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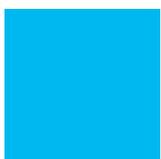
The Anatomy of Corruption Practices: A Theoretical Framework for a 'Macro' Analysis

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IACA
RESEARCH PAPER SERIES NO. 04

April 2018



IACA RESEARCH
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Laxenburg 2018

Acknowledgements

I would like to thank all IACA staff members for their invaluable suggestions on how to improve the analysis. I am particularly grateful to HanKyun Rho, Eduard Ivanov and Martin Zapata for the insights and feedback received along the way of writing this article. I would like to thank Ruggero Scaturro, Louise Gelling and Malika Ait-Mohamed Parent for the enjoyable and fruitful discussions at the Research & Science Department. I am indebted to Paul de Bijl and Johan den Hertog, and Clara De Luigi for the economic analysis and the regression models, respectively. I would like to finally extend my gratitude to all members of RENFORCE (Utrecht Centre for Regulation and Enforcement in Europe - Universiteit Utrecht) for the brainstorm of ideas and the input. Special thank you to Hyojeong Kang for contributing to making my research stay at IACA pleasant. Finally, I would like to thank Elena Helmer for her skilled editorial and scientific assistance.

This paper is the result of a multidisciplinary study carried out thanks to the IACA Research Fellowship as part of a project funded under the Siemens Integrity Initiative.

Abstract

This paper intends to expand the current scholarship on the law and economics analysis of corruption. The literature is, in fact, mainly focused on the ‘micro’ level, i.e. paying attention to the individual factors triggering corruption practices. This paper aims to develop a ‘macro’ research angle, focusing on how corruption affects markets, allocation of economic resources and society at large. This ‘macro’ perspective is complementary, and not alternative, to the ‘micro’ one.

Our ‘macro’ perspective is projected to better contextualize the causes and implications of corruption within, and between, markets and society. In fact, empirical data and anecdotal evidence show that the effects of corruption upon the allocation of resources are uncertain. Despite often resulting in sheer deviation from an optimal allocation of resources, corruption can, at times, even promote allocative efficiency of the factors of production (labour and capital) over a limited period of time (dynamic efficiency).

The main contribution of this paper relates to the examination of questions pertaining to whether and how corruption influences resource allocation *vis-à-vis* market mechanics.

In mapping out the relationship between corruption and market dynamics, we innovatively draw on the financial literature on systemic risk and macro-prudential supervision. In so doing, we elaborate upon concepts such as ‘interconnectedness’ and ‘interlinkages’ as to theorize the effects of corruption on resource allocation. This is supplemented by reference to Wolf’s taxonomy of market failures and non-market failures, and on the legal canon of literature on market regulation (i.e. the seminal framework by Morgan & Yeung).

In reconciling the ‘micro’ and the ‘macro’ perspectives, the paper eventually provides an analytical framework to aid policy- and law-makers in examining the relevant features of the market and thus adapting and tailoring anti-corruption strategies to them.

Table of Contents

Introduction 5

Defining corruption and the negative economic consequences it brings about.. 6

Literature review and analytical approaches to corruption..... 11

Theory of market failures and of non-market failures: Framework for implementation analysis 13

From inside to outside: Studying corruption from a ‘macro’ angle 16

Corruption and markets: A case study.....21

The micro and macro perspective to corruption compared22

Concluding remarks23

Bibliography.....24

Introduction

The rationale for public policy intervention lies in the inadequacies of free markets. As unfettered markets fail in allocating resources efficiently, government is called upon to step in and correct such market failures.¹

The necessary exercise of collective power through government as to cure market failures, however, opens up venues for abuse of power, eventually leading up to corruption. Up until now, economic and legal scholars characterized market failures and corruption as a *trade-off*.² Common wisdom claims, in fact, that state *inertia* (non-intervention) allows market failures to persist whereas state intervention is always associated with corruption.

This paper aims to challenge such a trade-off view. Not only is such a 'cause-effect thinking' too simplistic as to capture the complexity behind corruption, but to our mind, it also provides very limited help, if any, in prescribing therapies for it.

In redressing this over-simplification, this paper approaches corruption 'in context'. It strives indeed to develop a 'macro' strand of research, focusing on how corruption affects markets, allocation of economic resources and society at large.

Corruption practices cause the public to bear negative economic consequences (social costs), most likely leading to misallocation of resources, as a mirror-image of what market failures do³. The economic analysis of corruption and bribery shows, in fact, that corruption hinders investment (both domestic and foreign), reduces growth, restricts trade, distorts the size and composition of government expenditure, weakens the financial system, and strengthens the underground economy. As some types of incentives determine market failures, so too incentives influencing non-market organisations (governments) may cause behaviours and outcomes (government supply) that diverge the socially preferable ones.

In *certain circumstances*, however, corruption seems to work the opposite way. In fact, its occurrence results in a redistribution of labour and capital resources that increases total welfare (Becker and Stigler, 1974, p. 8).

Our working hypothesis posits on the idea that *such circumstances* relate to the characteristics of the market against which corruption occurs. The market to our mind means the set of relations between economic actors and social, political, legal, and civil institutions. Such relations form a network by which each player, and each event, sets in motion a chain of positive or negative consequences over the others and over the marketplace as such.

The net effects of corruption over the allocation of resources (a chain of either

¹ For a detailed analysis of the economic theories of regulation see, i.e., Hertog, J. 2010. *Review of economic theories of regulation*. Utrecht School of Economics, Tjalling C. Koopmans Research Institute, Discussion Paper Series 10-18.

² See, e.g., Acemoglu, D. and Verdier, T., 2000. *The Choice between Market Failure and Corruption*. American Economic Review, 90, 194-211; Williamson, O.E., "Review of Markets or Governments: Choosing Between Imperfect Alternatives", Journal of Economic Literature, 27 (1989).

³ Particularly informative in that respect is the data collected by the World Bank. See, e.g., World Bank, 1992. *Governance and Development*. Washington, DC, World Bank; World Bank, 2000. *Anticorruption in Transition: A contribution to the policy debate*. Washington, DC, World Bank; World Bank, 2004. *News and Broadcast: The costs of corruption*. Washington, DC, World Bank.

positive or negative consequences) thus depend on the interrelations and interlinkages between corruption and markets.

In the quest to identify and clarify such connections between corruption and market dynamics, we elaborate upon the concept of systemic risk. Systemic risk has been thoroughly studied in the ambit of financial markets, where the interconnections between market players are greater than anywhere else. Yet, we are inclined to believe that the theoretical underpinning behind systemic risks lends itself well to interpret the interlinkages that connect corruption occurrence to markets, and the working out of market processes. In contextualising corruption within market forces, the paper develops a macro-perspective analysis that hence draws upon the economics and legal literature in the domain of banking and finance.

The perspective introduced by this contribution, therefore, pushes the debate on the economic analysis of corruption towards a new frontier: it challenges the common view that corruption is a deviation from an optimum by contextualising corruption within market forces. It introduces corruption as a dimension of the analysis regarding the efficient allocation of economic resources.

The remainder of the paper is structured as follows.

The next section examines how the problem of definition is one of analysis. The definition of the concept of corruption determines, in fact, what gets modelled and what empiricists look for in the data. Section 3 gives an overview of the current economic scholarship, scrutinizing where we stand intellectually and some crucial shortcomings relating to the 'market failure' - 'corruption' trade-off. The theory

of market failures and of non-market failures is analysed in Section 4. The article moves on in Section 5 to formalize the 'macro' perspective on corruption practices. It integrates the concept of systemic risk into the policy debate on countering corruption. Paragraph 6 applies the 'macro' analytical framework to a case study. The article then closes with a brief conclusion.

Defining corruption and the negative economic consequences it brings about

Corruption has always been something of a conundrum to economists⁴. Despite clearly being economic in its nature and principle motivation, i.e. a personal gain, it is also determined by a wide range of institutional, psychological, cultural, and social factors (Fitzsimons, 2007, p. 87).

This complexity challenges the narrow assumptions that economics uses to model the behaviour of economic actors. In fact, the concept of 'unethical' behaviour is difficult for economists to analyse given their assumption that all individuals and organisations simply pursue self-interest opportunistically.⁵

⁴ Among those who tried to point out the difficulties associated with gauging corruption, see, i.e., Shleifer, A. and Vishny, R. W., 1994. *Politicians and firms*, Quarterly Journal of Economics, 109, 995-1026; Stiglitz, J., 2002. *Globalization and its Discontents*. London, Penguin Books; Transparency International, 2006. *About Corruption*; Tullock, G., 1989. *Controlling corruption*. Journal of Economic Literature, 27/2, 658-659.

⁵ Cressey, D. R., 1953. *Other People's Money: A study in the social psychology of embezzlement*. Glencoe: Free Press; Mauro, P., 1995. *Corruption and Growth*. Quarterly Journal of Economics, 110/3, 681-712;

Corruption takes many different forms, and the definition of it is one of the most enduring debates in legal and socio-political thoughts⁶. In fact, a very lively discussion on the precise contours of the phenomenon is still ongoing.⁷

It is quite interesting to note that the United Nations Convention Against Corruption (UNCAC) lacks a definition of corruption, despite it being the only legally binding universal anti-corruption instrument. On the other hand, Transparency International had up until fairly recently used two definitions, somehow reflecting the general confusion on the defining characteristic of corruption⁸.

McChesney, F.S., 1987. *Rent extraction and rent creation in the economic theory of regulation*. Journal of Legal Studies, 16, 101-118; North, D. C., 1990. *Beyond the New Economic History*. Journal of Economic History, 34/1, 1-7; North, D. C., 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.

⁶ For some introduction to the issue of defining corruption see, i.e., Philp, M., 1997. *Defining Political Corruption*. Political Studies, 45 (3), 436-462; Gardiner, J. A., 1993. *Defining Corruption*. In: Punch, M., Kolthoff, E., van der Vijver, K. (eds.). *Coping with Corruption in a Borderless World*. Boston: Kluwer, 21-38; Kurer, O., 2014. *Definitions of Corruption*. In: Heywood, P.M. (ed.). *Routledge Handbook of Political Corruption*. London: Routledge, 83-112.

⁷ See, e.g., Brown, N. C., Jared S. D., White, R. M. and Chad J., 2018. *Political Corruption and Firm Value in the U.S.* Available at SSRN, <https://ssrn.com/abstract=3147385>; Dimant, E. and Tosato, G., 2018. *Causes and Effects of Corruption: What Has Past Decade's Empirical Research Taught Us? A Survey*. Journal of Economic Surveys, 32(2), 335-356.

⁸ For its annual Corruption Perceptions Index (CPI), Transparency International referred to corruption as 'the abuse of public office for private gains'. This notion is the same as used by other agencies and organisations such as the World Bank. In other contexts, however, Transparency International used a more general definition, qualifying corruption as 'the abuse

Not only is corruption a thorny and blurred phenomenon, it also affects economies at local (state, regional, municipal), national and international levels. Although it has been common to focus on preventing corruption practices at a global level, for example, by promoting convergence of practices and harmonisation of regulatory tools, it is also particularly necessary to consider how corruption affects micro-transactions at a local level.

Public economics often refers to corruption as 'the sale by government officials of government property for personal gain' (Shleifer and Vishny, 1993, p. 599). Thus, as pointed out by Jain (2001, p. 81), 'it is an act in which the power of public office is used for personal gain, in a manner that contravenes the rules of the game'. Some version of such definition serves as a starting point for economic modelling. Most economic models, therefore, take a somewhat parsimonious stance, focusing primarily on market corruption and bribery. This view is, however, quite limited in scope, and many situations residing between the private and public-sector escape from being captured.

Quite recently, Pellegrini (2011, p. 78) came up with a broader definition:

of entrusted power for private gain'. In 2012, however, the definition for the purposes of the CPI has been changed and unified to the latter. Corruption refers to 'the abuse of entrusted power for private gain. Corruption can be classified as grand, petty and political, depending on the amounts of money lost and the sector where it occurs'. See UNDP, 2002. *Human Development Report: Deepening democracy in a fragmented world*. Oxford: Oxford University Press/United Nations Development Programme; UNODCCP, 2002. *Global Dynamics of Corruption, the role of the United Nations helping member states build integrity to curb corruption*, Global Programme against Corruption Conferences, Vienna.

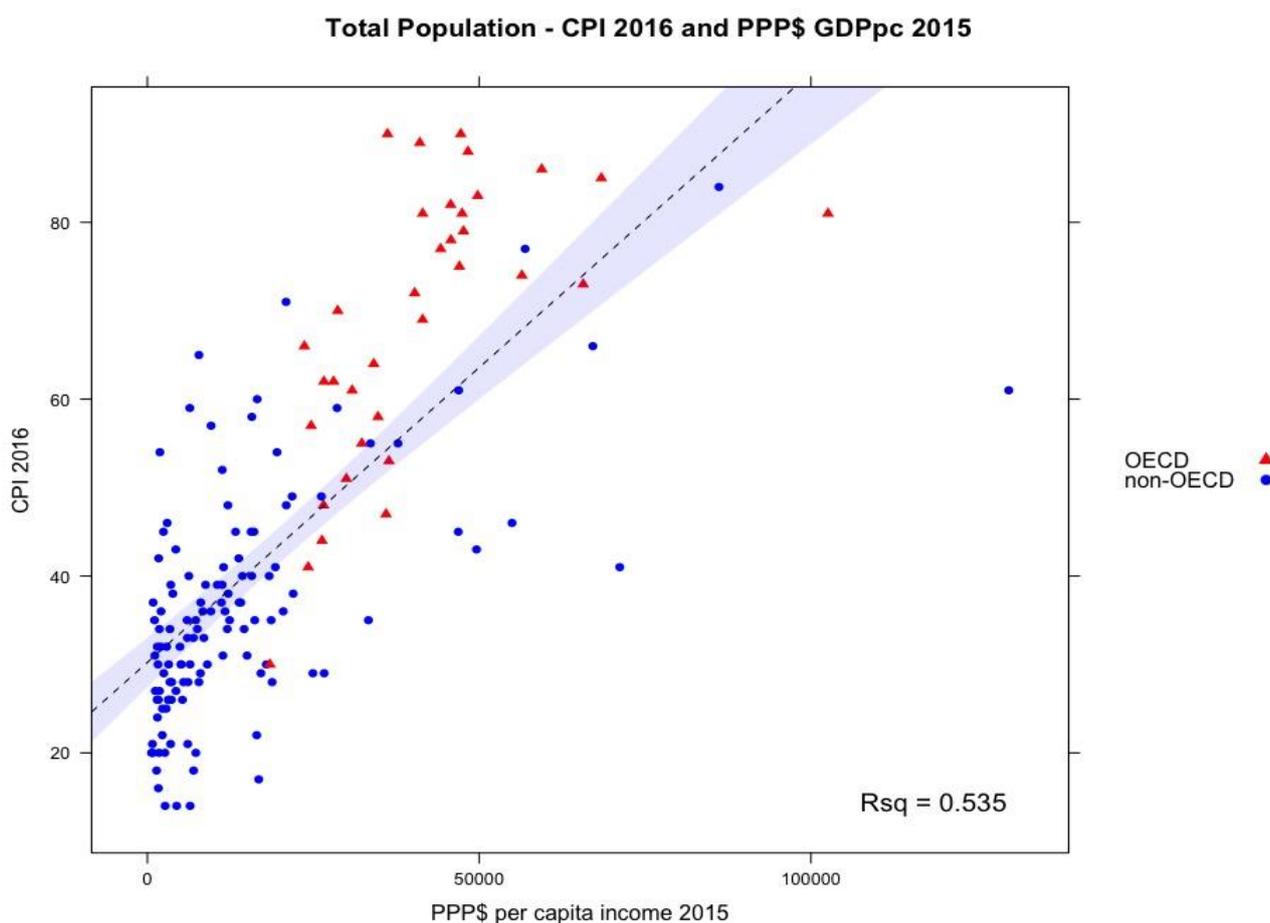
Corruption is the misuse of entrusted power for private gain; it is behaviour which deviates from the formal duties of a given role because of private-regarding (personal, close family, private clique) pecuniary or status gains; or violates rules against the exercise of certain types of private-regarding influence.

According to Pellegrini (2011, p. 80), this includes such behaviour as bribery (use of a reward to pervert the judgment of a

person in a position of trust); nepotism (bestowal of patronage by reason of ascriptive relationship rather than merit); and misappropriation (illegal appropriation of public resources for private-regarding uses).

Most importantly, the problem of definition is one of analysis. The definition of the concept determines, in fact, what gets modelled and what empiricists look for in the data.

Figure 1

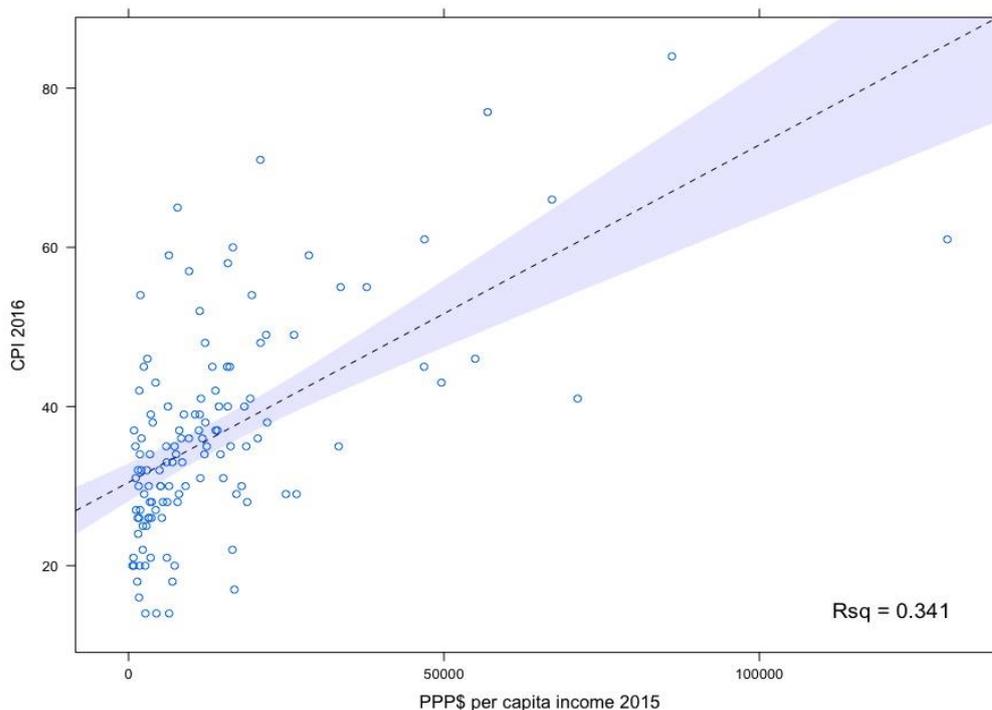


In line with previous works⁹⁹, the data shows that corruption has a strong connection to the national level of income.

Our regression indicates that Transparency International's Corruption Perceptions Index (CPI) is positively correlated with per capita incomes with an R^2 of 0.535.

Figure 2

Non-OECD Countries - CPI 2016 and PPP\$ GDPpc 2015



⁹⁹ Reinikka, R. and Svensson, J., 2002. *Measuring and understanding corruption at the micro level*. In: Della Porta, D. and Rose-Ackerman, S. (eds.). *Corrupt Exchanges: empirical themes in the politics and political economy of corruption*. Baden-Baden: Nomos Verlagsgesellschaft. See also, i.e., Gupta, S., Davoodi, H. R. and Alonso-Terme, R., 1998. *Does Corruption Affect Income Inequality and Poverty?*. IMF Working Paper, 76, 1-41; Husted, B., 1999. *Wealth, Culture, and Corruption*. *Journal of International Business Studies*, 30:2, 339-359; Paldam, M., 2002. *The cross-country pattern of corruption: Economics, culture and the seesaw dynamics*, *European Journal of Political Economy*, 18:2, 215-240; You, J. and Khagram, S., 2004. *A Comparative Study of Inequality and Corruption*, Hauser Center for Nonprofit Organizations, Working Paper No. 22; Ce S.J. and B. Williamson, 2005. *Corruption, Democracy, Economic Freedom, and State Strength: A Cross-national Analysis*. *International Journal of Comparative Sociology*, 46:4, 327-345.

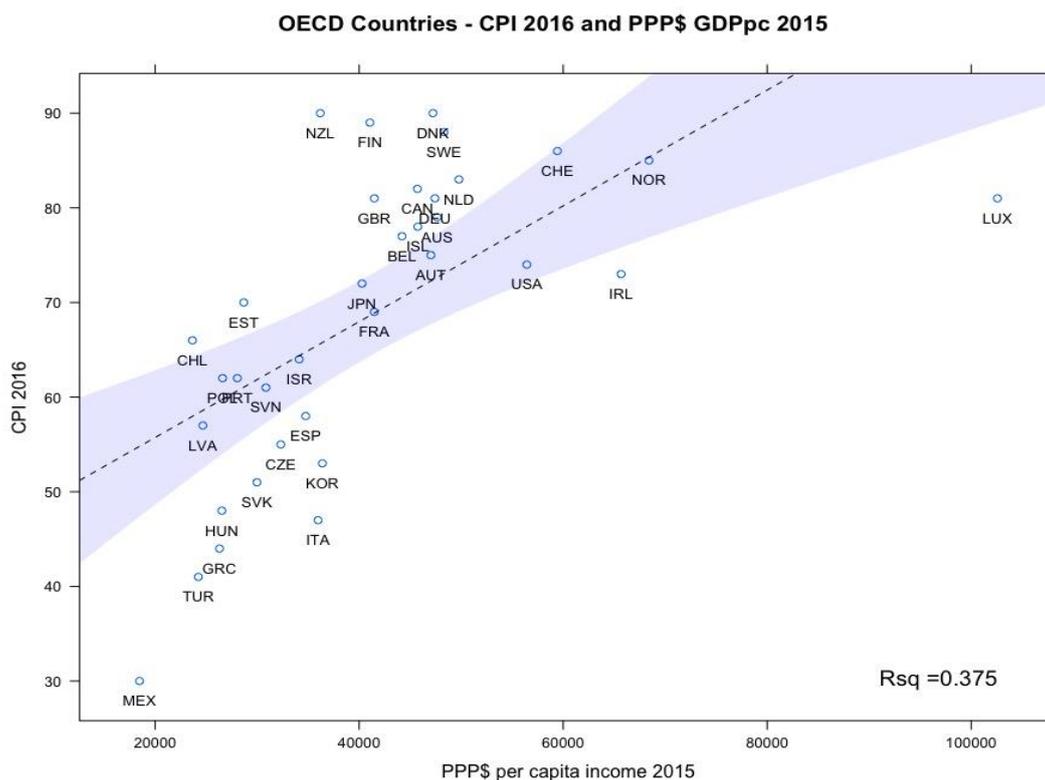
However, a number of countries lie far off the regression, some presenting better corruption levels and some worse. A large amount of OECD members lies above the regression line, with better than predicted levels of corruption.

Non-OECD countries have a similar regression line, but much higher levels of variations around it, thus, having a much lower R^2 of 0.341. It is therefore safe to assert that for those lower income countries that are commonly thought to suffer from corruption the most, income is not as an explanatory factor as it is for more developed countries.

Indeed, no particular regional group appears to over- or under-perform in terms of corruption, with wide degrees of variation apparent. The variation, despite the overall link between income levels and corruption, suggests that corruption is

highly specific to its determinants. Therefore, it requires careful analysis in a case-by-case fashion and cannot be presupposed on either regional or income grounds.

Figure 3



Reinikka and Smith (2004, p. 12) demonstrate that no reliable assumptions about the nature or extent of a country's corruption problems can be brought forward on the basis of its location alone¹⁰. In fact, according to the mean and range of corruption scores for the different regions, regional groups' ranges of corruption overlap.

¹⁰ These measures of perceived corruption are subject to the bias of members of the sample, which might give partial explanation for the remarkably good performance of OECD countries despite the evidence that many of the highest value acts of fraud and corruption in fact occur in OECD countries.

Despite the need to scrutinize the specific causes of corruption in each case, certain factors appear likely to be of general importance in determining the level of corruption in any economy. Such factors are varying and range from 'inside' (individual behaviour) to 'outside' (market dynamics) ones. This research is particularly concerned with the latter, and the next section encompasses a brief literature review of the economic analysis of corruption.

Literature review and analytical approaches to corruption

Although minimizing social costs is really what anti-corruption policy is all about (Gunnar and Thiele, 1985, p. 25), economists, as well as other social scientists and policy analysts, often display a profound ambivalence towards it.

On the one hand, the virtues of public intervention are extolled as a necessary means to increase welfare, as amply reflected and codified in the 'theory of market failures'. On the other, conventional economic analysis has been conducted along the working hypothesis that the public sector is invariably correlated with the emergence of corruption, thus blaming *how public power is relentlessly exercised*.

In fact, despite public institutions being necessarily called upon to deal with issues that cannot be solved solely by market forces, they seem fated to fail in serving their task. This ignites a vicious cycle of the failures of the markets and the failures of the governments, blurring the lines of which failures get to produce which social costs.

Economic analyses of corruption vary in terms of approaches and methodologies to the problem.

Some consider determinants of individual decision-making in the general economic, social and political environment. Others are rather concerned with influences within organisations, focusing on personal motivating and de-motivating factors. Another distinction is traditionally made between those who consider corruption to be a consequence of a principal-agent relationship, with agents' decision to

abuse their position of trust, and those who consider corruption to be a consequence of the activities of vested interests¹¹.

In reconciling the different angles, public choice economics has approached corruption from the perspective of the optimal and actual conduct of government institutions.

In that respect, the seminal contribution by Stigler has been highly influential in determining corruption.¹² According to his 'capture' theory, firms will attempt to corrupt their regulators, or 'capture' them, due to the potential for firms to gain from particular forms of regulation that may be in regulators' power¹³. From this

¹¹ Eskeland, G. and Thiele, H., 1999. *Corruption Under Moral Hazard*. Mimeo: World Bank; Prendergast, C., 1999. *Investigating Corruption*. Mimeo: World Bank; Lassen, D.D. and Alt, J. E., 2002. *The Political Economy of Institutions and Corruption in American States*. University of Copenhagen, Economic Policy Research Unit, Working Paper No. 02-16.

¹² See, e.g. Stigler, G.J., 1971. *The Theory of Economic Regulation*. *Bell Journal of Economics and Management Science*, 2, 3-21.

¹³ Regulatory capture is a wide phenomenon referring to the situation where the State privileges commercial or political concerns of special interest groups that dominate the industry or sector over the public interest. Capture may be caused subtly through the provision of information, or so called "information capture". The information imbalance between regulators and private actors, and the consequent dependency of the former on the latter, empowers industry to influence rules and standards, and tilts the outcome toward industry interests. Thus, as policy becomes more complex, and regulators become more dependent on industry, there is a higher likelihood that rules will be biased towards industry preferences. On the other hand, "representational capture" occurs when there is an imbalance in the representation of the competing interests, such as between commercial and public interests. In such cases, a regulator is at higher risk of adopting an industry friendly point of view if the only people that it hears from, or primarily hears from, are industry members. For further

perspective, strict regulation of standards imposes significant compliance costs on firms which may form barriers to the entry of new firms and thus reduce the level of competition in the market. This, in turn, permits firms to extract additional 'rents', or unearned surpluses in value, which incumbent firms share.

Along these lines, the law has been viewed as a means to cope with market failures. In fact, the government, and its action through the law, are essential for the protection of the welfare of the general public, given the existence of market failures that can be redressed by corrective government actions¹⁴.

Despite governments being called upon to counter market failures, there seems to be a consensus among scholars on the emergence of corruption. Government involvement, in fact, appears to inexorably create the potential for rent-seeking from bureaucrats to extract bribes from firms or individuals due to the excess of the value of services over their state-administered price (Krueger, 1974, p. 296). This concept simply implies that societies face the trade-off between imperfect

alternatives, i.e. market failures and corruption.

Figure 4



At the same time, market privatisation has been championed as a means of countering and preventing the occurrence of corruption. Policies favouring market liberalisation have been advanced by economists and the main international trade and policy-making bodies¹⁵, confirming such dialectic between 'market forces' and 'corruption'. The current conceptual/theoretical underpinning of anti-corruption policies at regional, national and international levels alike is entrenched in such *trade-off* between market failures and government failures.

In their contribution significantly titled 'The choice between market failures and corruption', Acemoglu and Verdier (2000) came forward with a framework based on four assumptions: i) Government is a benevolent social planner intervening to correct market failures; ii) government

elaboration upon regulatory capture, see i.e. Carpenter, D. and Moss, D.A., 2013. *New Conceptions of Capture - Mechanisms and Outcomes*. In: Carpenter, D. and Moss, D. A. (eds.). *Preventing regulatory capture: special interest influence and how to limit it*. Cambridge; McCarty, N., 2013. *Complexity, Capacity, and Capture*. In: Carpenter, D. and Moss, D. A. (eds.). *Preventing regulatory capture: special interest influence and how to limit it*. Cambridge, 98-102.

¹⁴ This is commonly known as the public interest theory of regulation. See i.e. Prosser, T., 1986. *Nationalised industries and public control: legal, constitutional and political issues*. Oxford: Blackwell; Croley, S., 1998. *Theories of regulation: Incorporating the administrative process*. Columbia Law Review, 1, 56-65; James, O., 2000. *Regulation inside governments: public interest justifications and regulatory failures*. Public Administration, 78, 327-343.

¹⁵ Cook P. and Kirkpatrick C., eds., 1988. *Privatisation in Less Developed Countries*. Brighton: Wheatsheaf; Vickers Y. and Yarrow G., 1988. *Privatization: An Economic Analysis*. MIT Press: Cambridge; Shapiro C. and Willig R. D., 1990. *Economic rationales for the scope of privatization*. In: Suleiman E. N. and Waterbury J. (eds.). *The Political Economy of Public Sector Reform and Privatization*. Westview Press: Boulder, Colorado; Boycko M., Shleifer A. and Vishny R. W., 1996. *A theory of privatisation*. The Economic Journal, 106, 309-19; Lal D., 1997. *The Poverty of "Development Economics"*, Hobart Paperback No. 16, Institute of Economic Affairs, London; World Bank, 1995. *Bureaucrats in Business: The Economics and Politics of Government Ownership*. Oxford University Press for the World Bank: Oxford.

intervention requires the use of agents – bureaucrats – to collect information, make decisions and implement policies; iii) these bureaucrats are self-interested, and by virtue of their superior information, hard to monitor; iv) there is some heterogeneity among bureaucrats. These assumptions simply imply, in the words of the authors (Acemoglu and Verdier, 2000, p. 298), that

when the market failure is important, the optimal allocation of resources will involve a certain degree of government intervention, accompanied by a large government bureaucracy, rents for public employees, misallocation of resources and corruption. In their eyes, all this ‘indicates the unavoidable price of dealing with market failures’.

Thus, in the standard example of a market failure, such as pollution, the government is called upon to tax pollution and ensure that all firms pollute less. However, since it is often costly to observe how much pollution a particular firm is causing and whether or not they took precautions, the government employs bureaucrats to collect information and basically implement and enforce the policy. By doing so, however, a principal-agent relationship is introduced, whereby bureaucrats transfer resources on the basis of the information they have and the government (the principal) does not.

This is surely part of the problem. Yet, we argue that corruption is more likely caused by articulated or mixed market-state mechanisms. Before moving to the ‘macro’ perspective, as to capture such mechanisms, we turn to the model of market and non-market failures as conceived by Wolf.¹⁶ The importance of

¹⁶ See Wolf, C., 1989. *Markets or Governments: Choosing Between Imperfect Alternatives*. Cambridge, MIT Press.

Wolf’s framework as a benchmark becomes evident when one considers that neither markets nor governments can be studied in isolation. We claim that the complexity of contributing factors determining corruption in real political and economic settings cannot be neatly classified as either market or government failures.

Theory of market failures and of non-market failures: Framework for implementation analysis

That markets are far away from producing either economically optimal or socially desirable outcomes has been elaborated in a well-known and voluminous literature.¹⁷ The main justification for public policy intervention lies hence in the inadequacies of markets as measured against the criteria of ‘efficiency’ and ‘distributional equity’ (Stigler, 1971, p. 15).

Market outcomes can be termed efficient if the same level of total benefits which they generate cannot be obtained at a lower cost (productive efficiency) or, alternatively, if greater benefits cannot be generated at the same level of costs. Either way, the resulting total benefits must exceed total costs if the outcomes are to be deemed efficient. Distributional

¹⁷ See, e.g., Bator, F. M., 1958. *The Anatomy of Market Failure*. Quarterly Journal of Economics, 72, 351-379; Aranson, P. H., 1990. *Theories of Economic Regulation: From Clarity to Confusion*. Journal of Law and Politics, 247-286; Baron, D. P., 1988. *Regulation and Legislative Choice*. Rand Journal of Economics, 19, 467-477; Barzel, Y., 1982. *Measurement Cost and the Organisation of Markets*. Journal of Law and Economics, 25, 27-48; Vickers, J. S., 1991. *Government Regulatory Policy*. Oxford Review of Economic Policy, 7, 13-30.

equity is a yardstick as to examine the formulation, evaluation and implementation of alternative public policies¹⁸.

From the perspective of policy analysis, the theory of market and non-market failures by Charles Wolf, with its fourfold taxonomy, is one of the most instructive. It serves as a conceptual analogue between the theory of market failure and the theory of non-market (government) failure. Wolf (Wolf, 1979, p. 55) conceptualizes four sources or types of market failures:

- i) Externalities and public goods¹⁹;
- ii) Increasing returns²⁰;

¹⁸ The central question relates to the standard against which to evaluate distributional equity. In fact, answers can be different depending on how equity is interpreted (in the sense of equality of outcome or equality of opportunity, 'horizontal' versus 'vertical' equity ...).

¹⁹ 'Externalities occur where economic activities create "spill-overs", whether benefits or costs, that is not appropriable by or collectible from the producer. Since these external benefits or costs do not enter the calculations upon which production decisions are based, too little output will tend to be produced where the externalities are net benefits, and too much where there are net costs compared with socially efficient output levels. Education is a classic example of positive externalities (benefits), which provide a rationale for government intervention - through subsidies or direct public sector production - to compensate for the markets tendency towards inefficient output. Chemical emissions and pollution are examples of putatively negative externalities (costs), which provide a rationale for government intervention - through taxes or direct regulation - to compensate for the markets tendency towards excessive output. In that respect, most of corruption practices comprise non-collectible costs and could be thus labelled as an archetypical public "bad". The negative externalities stemming from corruption in turn call upon government intervention'. See Wolf, C., 1979. *A Theory of Non-Market Failures*. Public Interest, 55.

²⁰ 'Where economic activities are subject to increasing returns and declining marginal

- iii) Market imperfections²¹;
- iv) Distributional inequity²².

costs, the market mechanism will also fail to generate an efficient outcome. Under conditions of decreasing costs, the lowest cost mode of production is by a single producer. In a free market, the result will be, therefore, a monopoly, and assuming single-part pricing, the outcome will be inefficient in both static and dynamic terms. In fact, statically, output will be less than efficient, and, dynamically, incentive for innovation will be weaker than would likely prevail under a more competitive regime (see Schumpeter). Where increasing returns come about, various types of government intervention may be justified to correct the market output: 1. by directly regulating a "natural" monopoly (i.e. public utilities) or by setting prices or allowable rates of return on capital; 2. by legal protection to prevent a single-firm takeover and to encourage competition'. Wolf, C., 1979. *A Theory of Non-Market Failures*. Public Interest, 55.

²¹ 'Where the price, information, and mobility characteristics of "perfect markets" depart significantly from the realities, market outcomes will not be efficient, again providing a rationale for government intervention. Where prices and rates do not indicate relative scarcities and opportunity costs, where consumers do not have equal access to information about products and markets, where information about market opportunities and production technology is not equally available to all producers, and, most importantly, where factors of production are not capable of moving in response to such information, market forces then will not allocate efficiently and the economy will produce below its capacity. In such cases, the implication for public policy is to reduce, if not remove, these imperfections. Such policy will aim to facilitate availability of information, to lower barriers to entry and mobility, and thus on'. Wolf, C., 1979. *A Theory of Non-Market Failures*. Public Interest, 55.

²² Wolf considers distributional inequity as a market failure. From his perspective, income distribution is a particular type of public good. An "equitable" redistribution does not result from freely functioning markets, since philanthropy and charity yield benefits that are not appropriable by donors. Left to its own devices, the market outcome will entail no redistribution or too little, because of the free-rider problem associated with public goods and incomplete markets. Wolf, C., 1979. *A Theory of Non-Market Failures*. Public Interest, 55.

On the other hand, Wolf suggests that alongside 'market failure' there is 'non-market failure'. Despite the fact that in the literature the same concepts are referred to as 'state failure', 'government failure' or 'non-market failure'²³, Wolf's framework is characterised by a peculiar description of *non-market processes*, which, for their very reason, make governments particularly prone to error and abuse.

Wolf listed four main characteristics inherent to non-market processes:

- i) Disjunction between their costs and revenues, resulting in rising costs;
- ii) The existence of private or organisational goals, leading to the separation between the narrow bureaucratic interests and the broader tasks the public institution has been entrusted with. These has been referred to as 'internalities';
- iii) Derived externalities that result from unexpected negative consequences of government interventions in one area on

performance in other areas ('spill-over' effects);

- iv) Distributional inequities, often indexed on power and privilege rather than income and wealth.

The inefficiencies and inequities of public institutions are different from, but not less appreciable than, those associated with markets. More specifically, corruption provokes individuals to bear costs produced by the injurers, exactly as it happens in case of negative externalities. When a corrupt practice occurs, in fact, resources are not allocated in such a way as to yield the best output, to the detriment of consumer welfare. As Wolf's argumentation goes, in both cases, the failures – whether market or non-market – are appraised against the same yardstick, that is, allocative efficiency and distributional equity judged according to some explicit social or ethical norm.

Wolf sought to attribute various kinds of non-market failure to peculiarities in underlying demand and supply conditions. Specifically, he identified several attributes of non-market demand. Most of these relate to the political context that surrounds the activities of the government bureaus, such as:

Increased public awareness of market shortcomings, political organisation and enfranchisement, the tendency for maximising politicians and bureaucrats to be rewarded for propagating interventionist solutions to perceived social problems without reference to the costs of implementation of the high time-discount of political actors (Wolf, 1989, p. 84).

In particular, Wolf's framework for non-market failures (government supply failure) lends itself well to interpret corruption, e.g. through the mix of private

²³ Arrow, K., 1974. *The limits to organisation*. Norton: New York; Weisbrod, B., 1978. *Problems of enhancing in the public interest: towards a model of government failure*. In: Weisbrod, Handler, Komesar (eds.). *Public interest law*. University of California Press, 30-41; Parker, D., 2002. *Economic Regulation: A review of issues*. *Annals of public and cooperative economics*, 73:4; Dollery, B. and Worthington, A., 1996. *The Evaluation of Public Policy: Normative Economic Theories of Government Failure*. *Journal of Interdisciplinary Economics*, 7(1), 27-39; Johansson, P., 1987. *The Economic Theory and Measurement of Environmental Benefits*. Cambridge University Press; Le Grand, J., 1991. *The Theory of Government Failure*. *British Journal of Political Science*, 21; Vining, A.R. and Weimer, D.L., 1991. *Government Supply and Government Production Failure: A Framework Based on Contestability*. *Journal of Public Policy*, 10; Williamson, O.E., 1989. *Review of Markets or Governments: Choosing Between Imperfect Alternatives*. *Journal of Economic Literature*, 27.

goals (personal incentives to generate income and perks) and distributional inequity (of power, creating room to manoeuvre).

However, incentives influencing government decision-making processes are to be evaluated against the mixed market-state mechanism so as to advance the understanding of the underlying factors and causes that produce corrupt incentives.

This paper now moves on to put corruption into a broader analytical perspective, i.e. the 'macro' analysis, and to analyse how market forces interact with corrupt practices.

From inside to outside: Studying corruption from a 'macro' angle

Corruption is a multi-faceted phenomenon caused by a wide array of factors. The elusiveness of corruption makes it difficult for politicians and scholars alike to fully understand the complexity of it. In striving to disentangle the different facets of it, our working hypothesis is based on a fundamental division between two dimensions: 'micro' factors and 'macro' factors.

Micro factors comprise key incentives and crucial variables determining the behaviour of those who engage in corrupt practices (individual incentives, rent seeking, inequities in intra-organisational allocation and evaluation of power and privilege, and so on). Corrupt behaviour can arise in a number of different forms, but the agency theory serves as the major theoretical underpinning for most of them (Wells, 2001, p. 399).

Macro factors, on the other hand, refer to the dynamic interaction between corruption and the market where corruption occurs. Not only should corruption be defined by referring to the behaviour triggering it, but also, quite significantly, by examining how corruption affects the allocation of economic resources in the marketplace. We claim that this economic, social and institutional dimension of corruption plays a pivotal role in orientating the efforts of states and international organisations in countering corruption.

Some studies have already taken this 'macro' perspective, instead of defining corruption as an individualistic action. However, they tend to confine their analyses to the *negative* impact of corruption on the economic, social, and political development of countries, due, for instance, to the increased transaction costs, the reduction in the efficiency of public services, the distortion of the decision-making process, and the undermining of social values. This is quite relevant since corruption is approached as a *social deviation* (from an optimum) only²⁴.

Empirical research demonstrates that corruption is associated with social costs and inefficiencies²⁵. However, no definitive

²⁴ Reinikka, R. and Svensson, J., 2002. *Measuring and understanding corruption at the micro level*. In: Della Porta, D. and Rose-Ackerman, S. (eds.). *Corrupt Exchanges: empirical themes in the politics and political economy of corruption*. Baden-Baden: Nomos Verlagsgesellschaft; Reinikka, R. and Smith, N., 2004. *Public Expenditure Tracking Surveys in Education*. Paris, UNESCO International Institute for Educational Planning; Allen, F., Qian, J. and Shen, L., 2015. *Corruption and Competition*. Available at SSRN: <https://ssrn.com/abstract=2685219> or <http://dx.doi.org/10.2139/ssrn.2685219>.

²⁵ See, e.g. Mauro, P., 1995. *Corruption and Growth*. Quarterly Journal of Economics, 110/3: 681-712; Mauro, P., 1998. *The Effects of*

estimate has been produced of the total impact of corruption in economic terms, due to the variety of specifications of variables of the statistical models used to estimate the costs of corruption.

In the author's view, corruption should not be necessarily accounted for as a *social deviation from an optimum*. If the optimum had to be Pareto efficiency, in fact, corruption might actually result, at times, in a better allocation of resources. The view that corruption can be efficiency-

Corruption on Growth, Investment, and Government Expenditure. IMF Working Paper 96; Wei, S.J., 1997. *Why is Corruption So Much More Taxing Than Tax? Arbitrariness Kills*. NBER Working Paper No. 6255; Wei, S.J., 1999. *Corruption in Economic Transition and Development: Grease or Sand?* UNECE Spring Seminar, Geneva, available at <https://www.unece.org/fileadmin/DAM/ead/sem/sem2001/papers/Wei.pdf>; Campos, E., Lien, D., and Pradhan, S., 1999. *The Impact of Corruption on Investment: Predictability Matters*. World Development, 27(6), 1059-1067; Kaufmann, D., 1997. *Corruption: The facts*. Foreign Policy 107: 114-131; Tanzi, V., 1998. *Corruption Around the World: Causes, Consequences, Scope, and Cures*. IMF Staff Papers, 45/4; Tanzi, V. and Davoodi, H.R., 1997. *Corruption, Public Investment, and Growth*. IMF Working Paper No. 97/139; Kaufmann, D. and Wei, S.J., 2000. *Does 'Grease Money' Speed Up the Wheels of Commerce?* IMF Working Papers No. 64; Wei, S.J. and Sievers, S., 1999. *The Cost of Crony Capitalism*. The Asian Competitiveness Report. Geneva: World Economic Forum; Johnson, S., Kaufmann, D. and Zoido-Lobaton, P., 1998. *Regulatory Discretion and the Unofficial Economy*. American Economic Review, 88(2), 387-92; Johnson, S. and Kaufmann, D. and Zoido, P., 1999. *Corruption, Public Finances, and the Unofficial Economy*. World Bank Policy Research Working Paper No. 2169. Available at SSRN: <https://ssrn.com/abstract=192569>; Gupta, S., Davoodi, H. R. and Alonso-Terme, R., 1998. *Does Corruption Affect Income Inequality and Poverty?* IMF Working Paper, 34, 1-41. Available at SSRN: <https://ssrn.com/abstract=882360>. (1998); Anderson, J. E. and Marcouiller, D., 2002. *Trade, Insecurity, and Home Bias: An Empirical Investigation*. The Review of Economics and Statistics, 84(2), 342-352.

enhancing has a long tradition in economics²⁶.

One illustrative example is the differential response by the bureaucracies in Chile and Brazil to price control for food products, introduced in the two countries during a period of high inflation in the early 1960s. In Chile, the bureaucracy enforced the freeze and food production stagnated. In Brazil, a corrupt bureaucracy effectively sabotaged the freeze and production increased to the benefit of consumers.

Such a case provides evidence of how corruption might arise to facilitate beneficial trade between economic actors that would not otherwise have been possible in the first place. This promotes allocative efficiency – despite, perhaps, begging the question of how dynamic efficiency evolves over time – by allowing agents to *correct pre-existing government failures*.

Shleifer and Vishny (1994) studied how corruption can result in promoting allocative efficiency. They come to the conclusion that corruption might indeed improve bargaining outcomes between agents in the public and private sector, in line with the logic of the Coase theorem²⁷. Their study shows that bribery is a cheap way to distribute wealth between politicians and agents in the private sector, and because of this, both parties have an incentive to maximize total wealth. In the absence of bribery, in fact, the politicians would attempt to expropriate wealth in other, less efficient ways, and the resource allocation would become politically motivated and inefficient (Shleifer and Vishny, 1993, p. 615).

²⁶ See, i.e., Aidt, T., 2003. *Economic analysis of corruption: a survey*. The Economic Journal, 113(491), 632-652.

²⁷ Coase, R.H., 1988. *The Firm, the Market and the Law*. Chicago: University of Chicago Press.

Thus, corruption might increase efficiency by allowing private sector agents to buy their way out of some of the inefficiencies that would otherwise be introduced by politicians. Bokyo *et al.* warn, however, that this does not guarantee the best allocation of resources, unless the objectives of politicians and their counterparts in the private sector reflect accurately social welfare in a broader way (1995, p. 278).

Macro-econometric findings on the relationship between economic cycles and corruption corroborate such uncertainty. On the one hand, data show that corruption is a contribution factor in worsening economic recessions or slowdowns (Akerlof and Shiller, 2009, p. 64). On the other, there is proof that recessions help contrasting illegal agreements as resources become more valuable and competitive pressure increases (Arnone and Davigo, 2005, p. 3).

Along the same lines, comprehensive studies have been conducted on the efficiency implications of corruption through its impact on growth and investment, international trade, and development. Arnone and Borlini conclude that corruption generally reduces growth and investment, skews expenditure towards public investment and away from operations and maintenance, and redirects foreign direct investment towards countries with lower corruption (2011, p. 11).

In taking a peculiar stance, we move the policy questions to the identification of the *causal connection* between corruption and market mechanism. This means that our analysis is focusing on sectors and activities that are most affected; ways in which corruption distorts the allocation of the factors of production, i.e. labour, capital; ways in which corruption hampers

the competitiveness of domestic markets and income distribution.

In declining to apply this macro-perspective angle, we draw upon the concept of systemic risk, as thoroughly elaborated by the economic and legal literature in the domain of banking and finance. Since the 'macro' perspective indeed gained great momentum in the financial sector, we consider it meaningful to integrate ideas from this field into the anti-corruption debate.

As Claudio Borio maintains, macro 'is an orientation or perspective of regulatory and supervisory arrangements' (Borio, 2003, p. 5).

Macro-perspective "means calibrating them from a system-wide or systemic perspective, rather than from that of the safety and soundness of individual institutions on a stand-alone basis. It implies to take a top-down approach and to identify the desirable output for the system as a whole and, from there, eventually to derive the optimum for the individual institutions within it. It means taking explicitly into account the fact that drivers of risk depend on the collective behaviour of the parties and actors in the market (Borio, 2003).

In his ground-breaking contribution, Schwarcz asserts that greater focus should be devoted to the marketplace and the relationship between markets and institutions, rather than to the phenomena taking place at the 'micro' level. In building up his arguments, he defines systemic risk as the situation where a 'trigger event, such as an economic shock or institutional failure, causes a chain of bad economic consequences — sometimes referred to as a domino effect that impact markets' (2008, p. 197). In the financial sector, the chain of negative economic consequences occurs because banks are

closely intertwined financially²⁸. They lend to and borrow from each other, hold deposit balances with each other, and make payments through the interbank clearing system. Because of this interconnectedness, one bank's default on an obligation to another may adversely affect that other bank's ability to meet its obligations to yet other banks, and 'so on down the chain of banks and beyond' (Schwarcz, 2008, p. 199). The ultimate objective of a macro-prudential approach to regulation and supervision is thus to avoid or minimize the costs they generate for the real economy (Borio, 2003, p. 7).

This perspective lends itself well to interpret some forms of corruption. In fact, corruption sets in motion a chain of economic, institutional and social costs, nullifying the correct functioning of market mechanisms with potential destructive consequences for the whole economy.

Thus, by synthesizing the relevant factors to the purposes of this study, we can reach a working definition of *systemic risk*: the risk that (i) a corruption act triggers either (X) the failure of a chain of markets or institutions or (Y) a chain of significant (transitory positive or) negative economic consequences, possibly producing social costs and hence (ii) resulting in a miss-allocation of resources (i.e. increases the cost or decreases the availability of capital, labour, land, and entrepreneurship).

Contagion is inherent to the systemic risk and occurs when systemic risk materializes (Martínez-Jaramillo et al., 2010, p. 2358). Contagion is the main mechanism through which instability becomes so widespread that a crisis

reaches systemic dimensions, resulting in an appreciable misallocation of factors of production and economic resources.

This implies that systemic risk boils down to transmission. The transmission is sequential, in a causal sense, as the triggering event occurs in one point of space (or one economic actor) and moves to another or others, depending on the network of relations connecting all the points (and economic actors) of the ecosystem. As well described by Smaga, 'contagion effect can therefore be defined as the probability that the instability of the given institution (instrument, market, infrastructure, financial system sector) will spread to other parts of the system with negative effects' (Smaga, 2014, p. 5).

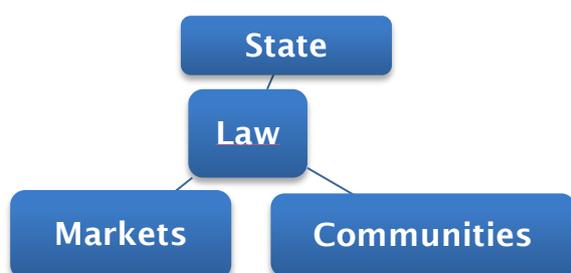
The transmission mechanism multiplies the shock resulting in a domino effect with a negative impact on the overall reallocation of resources (allocative efficiency). Contagion and transmission depend then on the various channels through which the initial shock (trigger event, i.e. corruption) spreads out.

In that respect, countering systemic risk requires, among other things, to study the level of 'interconnectedness' in a given context, and 'interlinkages' between the different actors involved. In order to detect the pattern of diffusion, it is essential to map out what Lessig (2006, p. 117) referred to as 'architecture' — that is, the code, protocols, platforms, and structures that determine how firms behave and how policy- and law-makers react. The set of relations between economic actors and social, political, legal, and civil institutions is indeed essential since it creates the network through which occurrence can ignite systemic risk and provoke social costs. Such architecture consists of a set of rules, institutions and agents who mutually interact in the management of resources.

²⁸ For a review of the multitude of systemic risk definitions in the literature, see Smaga, P., 2014. *The concept of systemic risk*. SRC Special Paper No. 5.

This is in line with the very foundational idea of the law as an instrument used by the state to achieve the community's chosen collective goals, creating and policing the boundaries of a platform for free and secure interaction between participants (Morgan and Yeung, 2007, p. 26). In that regard, the law is a "facilitator" serving as a connecting point between the different parties and actors of the market. The law hence frames the interactions, generating "the rules of the game" and whether and how each player is dependent and intertwined to the others.

Figure 5



Gaining a comprehensive understanding of the dynamics through which corruption proliferates *within* and *between* markets therefore entails an in-depth analysis of the dynamic interactions between actors and/or systems, and to the operations of forces which produce a constant tension between stability and change within a system. However, those interactions are themselves 'complex and intricate, as actors are diverse in their goals, intentions, purposes, norms, and powers'²⁹.

²⁹ Black, J., 2002. *Critical Reflections on Regulation*. Australian Journal of Legal Philosophy, 27(1); Black, J., 2003. *Enrolling Actors in Regulatory Systems: Examples from UK Financial Services Regulation*. Public Law, 63; Black, J., 2002. *Mapping the Contours of Contemporary Financial Services Regulation*.

To address common exposures and interlinkages operationally, financial policy-makers and scholars alike studied the contribution of each market player to systemic risk, once a given level of acceptable risk for the system as a whole is selected³⁰. Taking into account elements listed above, one can propose a conceptual model of 'macro' analysis of corruption. The model consists of several components. Such components might be considered as the steps of a policy 'roadmap' to gauge the intensity and likelihood of 'systemic risk':

- Triggering event (type of corruption practice, source, duration, scope);
- Institutions (legal, political and economic) affected by the triggering event or shock;
- Channels of contagion (mapping out *where* the 'triggering point' is located and what network of

Journal of Corporate Law Studies, 253, 2; Black, J., 2001. *Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a 'Post-Regulatory' World*. Current Legal Problems 103, 54; Black, J., 2013. *Seeing, Knowing, and Regulating Financial Markets: Moving the Cognitive Framework from the Economic to the Social*". LSE Legal Studies Working Paper No. 24. Available at <https://ssrn.com/abstract=2346098>.

³⁰ International Monetary Fund, "A fair and substantial contribution by the financial sector", Report to the G20, 2010; Perotti, E. and Suarez, J., 2009. *Liquidity Insurance for Systemic Crises*. CEPR Policy Insight No. 31; Acharya, V., Pedersen L.H., Philippon T. and Richardson M., 2010. *Measuring Systemic Risk*. Mimeo; Borio, C., 2003. *Towards a macroprudential framework for financial supervision and regulation?*. CESifo Economic Studies, vol. 49(2), 181–216. Also available as BIS Working Papers, no 128, 2003; Borio, C., 2011. *Implementing a macroprudential framework: blending boldness and realism*. Capitalism and Society, 6(1); Borio, C., 2014. *The financial cycle and macroeconomics: what have we learnt?*. Journal of Banking & Finance, Vol. 45, 182–198, also available as BIS Working Papers, no. 395, 2012.

relation revolves around the triggering point);

- Structural vulnerabilities (mapping out *how* the ‘point’ or ‘place’ where corruption occurred connects with the network, i.e. regulatory fragmentation, lack of enforcement mechanisms, peculiarities of the good or service subject of corruption, etc.).

Corruption and markets: A case study

In this section, we would like to apply our analytical framework to a case study. Basing it on the analysis above, we test the macro perspective by examining the TSKJ consortium case, a global cartel which successfully competed for an extremely profitable market by means of bribing members of the Nigerian government³¹.

In the middle of 1990s, Nigeria became the scene of one of the greatest cases of corruption in modern times. At that time, the country was seeking to develop the infrastructure that would allow natural gas to be transported. The TSKJ consortium won four contracts between 1995 and 2004, worth more than US \$6 billion, to build liquefied natural gas (LNG) facilities on Bonny Island, Nigeria. The government-owned Nigerian National Petroleum Corporation held 49% of the Bonny Island project shares.

The TSKJ consortium (comprising France’s Technip, Italy’s Snamprogetti, Japan’s JGC Corporation, and US’ KBR) offered Jeffrey

Tesler and JGC to pay bribes to top Nigerian government officials. According to the US Department of Justice (DoJ), TSKJ paid some US \$132 million to a Gibraltar corporation controlled by Tesler and more than US \$50 million to JGC during the course of the bribery scheme. According to court documents, JGC intended to use most of these payments for bribes to Nigerian government officials³².

The construction of the LNG facilities brought about substantial social costs, resulting in a misallocation of labour, capital and, in general, economic resources. The bribes and inducements committed over almost ten years had provoked system risk, in that it ignited a chain of negative economic consequences. They, in fact, systemically drained resources, hence impeding the investments in health, education and basic infrastructure.

Such corrupt acts were caused by a wide variety of factors.

On the one hand, ‘micro’ factors caused individuals to do what they did. From this standpoint, corrupt behaviour arose because of reasons that can be explained using the agency theory model and the principal-agent decision-making process. In fact, as elegantly put by Rose-Ackerman, ‘the person bribed’ must be necessarily acting as an agent for another individual or organisation since the purpose of the bribe is to induce him to place his own interests ahead of the objectives of the organisation for which he works’ (Rose-Ackerman, 1975, p. 187).

On the other hand, some ‘macro’ factors should be accounted for too, as they acted

³¹ For the factual background and more accurate figures see, i.e., Arnone and Borlini, 2011. *Corruption - Economic Analysis and Evolution of the International Law and Institutions*. CeMaFiR Working Paper No. 04.

³² Background on the Bonny Island project, the TSKJ joint venture and the JGC Corporation’s settlement with the US Department of Justice is described in US v. JGC Corporation, Case No. 4:11-cr-00260 (S.D. Tex.).

as a contributing factor. The corrupt behaviour arose because of the context relating to the dynamics of the markets, political and social frameworks. The treatment of natural gas is peculiar, and different from the management of other natural resources, such as, e.g. crude oil. Extracting, storing, transporting, and refining crude oil for sale requires significant investment in infrastructure. Oil is stable and easily storable in tanks, can be transported via pipeline or trucks to refineries, and can be transported anywhere in the world by train, truck or ship. The same does not hold true for natural gas. Natural gas has to be transported from the point of production to the point of consumption via pipeline. It is uneconomical to store and transport it while in the gaseous state. This entails that natural gas is a local product and it matters where it is discovered.

Another option to transport natural gas is to liquefy it. Gas liquefaction is the process by which natural gas is converted into liquid form so that it can be stored

and transported via refrigerated tanks, trucks and ships in much the same way that oil is shipped. TSKJ consortium was involved in setting up of the appropriate facilities and infrastructure through which natural gas can be liquefied.

In this episode, we believe that micro and macro determinants come together to explain the emergence of corruption. It is certainly true that public officials possessed discretionary power by which economic rents were extracted (micro elements and incentives) (Aidt, 2003, p. 624). However, 'macro' elements also contributed to the occurrence of bribery. The weak political, economic and legal institutions ('framework') allowed corruption to come about and prompted individuals to exploit their discretionary power to extract or create rents.

In the following table, we summarize and establish basic parameters and the main findings relating to the 'macro' analysis of corruption *vis-à-vis* the micro analysis.

Figure 6

The micro and macro perspective to corruption compared

	MICRO	MACRO
OBJECTIVE	Limit personal incentives to corruption (minimize agency costs)	Improve resource allocation (minimize social costs)
CHARACTERISATION OF RISK	Seen as dependent on individual agents' behaviour (endogenous)	Seen as dependent on collective behaviour, interconnections and interlinkages (exogenous)

CORRELATIONS ACROSS PARTIES AND ECONOMIC ACTORS	Irrelevant	Essential
CALIBRATION OF POLICIES AND CONTROLS	Bottom-up; in terms of risks of individual organisations	Top-down; in terms of system-wide risk

Concluding remarks

This paper surveys a range of issues relating to the law and economics analysis of corruption. The widespread disjunction between ‘markets’ and ‘corruption’ represents something of a puzzle. Up until now very scant interest has been paid to the interdependencies between corruption and the market where corruption occurs. To the contrary, we believe that the formation of law and policy to counter corruption ought to incorporate considerations pertaining to market dynamics.

This study represents the first attempt to conceptualise how corruption relates to the context within which it occurs and thus to formalise a theory of the systemic implications of corruption. From a policy-making perspective, this study demonstrates that a ‘macro’ perspective is as useful for understanding (and consequently addressing) corruption as the (prevailing) ‘micro’ perspective. In fact, some ‘macro’ factors mould the manifestation of the corrupt practice, along with ‘micro’ factors. In the case

study, bribery occurred because of the structure of the market and, most importantly, because of the very nature of the economic resource at stake, i.e. natural gas. The difficulties relating to extraction and transportation of the economic resource are but macro elements that influenced the nature and magnitude of the bribes. There are some commodities, some sectors and some market characteristics that determine the odds of corruption to occur.

Corruption is often undertaken as a means of overcoming efforts to transfer resources through regulation. Corruption tricks the market, and the legal order of the market, to transfer resources to the hands of few at the expense of community. To prevent such phenomena, policies and regulatory engagement need to scrutinise and incorporate the signals and characteristics of the market. The essence of this approach is that corruption is no longer seen as isolated from markets. Rather, the patterns of corruption are materially influenced by how the market is formed and by the set of relations between economic actors.

Bibliography

- Acemoglu, D. and Verdier, T., 2000. *The Choice between Market Failure and Corruption*. American Economic Review, 90, 194-211.
- Acharya, V., Pedersen L.H., Philippon T. and Richardson M., 2010. *Measuring Systemic Risk*. Mimeo.
- Aidt, T., 2003. *Economic analysis of corruption: A survey*. The Economic Journal, 113(491), 632-652.
- Akerlof, G.A. and Shiller, R.J., 2009. *Animal Spirits. How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism*. Princeton University Press.
- Allen, F., Qian, J. and Shen, L., 2015. *Corruption and Competition*. Available at SSRN: <https://ssrn.com/abstract=2685219> or <http://dx.doi.org/10.2139/ssrn.2685219>.
- Anderson, J. E. and Marcouiller, D., 2002. *Trade, Insecurity, and Home Bias: An Empirical Investigation*. The Review of Economics and Statistics, 84(2), 342-352.
- Arnone, M. and Borlini, L.S., 2011. *Corruption - Economic Analysis and Evolution of the International Law and Institutions*. CeMaFiR Working Paper No. 04 - 07.2011; Bocconi Legal Studies Research Paper No. 1933460.
- Arnone, M. and Davigo, P., 2005. *Arriva la Crisi Economica? Subito Spunta la Corruzione*. Vita e Pensiero, 5, 44-51.
- Arrow, K., 1974. *The limits to organisation*. Norton, New York.
- Becker, G., & Stigler, G., 1974. *Law enforcement, malfeasance and the compensation of enforcers*. Journal of Legal Studies 3, 1-19.
- Black, J., 2001. *Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a 'Post-Regulatory' World*. 54 Current Legal Problems 103.
- Black, J., 2002. *Critical Reflections on Regulation*, 27 Australian Journal of Legal Philosophy 1.
- Black, J., 2002. *Mapping the Contours of Contemporary Financial Services Regulation*. Journal of Corporate Law Studies 253, 2.
- Black, J., 2003. *Enrolling Actors in Regulatory Systems: Examples from UK Financial Services Regulation*. Public Law 63.
- Black, J., 2013. *Seeing, Knowing, and Regulating Financial Markets: Moving the Cognitive Framework from the Economic to the Social*. LSE Legal Studies Working Paper No. 24.
- Borio, C., 2003. *Towards a macroprudential framework for financial supervision and regulation?* CESifo Economic Studies, 49(2), 181-216.
- Borio, C., 2014. *The financial cycle and macroeconomics: What have we learnt?* Journal of Banking & Finance, 45, 182-198.
- Boycko M., Shleifer A. and Vishny R. W., 1996. *A theory of privatisation*. Economic Journal, 106, 309-319.
- Boycko, M., Shleifer, A., and Vishny, R., 1995. *Privatizing Russia*. Cambridge, MA and London, MIT Press.
- Campos, E., Lien, D., and Pradhan, S., 1999. *The Impact of Corruption on Investment: Predictability Matters*. World Development 27(6), 1059-1067.
- Carpenter, D. and Moss, D.A., 2013. *New Conceptions of Capture - Mechanisms and*

- Outcomes. Cambridge.* In Carpenter and Moss (eds.). Preventing regulatory capture: special interest influence and how to limit it.
- Ce Shen and Williamson, J.B., 2005. *Corruption, Democracy, Economic Freedom, and State Strength: A Cross-national Analysis.* International Journal of Comparative Sociology, 46: 4, 327-345.
- Coase, R.H., 1988. *The Firm, the Market and the Law.* Chicago, University of Chicago Press.
- Cook P. and Kirkpatrick C., 1988. *Privatisation in Less Developed Countries.* Brighton, Wheatsheaf.
- Cressey, Donald R., 1953. *Other People's Money: A study in the social psychology of embezzlement.* Glencoe, Free Press.
- Croley, S., 1998. *Theories of regulation: incorporating the administrative process.* Columbia Law Review 1, 56-65.
- Dollery, B. and Worthington, A., 1996. *The Evaluation of Public Policy: Normative Economic Theories of Government Failure.* Journal of Interdisciplinary Economics, 7(1), 27-39.
- Eskeland, G, and Thiele, H, 1999. *Corruption Under Moral Hazard.* mimeo, World Bank.
- Fitzsimons, V, 2007. Economic models of corruption. In Bracking, S. (ed), 2007. *Corruption and Development: The anti-corruption campaigns.* London, Palgrave, 83-109.
- Gardiner, JA, Defining Corruption. In Punch, M., Kolthoff, E. and van der Vijver, K. (eds), 1993. *Coping with Corruption in a Borderless World,* Boston, Kluwer, pp. 21-38.
- Gorta, A., 1998. *Minimising corruption: Applying lessons from the crime prevention literature.* Crime, Law and Social Change. 30, 67-87.
- Granovetter, M., 1985. *Economic action and social structure: The problem of embeddedness.* American Journal of Sociology, 91, 481-510.
- Gunnar, E. and Thiele, H., 1999. *Corruption Under Moral Hazard,* mimeo, World Bank.
- Gupta, S., Davoodi, H. R., and Alonso-Terme, R., 1998. *Does Corruption Affect Income Inequality and Poverty?* IMF Working Paper, 1-41.
- Hertog, J. 2010. *Review of economic theories of regulation.* Utrecht School of Economics, Working Paper N. 18.
- Husted, B., 1999. *Wealth, Culture, and Corruption.* Journal of International Business Studies, 30:2, 339-359.
- Jain, A.K., 2001. *Corruption: A review.* Journal of Economics Surveys, 15(1), 71-121.
- James, O., 2000. *Regulation inside governments: Public interest justifications and regulatory failures.* Public administration, 78, 327-343.
- Johansson, P., 1987. *The Economic Theory and Measurement of Environmental Benefits.* London, Cambridge University Press.
- Johnson, S., Kaufmann, D. and Zoido, P., 1999. *Corruption, Public Finances, and the Unofficial Economy.* World Bank Policy Research Working Paper No. 2169.
- Johnson, S., Kaufmann, D. and Zoido-Lobaton, P., 1998. *Regulatory Discretion and the Unofficial Economy.* American

- Economic Review, vol. 88, issue 2, pp. 387-392.
- Kaufmann, D. and Wei, S.J., 2000. *Does 'Grease Money' Speed Up the Wheels of Commerce?* IMF Working Papers No. 64.
- Kaufmann, D., 1997. *Corruption: The facts*. Foreign Policy 107, 114-131.
- Krueger A.O., 1974. *The Political Economy of the Rent-Seeking Society*. The American Economic Review, 291-303.
- Kurer, O., 2014. *Definitions of Corruption*. In Heywood, PM (ed.) Routledge Handbook of Political Corruption. London: Routledge, 83-112.
- Lal D., 1997. *The Poverty of 'Development Economics'*. Hobart Paperback No. 16, Institute of Economic Affairs, London.
- Lambsdorff, J., 2007. *The institutional economics of corruption*. Theory, Evidence and Policy. Cambridge.
- Lassen, D.D., and Alt, J. E., 2002. *The Political Economy of Institutions and Corruption in American States*. University of Copenhagen, Economic Policy Research Unit Working Paper No. 02-16.
- Le Grand, J., 1991. *The Theory of Government Failure*. British Journal of Political Science, No. 21.
- Lessig, L., 2006. *Code 2.0*. Basic Books, New York.
- Martínez-Jaramillo, S., Pérez, O., Ávila, F., and López-Gallo, F., 2010. *Systemic risk, financial contagion and financial fragility*. Journal of Economic Dynamics & Control, 34, 2358-2374.
- Mauro, P. 1995. *Corruption and Growth*. Quarterly Journal of Economics, 110/3: 681-712.
- Mauro, P., 1998. *The Effects of Corruption on Growth, Investment, and Government Expenditure*. IMF Working Paper 96.
- McCarty, N., 2013. *Complexity, Capacity, and Capture*. In Carpenter and Moss (eds.). Preventing regulatory capture: special interest influence and how to limit it. Cambridge, 98-102.
- McChesney, F.S., 1987. *Rent extraction and rent creation in the economic theory of regulation*. Journal of Legal Studies. 16, 101-118.
- Morgan, B. and Yeung, K., 2007. *An Introduction to Law and Regulation*. Cambridge University Press.
- North, D. C., 1974. *Beyond the New Economic History*. Journal of Economic History. 34/1, 1-7.
- North, Douglass C., 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge, Cambridge University Press.
- Paldam, M., 2002. *The cross-country pattern of corruption: economics, culture and the seesaw dynamics*. European Journal of Political Economy, 18: 2, 215-240.
- Parker, D., 2002. *Economic Regulation: A review of issues*. Annals of public and cooperative economics, 73:4.
- Pellegrini, L., 2011. *Economic Analysis of Corruption*. In Pellegrini, L. (ed.), 2011. Corruption, Development and the Environment. Springer.
- Perotti, E. and Suarez, J., 2009. *Liquidity Insurance for Systemic Crises*. CEPR Policy Insight No. 31.

- Philp, M., 1997. *Defining Political Corruption*. Political Studies 45 (3), 436-462.
- Prendergast, C., 1999. *Investigating Corruption*. World Bank Policy Research Working Paper No. 2500.
- Prosser, T., 1986. *Nationalised industries and public control: Legal, constitutional and political issues*. Oxford, Blackwell.
- Reinikka, R. and Smith, N., 2004. *Public Expenditure Tracking Surveys in Education*. Paris, UNESCO International Institute for Educational Planning.
- Reinikka, R. and Svensson, J., 2002. *Measuring and understanding corruption at the micro level*. In Della Porta, D., and Rose-Ackerman, S., (eds.). *Corrupt Exchanges: Empirical themes in the politics and political economy of corruption*. Baden-Baden, Nomos Verlagsgesellschaft.
- Rose-Ackerman, S., 1975. *The economics of corruption*. Journal of Public Economics, 4, 187-203.
- Schwarcz, S. L., 2008. *Systemic Risk*. 97 Georgetown Law Journal, 193-249.
- Shapiro C. and Willig R. D., 1990. *Economic rationales for the scope of privatization*. In Suleiman E. N. and Waterbury J. (eds.), 1990. *The Political Economy of Public Sector Reform and Privatization*. Westview Press, Boulder, Colorado, reprinted in Parker D., (ed.), *Privatisation and Corporate Performance*, Edward Elgar, Cheltenham.
- Shleifer, A. and Vishny, R. W., 1994. *Politicians and firms*. Quarterly Journal, 995-1026.
- Shleifer, A., & Vishny, R.W., 1993. *Corruption*. Quarterly Journal of Economics. 108/3, 599-617.
- Smaga, 2014. *The concept of systemic risk*. SRC Special Paper No. 5.
- Stigler, G.J., 1971. *The Theory of Economic Regulation*. Bell Journal of Economics and Management Science. Vol. 2, 3-21.
- Stiglitz, J., 2002. *Globalization and its Discontents*. London, Penguin Books.
- Tanzi, V. and Davoodi, H.R., 1997. *Corruption, Public Investment, and Growth*. IMF Working Paper No. 97/139.
- Tanzi, V., 1998. *Corruption Around the World: Causes, Consequences, Scope, and Cures*. IMF Staff Papers, 45/4.
- Tullock, G., 1989. *Controlling corruption*. Journal of Economic Literature 27/2, pp. 658-659.
- UNDP, 2002. *Human Development Report: Deepening democracy in a fragmented world*. Oxford, Oxford University Press/United Nations Development Programme.
- UNODCCP, 2002. *Global Dynamics of Corruption, the role of the United Nations helping member states build integrity to curb corruption*. Global programme against corruption conferences. Vienna, October 2002 (CICP 3, prepared by Petter Langseth, Centre for International Crime Prevention, ODCCP).
- Vickers Y. and Yarrow G., 1988. *Privatization: An Economic Analysis*. MIT Press, Cambridge.
- Vining, A.R., and Weimer, D.L., 1991. *Government Supply and Government Production Failure: A Framework Based on Contestability*. Journal of Public Policy, 10.
- Wei, S.J., 1997. *Why is Corruption So Much More Taxing Than Tax?*

Arbitrariness Kills. NBER Working Paper No. 6255.

Wei, S.J., 1999. *Corruption in Economic Transition and Development: Grease or Sand?* UNECE Spring Seminar, Geneva.

Wei, S.J., and Sievers, S., 1999. *The Cost of Crony Capitalism*. The Asian Competitiveness Report 1999, Geneva, World Economic Forum, pp. 50-55.

Weisbrod, B., 1978. *Problems of enhancing in the public interest: Towards a model of government failure*. In Weisbrod, Handler, Komesar (eds.). *Public interest law*. London, University of California Press, pp. 30-41.

Wells, J.T., 2001. *Why employees commit fraud*. *Journal of Accountancy*, Online issues.

Williamson, O.E., 1989. *Review of Markets or Governments: Choosing Between Imperfect Alternatives*. *Journal of Economic Literature*, 27.

Wolf, C., 1979. *A Theory of Nonmarket Failure: Framework for Implementation Analysis*. *Journal of Law and Economics*, 22.

Wolf, C., 1979. *A Theory of Non-Market Failures*. *Public Interest*, 55.

Wolf, C., 1983. *Non-market Failure' Revisited: The Anatomy and Physiology of Government Deficiencies*. In Hanusch, H. (ed.), *Anatomy of Government Deficiencies* New York, Springer-Verlag.

Wolf, C., 1987. *Market and Non-Market Failures: Comparison and Assessment*. *Journal of Public Policy*, 6.

Wolf, C., 1989. *Markets or Governments: Choosing Between Imperfect Alternatives*. Cambridge, MIT Press.

World Bank, 1992. *Governance and Development*. Washington DC, World Bank.

World Bank, 1995. *Bureaucrats in Business: The Economics and Politics of Government Ownership*. Oxford University Press for the World Bank, Oxford.

World Bank, 2000. *Anticorruption in Transition: A contribution to the policy debate*. Washington DC, World Bank.

World Bank, 2004. *News and Broadcast: The costs of corruption*. Washington DC, World Bank.

You, J.S., and Khagram, S., 2004. *A Comparative Study of Inequality and Corruption*. Hauser Center for Nonprofit Organizations Working Paper No. 22.



Publisher & Layout:
International Anti-Corruption Academy

 Muenchendorfer Strasse 2
2361 Laxenburg, Austria

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