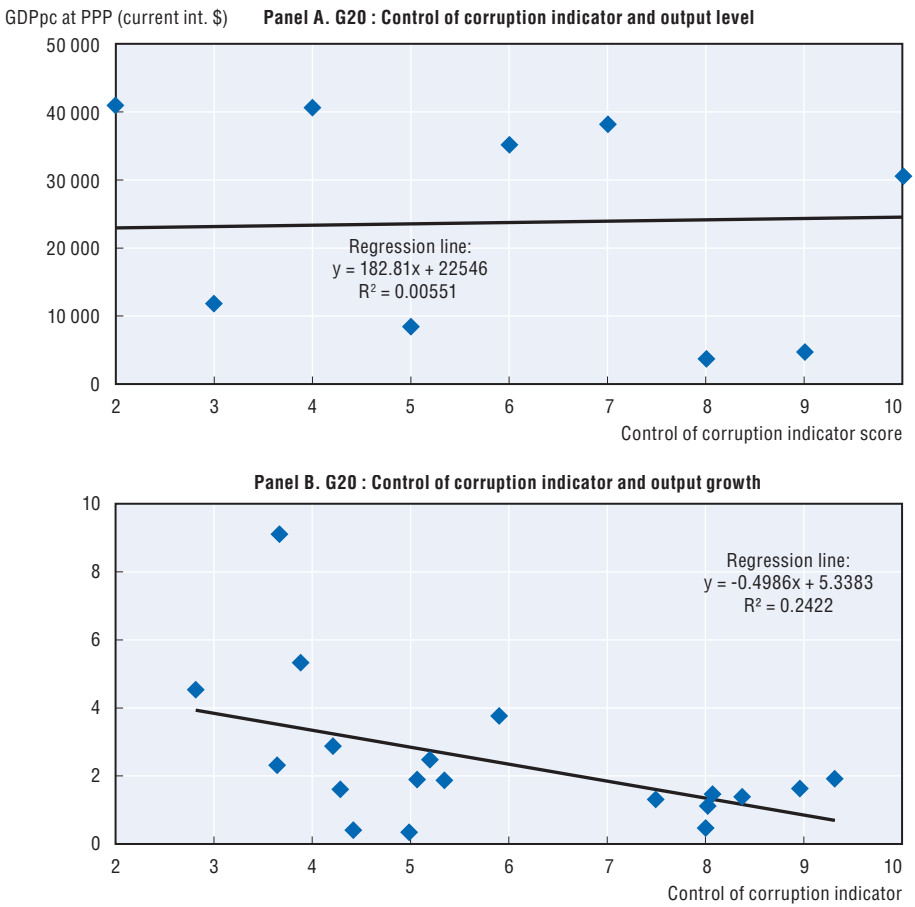
The relationship between output levels and growth rates for the G20 group of nations is presented in Figure B.4 for comparison.

Figure B.3. **Growth of GDP per capita and corruption level**



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

Figure B.4. **G20 – Corruption and output**



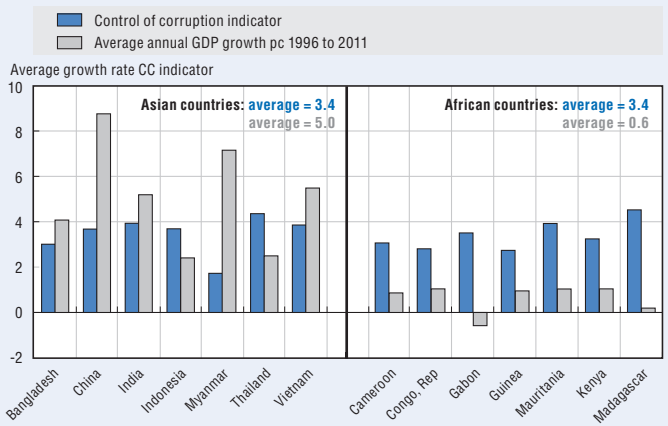
Source: IMF, WEO data bank, World Bank, WGI data bank.

These data display an even stronger correlation between corruption and the GDP per capita 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 with 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 Box B.4.

Box B.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 per capita growth rate of a sample of Asian economies 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 B.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 newly industrialised countries (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 have been advanced to elucidate the causes underlying the Asian paradox, a comprehensive and robust explanation lending itself to firm policy conclusions has so far not been found.[2]

Box B.4. **Corruption and output growth: Asian exceptionalism?** *(cont.)*

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 tolerate 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 they fatally compromise the rule of law – which is a key component of public-sector governance and 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 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 socioeconomic 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 Asian economies today also prevailed in South Korea and Chinese Taipei at an earlier stage of their development. As these countries moved into the group of higher-income countries, characterised by more sophisticated technologies and innovation, their perceived corruption rating improved.

Channels through which corruption can affect output and growth

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 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). And the existence of public goods requires governments to organise 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 anti-corruption 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.[4] 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 increases the cost of investment (Bardhan, 1997). This reduces its profitability and thus,

all else being 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 centralised or decentralised, with the latter usually being more predictable.

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

Box B.5. **Russia: Reforms in the Russian Customs Service: 2003-08***

Initial situation: The Russian Federal Customs service is one of the largest Russian government agencies, with more than 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 International's 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, in 2000 the Russian government launched the *Federal Targeted Program of Development of the Customs Service of the Russian Federation for 2001-03*. This programme became the basis for the World Bank strategy to modernise the Russian Custom Service, approved in 2003.

Box B.5. **Russia: Reforms in the Russian Customs Service: 2003-08*** *(cont.)*

The reform: The effort to reduce corruption was an essential part of the large reform project focusing on modernising 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) harmonisation 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 reduce the opportunities for rent-seeking; iii) automation of processes: discretion was to be reduced by improving and ensuring data exchange and cross-checks, which was made available by the introduction of new technology; and iv) the strengthening and professionalising of customs administration by reforming human-resource policies, organisational 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%, export declarations selected for inspection have been reduced by 89%, and the average clearance times for vehicle inspections have declined 63%. The Business Environment and Enterprise Performance Survey (BEEPS) showed a 45% reduction in bribe frequency from 2005-08: 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. 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.

*This information has been compiled by the World Bank.

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*. World Bank (2007), *The Many faces of corruption*.

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 co-ordination with multiple countries (parties to the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions) reduced their investments in corrupt countries.[5] 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 summarises 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 recognised 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 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. 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 succeed only by pleasing customers, so officials' decisions are irrelevant. This is consistent with the observation that corruption tends to be lesser 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 latter 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.[6] 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, anti-corruption 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 businesses. 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 characterises 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 negative impact on ("productive") entrepreneurship, and thus, by implication, on economic growth.[7]

Public governance

Last but not least, an important channel through which corruption affects economic performance is by affecting 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 taxpayers 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.

Box B.6. **Mexico: Reforms of the Tax Authority (late 1980s and beyond)***

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 spread 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 modernise SAT and improve services by introducing a new information-management system, computerising records, simplifying forms, building staff capacity, identifying and minimising 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 2000s. The anti-corruption strategy consisted of three main efforts: i) the establishment of a system to anonymously report likely acts of corruption using phone, e-mail 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, and the establishment and dissemination of institutional values and co-operation.

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 condemnations, which resulted in the removal of 1 567 public officers between 2003 and 2008. Moreover, the perception of corruption of SAT members has declined by 55% from 2002 to 2008. However, corruption still persists; the majority of SAT's personnel hold a position vulnerable to corruption, especially those working at customs.

*This information has been compiled by the World Bank.

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).[8] 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, by how much tax receipts are reduced 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.

Box B.7. **Brazil: Improving service delivery and increasing transparency in the state of Bahia**

Initial situation: In the mid-1990s, shortcomings in Brazil's service delivery systems were particularly acute in Bahia, the country's poorest state. Bahia's vast size — 417 municipalities with 13 million people spread over 350 623 square miles (908 109 sq. km) — made providing coverage particularly difficult. In 1995 the Bahia state government embarked on an ambitious reform programme, including ambitious efforts to increase transparency, in order to transform the quality and efficiency of service delivery.

The reforms: One of the main obstacles to efficient service delivery in Bahia was the fragmentation of services and the vast number of government agencies. To resolve these problems, major efforts to consolidate key agency functions into single service centres (SAC) and improve transparency and efficiency were undertaken. The "one-stop shop" concept allowed a citizen to 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 computerised information systems in all administrative units, iv) availability of trained human resources, and 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.

Box B.7. **Brazil: Improving service delivery and increasing transparency in the state of Bahia** *(cont.)*

As part of the modernisation initiatives, Bahia also implemented and launched a website to improve the interaction between the government and its citizens, the private sector and other government agencies. The site, administered by the state'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, labour, 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 at all steps of the procurement process. The site discloses all electronic purchases, biddings documentation, lists 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.

Note: 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).

Source: This information has been compiled by the World Bank.

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 also negatively affects 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.

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 influence people's perception

of government performance and their willingness to co-operate, making it more difficult for a government to assume its proper function in regulating the economy and supplying public goods.

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 affecting 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 programmes, 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 fewer 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.

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 well-being, 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"[9] than with gross capital formation, as defined in the national accounts. He finds that, conversely, 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 the rule of law, which is a key element of public sector governance and the importance of which for economic performance has been established in both theoretical and empirical research (see North (1990) for the theory and Barro (1991) for the empirical research). The important point here is that the perceptions of widespread corruption and weak rule of law diminish society's amount of social or civil capital (trust), which negatively affects both the overall economic performance and the general well-being and quality of life (happiness). In severe cases this may call into question the legitimacy of the state and jeopardise political and macroeconomic 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).

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 among 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 B.1.

Table B.1. **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 (World Bank 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 per cent 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 analysed 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.

Meta-analyses

Campos et al. (2010) have investigated a total of 460 empirical estimates of the effect of corruption on growth from 41 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 summarise the main lessons from their research as follows: cross-country macroeconometric 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 the 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 GDP per capita 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 GDP per capita for each unit increase in the perceived corruption index. Their corresponding estimate for the complete sample is a decline in GDP per capita 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 anti-corruption

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)[10] 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.

Results of selected individual studies

Among the large number of empirical studies that test the relationship between corruption and growth, only a few attempt to separate the overall effect into contributions from different transmission mechanisms. None of the studies presenting such a decomposition includes all of 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 summarised in Table B.2. All studies report a negative overall effect of corruption on output growth, but otherwise the results differ substantially, with respect to both the size of the overall effect and the importance of alternative transmission channels. The first two studies are based on cross-section estimates, while the third study synthesises its estimates by combining the results of various independent studies.[11]

One of the reasons repeatedly invoked 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 they 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 the rule of law, voice and accountability, and political stability) in estimation equations testing the effect of corruption often changes both the size and the statistical significance of the estimated coefficients.

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

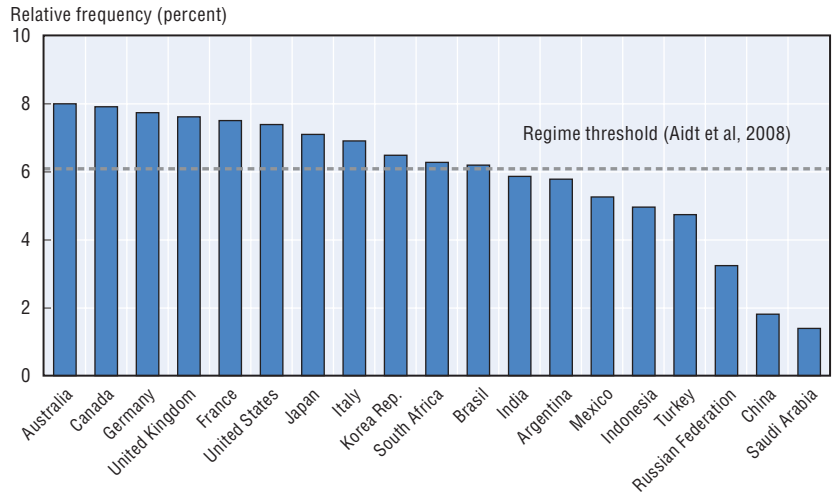
		Alternative transmission mechanisms: contribution to total effect (per cent)						
				Indirect transmission channels				
Study	Total effect on annual growth rate of real GDP pc (a) (percentage points)	Total effect	"Direct" effect	Investment	Public finance	Political stability	Human capital	Openness
Mo (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	-0.59	100	12	(c)	39	na	49	na
Ugur and Dasgupta (2011) [Table 4.8] all countries	-0.91	100	14	-5	79	na	12	na

Notes: (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)

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.[12] The intuitive explanation for this result is that the better the quality of public-sector governance, the more its subversion by corruption will hurt economically. At

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 B.6 shows the V&A indicator for the G20 nations and the regime threshold as identified in the Aidt et al. study.

Figure B.6. **G20: Voice and accountability indicator and "regime threshold"**



Source: World Bank, WGI data bank.

Global anti-corruption policy efforts

The growing attention paid to public-sector governance, including perceived corruption, has been largely motivated by the recognition of the potential damage that corruption can exert on economic performance (see Box 1 above). This has led to increasing policy efforts in many countries to reduce corruption. And these efforts have been supported by international organisations that 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 anti-corruption policies.

Anti-corruption campaigns

Unlike the large volume of studies analysing the transmission mechanisms and the overall impact of corruption on economic performance, few studies try to measure the effects of anti-corruption policies on economic outcomes. This is attributable to a number of difficulties such research needs to overcome. One of them is how to define an anti-corruption 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) are often implemented for reasons other than to combat corruption but may nevertheless have a major impact on it.

Box B.8. **Examples of Anti-corruption campaigns**

Singapore: In 2011 Singapore had the ninth-highest control of corruption ranking among 212 countries (96th 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 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: i) unconditional support from the top political leadership, which indeed initiated the process; ii) transparent legal codifications of what constitutes corruption and associated sanctions; iii) thorough implementation of the legislation and application of sanctions; iv) strict adherence to meritocracy in the appointment and financial compensation of civil servants. It should be noted that the anti-corruption 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 (57th percentile), and its indicator deteriorated steadily following an improvement between the years 1996 and 2000. While the anti-corruption campaign in the 1990s showed that progress is possible, the ultimate failure to bring Italy up to average OECD performance has been due to a 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) that are important complements to the control of corruption. Against this background, and given mounting economic difficulties linked to the ongoing euro crisis, in November 2012 the Italian parliament approved Law 190, which contains provisions for the prevention and prosecution of corruption in the public administration (see 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 levels. Implementation at the local level is of particular importance, but may also prove the most difficult, 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.

Box B.8. **Examples of Anti-corruption campaigns** *(cont.)*

Zambia: Although a Zambian anti-corruption 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 anti-corruption efforts have received substantial support from various bilateral and multilateral international aid organisations. While instrumental in strengthening the capacity of key anti-corruption 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 financial reporting and control systems and has led to the suspension of aid by major donors. Partly in response to this scandal, President Michael Chilufya Sata, elected in 2011, has made the fight against corruption a major plank of his policy programme, in contrast to his predecessor's ambivalent commitment. While this has led to various legislative and administrative initiatives (e.g. a new Anti-Corruption Commission Act in 2012), it is too early to tell whether these will be more successful than similar earlier ones.

The results of anti-corruption policy efforts around the world have been mixed, due both 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 ongoing country efforts to combat corruption. Table B.3 juxtaposes changes in the control of CC and average GDP per capita 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.[13] 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 by 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.

Table B.3. **Changes in corruption indicator and GDP per capita**

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			-1.80	1.7

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

For comparison, Table B.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 by three times the standard deviation of the CC estimate.

Table B.4. **G20 – Changes in corruption and GDP per capita**

Corruption measured on a scale from 0 [highest] to 10 [lowest]						
Change in output measured as average annual growth rate of 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	-0,3	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
Saudia 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	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 grey.
Sources: Average annual growth rate of real GDP per capita, percent: IMF; change in corruption: World Bank, WGI corruption indicator (measured on scale of 0 to 10).

Co-operation in international organisations

The short overview provided in this section does not claim to be exhaustive, but tries to give an indication of the international co-operation and experience in the fight against corruption. This co-operation allows individual countries deciding to confront their corruption problems to benefit from the experience of other countries. Such co-operation is essential in instances where corruption involves transnational activities. The overview does not cover all anti-corruption activities pursued by the organisations

mentioned, nor does it mention all organisations contributing to anti-corruption activities on the international stage.[14] The overview seeks to present examples of the focal points of the major international organisations in combating corruption and how these approaches positively support anti-corruption reforms. It shows the value added of international co-operation fostered by international organisations, which allows countries to assess progress and ascertains the impact of anti-corruption policies. Indeed, through mandatory or voluntary peer reviews and in-country programmes, international institutions can play key roles by: i) establishing integrity standards that may be adopted by countries as guidance to their reform strategies; ii) developing methodologies to help frame, monitor and evaluate anti-corruption interventions; iii) 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 anti-corruption efforts and covers a broad range of pertinent issues, including the prevention and criminalisation of corruption, the importance of international co-operation 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 criminalisation 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.[15] 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 countries and 6 non-members, commit to putting in place and applying legislation that criminalises the act of bribing foreign public officials. The convention's monitoring mechanism – based on peer reviews – 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 anti-corruption efforts targeting public-sector activities. This work puts at governments' disposal policy instruments, practical tools, and 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 conflicts 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.[16]

FATF

The Financial Action Task Force (FATF) is an inter-governmental policy-making body established by the G7 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, 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, monitors the progress of its members in implementing recommended measures, reviews money laundering and 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 began 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 influencing 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 anti-corruption 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 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.[17]

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 organisations 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 anti-corruption programmes 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 anti-corruption activities.[18] 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 FDI 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.[19]

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 co-operation 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.[20] Following these guidelines, the IMF focusses 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 anti-corruption efforts has become an integral part of the IMF's work programme. Through these mechanisms, the IMF aims to support market integrity and encourage competition by eliminating or reducing obstacles created by corrupt practices.[21]

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 materialises 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 analyse 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 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 that 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 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", that is, "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. intangible investment), 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. 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, even though several of the above-mentioned 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, a lack of transparency in accounting and financial control systems (importantly including the system of taxation), and government organisations' 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 a 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 well-being 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. Conversely, where the quality of governance closely corresponds to best practices (and therefore its subversion by corruption causes significant damage), anti-corruption policy should focus on detection and on the implementation of appropriate sanctions.

Further support for a strong anti-corruption 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.

Notes

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 criminalised. 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.
2. 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 ever to be met.
3. The "control of corruption" (CC) indicator produced by the Worldwide Governance Indicator (WGI) project of the World Bank.
4. 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).
5. Cuervo-Cazurra, Á. (2007), *The Effectiveness of Laws against Bribery Abroad*, Journal of Int'l Business Studies.
6. This view is prevalent in the analysis of the relationship between corruption and FDI; see. Wei (1997).
7. The OECD project on knowledge-based capital (KBC) provides ample evidence on how growth is curtailed by barriers to entrepreneurship and innovation (OECD, 2012).
8. Low tax efficiency does not necessarily mean corruption: unilateral fraud by tax payers (tax evasion) will have the same result. The latter is increasingly recognised as a major challenge also in developed countries, closely linked to the problem of money laundering discussed in Section IV-ii below.
9. 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 CO2 emissions (-), forest depletion (-) and educational expenditures (+).
10. 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).
11. The dependent variable is real GDP growth in the Mo (2001) study and real GDP per capita growth in the other two studies.
12. The threshold value of the V&A indicator separating the high from the low quality institution regime is V&A $\approx$ 6 (measured on a 0 to 10 scale).
13. The changes over time 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 not 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 variation over time (Kaufmann and Kraay, 2002).

14. In particular, this overview does not cover the important and at times pioneering work done by international non-governmental organisations (NGOs) like Transparency International and the Extractive Resource Transparency Initiative, as well as a host of other NGOs.

15. From "United Nations Convention against Corruption," accessed at www.unodc.org/unodc/en/treaties/CAC/convention-highlights.html.

16. More information on the OECD Joint Learning Studies is accessible at:

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

18. 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).

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

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

21. "The IMF and Good Governance", accessible at www.imf.org/external/np/exr/facts/gov.htm.

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(03 2015 01 1 P) ISBN 978-92-64-23076-7 – 2015

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