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Abstract

In the literature of development economics, corruption is usually conceived as detrimental to economic growth. This conventional wisdom, however, may be called into question. Many countries witnessed growth despite corruption, e.g., commodity-dependent and high-growth East Asian countries. The paper argues, through a comparison of Sub-Saharan Africa and East Asia, that the relationships between corruption and economic growth are difficult to demonstrate. It highlights two crucial factors that explain the lack of robustness of this relationship. Firstly, this lack of robustness stems from the methods of measurement, which are usually based on the building of indices, modelling and econometric techniques. These methods are inappropriate for a concept such as 'corruption', which refers to complex and heterogeneous phenomena that are difficult to subsume in a single and stable definition.

A second set of factors underlying the weakness of the relationship between corruption and growth is the dependence of causal processes on specific contexts. The effects of corrupt practices on an economy depend on its particular history, its economic structures, its political economy and types of institutions: for these reasons, they vary across countries and regions. Causal links between corruption and growth may exist, but they are non-linear and subject to threshold effects. Beyond certain thresholds, which are built by specific contexts (i.e., the combination of many contextual factors, political, economic, institutional), corruption phenomena can be detrimental to growth; before reaching these thresholds, the impact of corruption on growth may be limited. These thresholds can be assessed only *ex post*: they cannot be measured *ex ante*, as they precisely depend on contexts that vary across space, countries and history. In some contexts, economic and political factors may reinforce each other, e.g. corruption, political instability, economic distortions and vulnerability, such as commodity-based market structures. This results in 'low equilibria' that combine low growth and pervasive corruption, and thresholds, which, once low equilibria are stabilised, it is very difficult to get out from under ('poverty traps'). In other contexts, these factors may all exist. They remain separated, however; corruption does not combine with other economic and political factors and is contained, which makes it possible for countries not to fall into 'lower' equilibria.

The state is here the core entity able to prevent the reciprocal reinforcement of corruption and other economic or political structures - and hence the formation of poverty traps -, and to make corruption subservient to growth objectives. This state capacity that can confine and control

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corruption, which exists in some countries but not in others, is a key factor in the differences in impacts of corruption on growth.

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JEL: O100; O430; K400.

1. Introduction[3]

In the development economics literature, corruption is usually conceived of as a detrimental phenomenon, and it is most often analysed in terms of its negative effects on economic growth. In particular, this perspective has been promoted by the international financial institutions (IFIs, here the IMF and the World Bank), especially from the 1990s onwards. The 1980 witnessed a sharp drop in the international price of commodities which triggered a fiscal crisis in low-income countries, as these countries are generally dependent on primary commodities for their exports. In order to maintain fiscal aggregates under control, at least minimally (e.g., fiscal deficits) the governments of these countries were obliged to call the IMF for financial relief but simultaneously to sign the reform programmes and conditionalities that the IFIs attached to this relief - thus exchanging financing for reform. These reforms consisted of stabilisation (IMF) and adjustment (World Bank) programmes, and were implemented through the 1980s. In low-income countries the success of these reforms was mixed and did not resume growth.

In view of this situation, in the 1990s, the IFIs put forth a series of explanations. In particular, the IFIs placed the emphasis on factors - notably non-economic - that had remained under-addressed up to that point in the development economics and policy-making literature. Political economy factors were therefore put forward as the principal causes of slow growth, an important one being corruption. In the 1990s economic stagnation in low-income countries was increasingly explained by widespread corruption.

This causal link has been reinforced by many academic studies that find a correlation between corruption and lack of growth or development, a recurrent example being countries of Sub-Saharan Africa. These studies are often based on econometric methods, measurement and quantification of phenomena of corruption, e.g. cross-country regressions, where growth is explained by economic and non-economic variables, including variables that are supposed to measure corruption.

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This conventional wisdom, however, may be called into question. Many countries witnessed economic growth in recent decades despite the visible presence of phenomena that can be referred to as corruption. This is the case for commodity dependent countries, as growth here is firstly driven by external factors, i.e. the international price of commodities. This was particularly clear in oil countries during the period of high-prices between 2003 and 2008. These countries enjoyed high growth rates while at the same time being affected by widespread corruption.

Moreover, commonly cited high-growth countries, notably in East Asia, exhibit phenomena that may be qualified as corruption - bribery, patrimonialism, cronyism, rent-seeking, and the like. The causality thus appears to be less simple and straightforward than the blunt findings of the econometric literature.

This paper argues that the relationship between corruption and economic growth is difficult to demonstrate. It highlights two crucial factors that explain the lack of robustness of this relationship. Firstly, this lack of robustness stems from the methods of measurement, which are usually based on the building of indices, modelling and econometric techniques. These methods are inappropriate for a concept such as 'corruption', which refers to complex and heterogeneous phenomena that are difficult to subsume in a single and stable definition. They make excessive use of econometrics and cross-country regressions between variables that are often ill-defined. Correlations between concepts that are vague, referring to heterogeneous phenomena, and not always comparable across time and space are not likely to be robust. Indeed, the results of econometric exercises strongly differ and diverge.

A second set of factors underlying the weakness of the relationship between corruption and growth is the dependence of causal processes on specific contexts. The effects of corrupt practices on an economy depend on its particular history, its economic structures, its political economy and types of institutions: for these reasons, they vary across countries and regions. Causal links between corruption and growth may exist but they are non-linear and subject to threshold effects. Beyond certain thresholds, which are built by specific contexts (i.e., the combination of many contextual factors, political, economic, institutional), corruption phenomena can be detrimental to growth; before reaching these thresholds, the impact of corruption on growth may be limited. These thresholds can be assessed only *ex post*: they cannot be measured *ex ante*, as they precisely depend on contexts that vary across space, countries and history. This explains the lack of robustness of the links between corruption and growth that are found by econometric exercises.

In some contexts, a series of economic and political factors may reinforce each other and be endogenous to each other, e.g. corruption, political instability, economic distortions and vulnerability such as commodity-based market structures. This results in 'low equilibria' that combine low growth and pervasive corruption, and thresholds, above which, once low equilibria are stabilised, it is very difficult to get out from under, as 'poverty traps' may emerge. In other contexts, these factors - e.g., corruption phenomena and others factors of slow growth -, may all exist. They remain separated, however, and do not reinforce each other; corruption does not combine with other economic and political factors, and is contained, which makes it so that countries do not

fall under thresholds that entrap them in 'lower' equilibria and may remain in 'higher' growth equilibria.

The state is here the core entity able to contain the extension of corruption, prevent the reciprocal reinforcement of corruption and other economic or political structures - and hence the formation of poverty traps -, and make corruption subservient to growth objectives. Such state capacity to confine and control corruption, which exists in some countries, but not in others, is a key factor of the differences in impacts of corruption on growth.

These arguments are explored through a comparison between stylised examples drawn from two regions of the developing world: one, Sub-Saharan Africa, includes many countries that are stagnating in the category of low-income countries; the other, East Asia, while departing from levels of growth that were similar to Sub-Saharan Africa in the 1960s, exhibited spectacular growth performances from the 1960s onwards and most Asian countries are now viewed as 'emerging' ones.

A comparison between these two parts of the world shows that East Asia has been characterised by growth-oriented governments and strong states, which have had the capacity to contain corruption and prevent threshold effects and the fall into lower equilibria. In East Asia, corruption exists but is controlled, channelled, and submitted to growth objectives because states have the capacity to achieve this. In contrast, in Sub-Saharan Africa, vicious circles and endogenous causalities may have created 'poverty traps', where weak states, predatory political regimes, generalised corruption, commodity-based market structures and windfall gains reinforce each other.

The paper is structured as follows. Section 2 examines the two important reasons, among others, explaining the weak relationships between growth and corruption, i.e. firstly, the problematic character of the definitions of corruption as well as quantitative methods, and secondly, the context-dependence of the causalities between growth and corruption, which induces non-linearity and threshold effects. The contrast between examples from Sub-Saharan Africa, where many countries are stagnating in the category of low-income countries, and East Asia is discussed in more detail in the sections 3 and 4. The paper concludes in arguing that such differences in vulnerability and impact of corruption between these two parts of the world are explained by state capacity regarding the control of threshold effects: i.e. the capacity of states to remain above a certain threshold regarding the impact of corruption on the broader economy (high equilibrium) or, in contrast, their incapacity, which may lock a country in a self-reinforcing low equilibrium of generalised corruption and low or volatile growth.

2. Conceptual issues and problems

2. 1. Taking definitional problems seriously

The key problem with the concept of corruption is the intrinsic difficulty in defining it. The concept is typically vague, which is apparent in browsing the vast literature that focuses on the issue (among the numerous reviews: Heidenheimer and Johnston, 2002;

Rose-Ackerman, 2006). As is well-known, corruption refers to a multiplicity of phenomena, e.g., bribery, embezzlement, influence peddling, over or under-invoicing, and the like, which are blurred and not easy to circumscribe. It overlaps and/or is an attribute of many other phenomena, e.g., patronage, collusion, cronyism, patrimonialism or neopatrimonialism, rent-seeking, smuggling, and so on (Sindzingre, 2007a). It refers to micro, meso and macro levels, to relationships between individuals or relationships of individuals with institutions, e.g. the state, to normative or positive assessments, to deliberate or unaware behaviour, to actions or their consequences, to active or passive behaviour.

Moreover, corruption may be 'local' or 'international', hence involving multiple levels and scopes of shared norms, from small groups to global relationships; it may involve individuals unknown to each other and in their first interactions - one-shot games - or in repeated transactions; it may imply two individuals or large networks that may transcend societies and shared norms and be fully 'global'. Corruption applies to a great variety of economic and political domains: for example, economic contracts, investment, procurement, and the like; or political regimes such as dictatorships or democracies (e.g., electoral machines). Likewise, its structure and organisational modes exhibit large variations: e.g., corruption may be 'centralised' or 'decentralised'. Equally, corruption may be 'petty' or 'grand' (Kenny and Søreide, 2008).

In addition, in a consequential perspective all these dimensions not only differ *per se*, but they differ in their effects, for example, 'grand' vs. 'petty' corruption, or centralised vs. decentralised corruption, the former having less detrimental effects than the latter, as shown by the canonical study by Shleifer and Vishny (1993). The assessment of these effects differs according to whether direct or indirect causalities are taken into account, according to the groups and the levels that are considered, and according to the number of 'players', e.g., two or a 'majority'. Petty corruption may be very harmful for the individuals involved and less harmful at the level of a state, but when aggregated it may be very detrimental for this same state; 'grand' international corruption in turn may seem to have lesser impacts on some local groups, e.g., poor peasants, but it affects such groups via many channels and spillover effects, e.g. if it has a negative impact on growth, investment or the quality of projects. Corruption hence includes multiple forms but also multiple contents, which vary in time and space and are strongly dependent on *longue durée* history. It is a phenomenon that is simultaneously individual, social, political and economic.

These multiple meanings of the concept have also been blurred by additional connotations, which came from the sphere of policy-making and its specific epistemic. Indeed, the academic discipline of development economics is typically characterised by constant exchanges between academic research and policy-makers - donor governments and agencies, multilateral, regional and bilateral -, more than other disciplines, as the process of development is massively shaped by international financial institutions, official aid, and donor policy preferences, especially in the poorest countries, such as in Sub-Saharan Africa (SSA). These exchanges strongly contribute to the formation and consolidation of particular paradigms as well as the promotion of certain themes and concepts in academic research, via, e.g., publications, conferences or projects: the latter in turn legitimise particular policies and projects (Sindzingre, 2004a).

The concept of 'governance', elaborated in the course of the 1990s, is a striking example of such blurring, as 'bad governance' progressively became a synonym of corruption. It is also a remarkable example of such exchanges between the policy and academic spheres. It has become a central concept in the academic studies of corruption in developing countries, though it was originally devised in the 1990s by donors, in particular by the World Bank, under the pressure of policy objectives and political motives: in particular, the concept of governance could explain the failure of the programmes of the international financial institutions in resuming growth in some regions in the 1990s, especially in Sub-Saharan Africa, in assigning it not to the programmes' design and the underlying economic theories but to recipient governments behaviour, e.g., corruption, leakages of public funds (Reinikka and Svensson, 2001), resistance, sudden policy reversals, and so on (Sindzingre, 2001).

2. 2. Among many theoretical approaches in development economics, the impact of corruption on growth

The concept of corruption has been analysed and enriched by new theoretical meanings by a great number of theories: e.g., in economics, principal-agent theory, game theory, theories of information, of incentives (in particular, elaborated by Jean-Jacques Laffont: e.g., Laffont, 2000; Laffont and Martimort, 2001), theories of rent-seeking and theories of 'capture', especially regulatory, state, or institution capture (Laffont and Tirole, 1988).

Theories of rent-seeking have been particularly utilised in the development economics literature; they were widely supported by the IFIs and strongly influenced their policies and reform programmes in the 1980s (Krueger, 1974). Theories of 'state capture' have also been supported by the IFIs and other policy-makers, especially after the collapse of Communist Party-states and economies, and in order to explain the drop in growth and collapse of many IFI reforms in transition countries, then being widely applied to all developing countries (Bardhan and Mookherjee, 2000; Hellman *et al.*, 2003; Sonin, 2008; Yakovlev and Zhuravskaya, 2006). Similarly, the recurrent failure of governments' or donors' programmes and projects in developing countries has been explained within the IFIs by such 'capture', as in the case of the 'local capture' of funds for schools (Reinikka and Svensson, 2004).

Above all, in development economics corruption has been investigated in the perspective of an examination of the relationship between corruption and growth, and in particular the impact of corruption on growth (Tanzi, 1998; Svensson, 2005). A few older studies argued that corruption could have beneficial effects – e.g., in 'greasing the wheels' and facilitating transactions (Leff, 1964, and more recently Lui, 1985; Beck and Maher, 1986; Lien, 1986; Egger and Winner, 2005; Meon and Weill, 2010; Vial and Hanoteau, 2010; a thesis often critiqued, e.g. by Kaufmann and Wei, 1999; Aidt, 2009). However, there is now a consensus in the literature regarding its negative consequences: the impact of corruption on growth is now typically viewed as negative (Campos *et al.*, 1999; Acemoglu and Verdier, 2000; Li *et al.*, 2000; Blackburn *et al.,* 2008) (figure 1).

Figure 1: Corruption and income
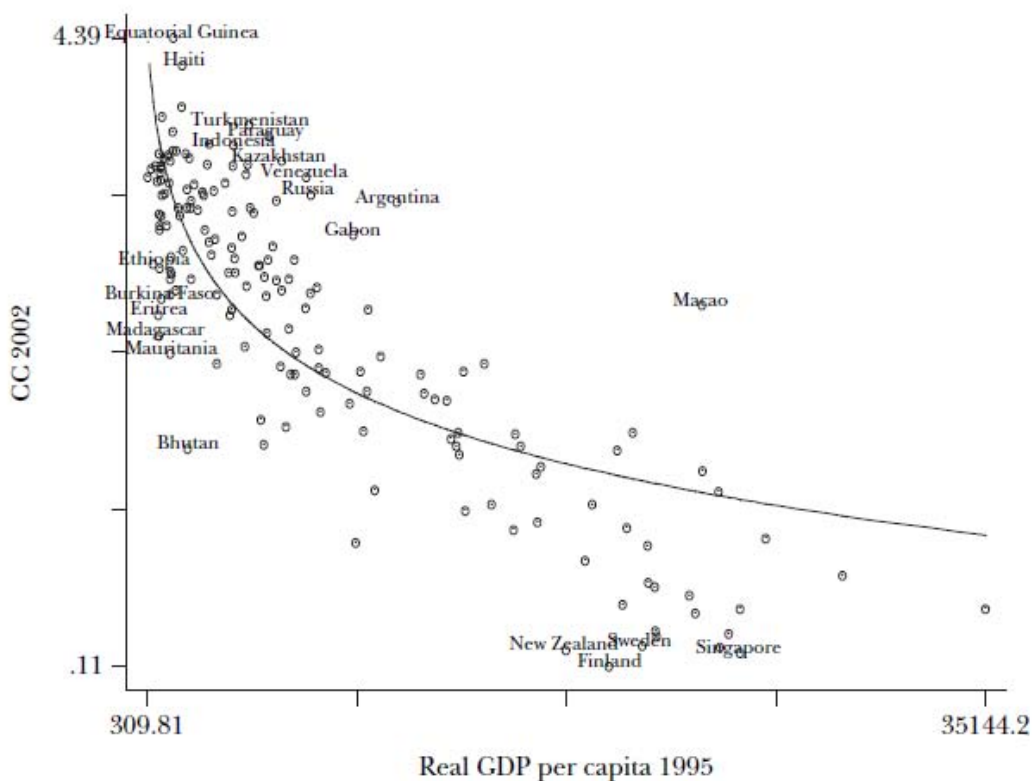
Note: the graph depicts the regression line of corruption (CC 2002) on real GDP per capita (in logarithms) 1995.

Source: Svensson (2005).

Many channels and causalities have been explored in order to explain the links between economic stagnation and corruption; and symmetrically, growth and the lack of corruption. Corruption has an adverse impact on growth because it imposes very high additional costs to any economic activity, in particular private firms, and as rent-seeking behavior induces an inefficient allocation of public and private resources, which are diverted away from productive use.

Corruption has negative effects on growth via a number of macroeconomic or microeconomic channels such as modes of foreign investment (Smarzynska-Javorcik and Wei, 2001), the composition of investment (Smarzynska and Wei, 2000) - e.g., highly capital intensive projects such as dams, roads and ports, which often became 'white elephants' - and the associated types of contracts (e.g., procurement) (Tanzi and Davoodi, 1997; 1998), detrimental effects on firm growth (Fisman and Svensson, 2007), political instability (Mo, 2001), low levels of education (Glaeser and Saks, 2004, via a comparison of US states), or types of property rights and management (state vs. market, public vs. private) - an impact of corruption on growth is found, for example, when it is associated with state-owned enterprises and infrastructure (e.g., utilities).

When corruption is assimilated to rent-seeking, a channel may be the 'underdevelopment' of institutions and absence of 'checks and balances'. Lower levels

of development are characterised by weak constraints on rent-seeking behaviour from political regimes as well as institutions (Bardhan, 1997).

Regarding these relationships between corruption and growth, a causal link has been particularly investigated in development economics, due to the popularity of the theory of the 'natural resource curse': the negative impact of natural resources as natural resources would intrinsically foster corruption, e.g., under its form of 'kleptocracy', which in turn lowers growth (Leite and Weidmann, 1999). A related channel is that natural resources foster rent-seeking behaviour, which in turn hinders economic growth (Torvik, 2002; Baland and François, 2000).

2. 3. Linking corruption with growth: serious methodological problems

In development economics, the concept of corruption is most often analysed via different families of models: in particular, at the microeconomic level, the modelling of principal-agent relationships and the stylisation of games, and at the macroeconomic level, cross-country growth econometrics.

These growth econometric models usually explain growth not only by the traditional determinants of structural or policy variables, e.g. investment, or borrowing from growth accounting models, physical capital and human capital, but by so-called 'institutional' variables. Such types of growth econometrics became popular in development economics from the 1990s onwards due to a series of reasons: in particular the consolidation of the sub-discipline of institutional economics in the line of studies by Douglass North or Avner Greif, and a widening consensus in economics that these traditional variables had difficulties in explaining the persistent stagnation of low-income countries during the 1980s-90s, especially in Sub-Saharan Africa.

Numerous studies thus explored - in addition to these traditional determinants of growth - 'institutional' variables that should be included in econometric regressions explaining growth. This was coined the 'institutional turn' in development economics (Evans, 2006) and was pioneered by key studies by Dani Rodrik (e.g., Rodrik *et al*., 2002) or Daron Acemoglu (e.g., Acemoglu *et al*., 2004), among many others. As underlined by Engerman and Sokoloff (2003), 'institutions matter', even if 'which institutions' remains debated.

These numerous studies therefore examined a multiplicity of institutional variables - economic institutions such as property rights or political institutions such as democracy vs. dictatorship - and tested their significance in growth regressions, often in comparison with other non-traditional variables such as geography or natural resources endowments, in order to assess their importance relatively to other variables - i.e. was growth in developing countries better explained by institutions, by geography, by specific policies (e.g., liberalisation) or by the more traditional variable of capital accumulation, human capital and innovation?

The debate is ongoing, as there are disagreements regarding their importance in explaining growth, even while there is an increasing consensus on the key role of institutions. One argument is that the genuine causality works the other way around, i.e. poverty causes poor institutions: income growth, human capital accumulation and

alleviation of poverty induce better institutions, and hence less corruption (Glaeser *et al.,* 2004).

For research on growth in developing countries, given the perception of its pervasiveness, and the support of IFIs as it was easily explaining the failures of their programmes, corruption was an obvious candidate among such institutional variables: corruption thus constituted a key institutional variable in many studies that tried to assess the 'true' determinants of growth via cross-country regressions.

In order to use corruption as a variable in an econometric model and to run regressions, the variable of 'corruption' had to be built, and for that, it had to be measured. This has usually been done through the building of indicators and indexes of corruption, simple or composite, in particular within the World Bank. Corruption is here typically defined and measured via indexes of 'governance' (Hellman *et al.,* 2000). The series of reports on governance elaborated by Kaufmann *et al.* (for the latest report, Kaufmann *et al.,* 2009) thus constructed a set of 'Worldwide Governance Indicators', which have built aggregate and individual governance indicators for 212 countries over 1996–2008. They measure six dimensions of 'governance': "voice and accountability; political stability and absence of violence; government effectiveness; regulatory quality, rule of law, and control of corruption", which are assumed to be discrete, separable and measurable phenomena. Similar indicators supposed to provide objective measures and a scale of corruption have been elaborated by the World Bank in its 'business climate' indicators (the annual series of '*Doing business'* reports).

These indexes, however, firstly mix a great number of different empirical phenomena. Secondly they constitute proxies of corruption that do not resemble the concept of corruption and may not even have the remotest relation with corruption. Thirdly, the indexes often rely on questionable figures and data (e.g., declarative surveys, subjective data such as 'perceptions' of investors, etc.; Andersson and Heywood, 2009). Fourthly, they use concepts without questioning the problems of definition mentioned above. Finally, they utilise various concepts that were assimilated to each other, though they clearly referred to different phenomena and exhibited only overlaps across themselves: e.g. corruption and governance.

Such indicators gather many dimensions: they lose a lot of information, however, when variables proxying for these dimensions are simply aggregated in an indicator that *in fine* is very difficult to interpret. This is emphasised by Voigt (2009) on the example of the measurement of rule of law, who moreover acknowledges that even if different dimensions of such an institutional concept are taken into account, the bivariate correlations between these dimensions are very low (e.g., separation of powers, judicial accountability, etc.). There are exceptions and studies, however, that do not use remote proxies for their modelling and have defined the variable and measured it directly via a personal collection of data (e.g., Olken, 2006; 2007 for an analysis of corruption in Indonesia).

The scientific rigour of the indicators used in these reports is called into question, and therefore the inferences that are based on them and their policy conclusions, for example, that less regulation would have a positive impact on growth and diminish corruption (Mercadal, 2005; Apaza, 2009).

In addition to the problem of the relationship between the concept of corruption and the indicators that are supposed to represent it and constitute variables of a regression, the definitional issues highlighted above show that the concept of corruption does not meet the necessary properties for being a valid variable in a regression, i.e. unambiguous separability from other phenomena, being a discrete entity, and stability in time and space. Even with purely economic variables, many economists acknowledge that explaining growth via econometric regressions is a delicate exercise: indeed, the accuracy of regressions is exposed to many risks (e.g., model uncertainty and problems of specification, Durlauf *et al.,* 2008; unjustified assumptions regarding regressors, residuals, parameters, and so on, Brock and Durlauf, 2001). Such regressions are therefore even more questionable if they use a conceptually confuse, unstable and fuzzy variable.

A crucial question is therefore that of the validity of the 'causalities' 'found' by such cross-country regressions: i.e. the question of the significance and robustness of a variable - 'corruption' - that is made of indices, which are themselves composite mixtures of different levels of human activity - macro or micro; economic, political and sociological -, which themselves refer to concepts - 'corruption', 'governance' -, the definitions of which are blurred and unstable across studies. The 'findings' of such econometrics thus remain questionable, in particular the impact of 'corruption', 'bad governance', 'weak institutions', and so on, on economic growth.

Such studies usually find that 'corruption' in general has a negative impact on growth in general (Mauro, 1995, 1996; Wei, 1997a, b). As shown by the Table 3 in annex, which reviews the main studies of the corruption-growth relationship, the findings are highly diverse, however, and highlight a multiplicity of channels. These inconclusive findings regarding the impact of corruption on growth should not be surprising, with concepts that are weakly defined and data that exhibit an excessive degree of aggregation and questionable reliability.

In addition, econometric models are challenged by empirical evidence, including casual observation, which show that there is no clear link between corruption and growth. If the detrimental impact of corruption on growth were a general 'law' that works across countries and time, in the parts of the world where corruption (e.g., of public administration) is a daily empirical experience, no country would display a positive growth rate. This, however, is not the case: Sub-Saharan Africa, for example, enjoyed remarkably high growth rates after 1995, until the global 2008-09 crisis. In SSA, real GDP grew at an average rate of 5% and real per capita GDP growth averaged about 2% between 1995 and 2007. Though not entirely - resource-poor countries also exhibited high growth rates - this growth was mainly pushed by the surge in commodity prices in the 2003-08 period, as acknowledged by the IMF (2008).

In particular, the findings of many econometric studies that conclude on a correlation between corruption and low levels of foreign direct investment are contradicted by an observation of the facts. In SSA for example, foreign direct investment goes primarily to countries that are notorious for their corruption. Indeed, foreign direct investment (FDI) goes to countries that have natural resources, in particular oil and minerals, and natural resources are a fertile ground for corrupt practices (Auty, 2001). Triggering self-reinforcing dynamics, FDI goes to resource-rich countries, which exhibited high growth

rates over the 2000s and FDI go to high-growth countries: in SSA, for example, the top recipients of FDI in the mid-2000s primarily included oil-producing countries (besides South Africa), i.e. Nigeria, Sudan, Equatorial Guinea and Angola (UNCTAD, 2008a, figure II.3), which may be viewed as paradigmatic examples of corruption, weak accountability and authoritarian regimes.

There are relationships between corruption, growth, FDI and types of natural resources but these relationships are neither necessary nor sufficient. Natural resources – e.g., oil, cocoa – may foster corruption. However, as is shown by South Africa, which is affected by problems of political corruption, procurement distortions, cronyism and so on, corruption is also pervasive in more industrialised developing countries.

2. 4. An alternative theory: the non-linearity of causalities and the existence of thresholds

Corruption exists - even flourishes - in Asia as in other parts of the world, but did not prevent economic growth. In contrast, corruption is repeatedly analysed as a pervasive problem in Sub-Saharan Africa. As Sub-Saharan Africa lags behind other regions, it has been argued that corruption, among other causes, has contributed to the hindering of growth on the continent. This contrast therefore suggests an alternative theoretical approach.

As underscored above, corruption has many dimensions, forms and contents, as is the case for a number of economic, political and social concepts. Its exact nature, extent and impact depend on the environment where the corrupt interactions occur: this environment influences and shapes the actions of corruption, while these actions, especially when repeated, modify the environment.

Such an endogeneity between corruption and its contexts reveals the possibility of non-linear processes, threshold effects, multiple equilibria, and traps ('corruption traps'). These processes work both at the macro level - corruption, for example, may be endogenous to growth, institutions, etc. - and at the micro level - it may be endogenous to the characteristics of individuals, e.g., income levels or others (group membership, etc.), as well as to characteristics of the environment. This possibility of multiple equilibria and traps is illustrated in figure 2.

Figure 2: Contrasting a single dynamic equilibrium with multiple equilibria and poverty traps

Welfare dynamics under the convergence hypothesis
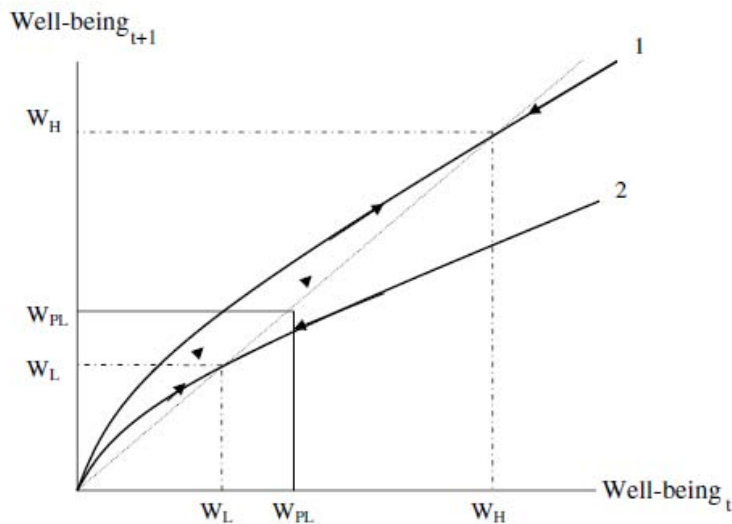
The figure above, borrowed from Barrett and Swallow (2006) summarises the assumptions of standard growth models, i.e. a single dynamic equilibrium and hence convergence of all growth paths toward a single level of welfare.

Welfare dynamics under the poverty traps hypothesis
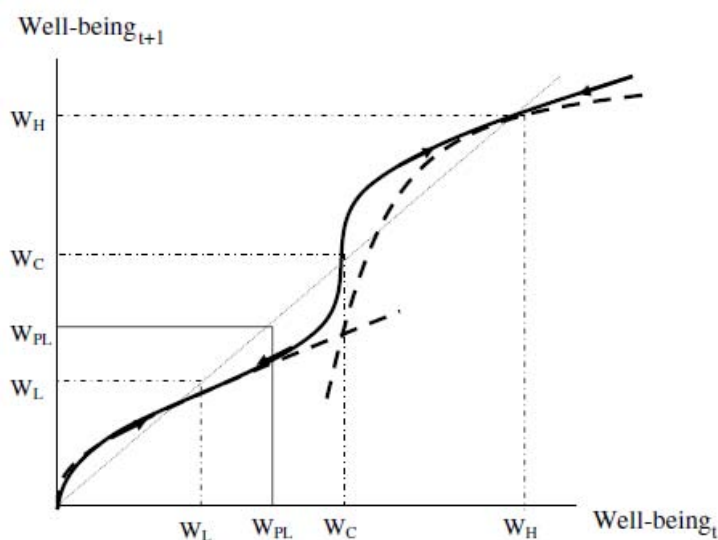
Source: Barrett and Swallow (2006).

As underscored by Barrett and Swallow (2006), in the case of multiple dynamic equilibria, the growth function becomes S shaped, with stable dynamic equilibria at high and low levels of welfare (W_H and W_L). Multiple equilibria imply at least one unstable dynamic equilibrium, a critical threshold (W_C). Barrett and Swallow emphasise that, while one returns to stable equilibria (W_H and W_L) after small shocks, one moves

away from an unstable equilibrium after a shock: the direction of change in well-being 'bifurcates' from growth to decline at the unstable equilibrium.

Below a certain threshold, a certain number of corrupt interactions remain marginal and have no incidence on the existing environment; beyond this threshold, not only the nature of the phenomena may change, due to number effects, aggregation, and so on, but these interactions transform the environment where they take place. Corruption may be analysed as an endogenous variable, and the impact of corruption on growth thus leads to multiple equilibria (as highlighted by Andvig and Moene, 1990; Ehrlich and Lui, 1999; and more recently by Mauro, 2004; Méon and Sekkat, 2005; Méndez and Sepulveda, 2006; Blackburn *et al.*, 2006; Blackburn and Sarmah, 2008; Aidt *et al.*, 2008; Haque and Kneller, 2009; Blackburn and Forgues-Puccio, 2009). Multiple equilibria in rent-seeking and income levels have already been revealed by Murphy *et al.* (1993) due to the possibility of increasing returns in rent seeking.

Economic models have some difficulty in analysing and predicting non-linear phenomena. Such non-linear, positive feedbacks and lock-in processes were explored by Arthur in his analyses of the concept of 'trap' (Arthur, 1989; 1994). For Arthur (1994), individuals linger within their beliefs according to a hysteresis pattern: beliefs are held not because they are 'true' (this is difficult to prove) but because they are not challenged. A belief is held if it has worked in the past, and it is changed only if there is a sufficient number of 'failures' in the explanatory capacity of the model.

Likewise, the economic analysis of social interactions demonstrates that effects of interactions differ according the number of players and levels of aggregation, i.e., whether the players are two or more individuals. The dynamics of this 'strategic interdependence' between the behaviour of individuals have been analysed by Schelling (1978), who demonstrated that this interdependence leads to existence of 'tipping points' that constitute thresholds: the aggregated outcome strongly differs depending on the fact that this tipping point had been reached or not (a key example having been racial segregation: white people leave a given residence area once a threshold of non-whites is reached).

As Durlauf (1996; 2003) has shown in his theory of 'neighbourhood effects', and Durlauf and Young (2001) in their deepening of the theory of social interactions, the definition and impact of a given interaction vary according to the number of individuals involved. Beliefs and behaviour reinforce each other according to threshold effects. Granovetter (1978) thus revealed that collective behaviour is subject to threshold effects according to the benefits or costs of imitating others: below a certain threshold of shared perception of similarity a belief may not disseminate, while above this threshold it spreads and there is a gain to behaving as others do. Likewise, for Glaeser (2004), similar dynamics explain the stabilisation of prejudice against certain groups, i.e., when there is a cost and therefore no incentive in not conforming to the behaviour of others.

Therefore, for a given 'group', a small number of individuals engaged in corrupt behaviour may go unnoticed and have little impact on the broader environment, economic or political. At a certain threshold, corrupt behaviour may become dominant and induce similar behaviour from other individuals who interact within this group, as this dominance is an incentive to imitation: behaving differently indeed entails high costs. The environment becomes a corrupt one that in turn constitutes an incentive to

corrupt behaviour, and social interactions become entrapped in a self-reinforcing corruption equilibrium. Such processes involving positive feedbacks may be built by a variety of channels, e.g., by inefficient redistributive policies aiming at correcting the inequalities fuelled by corruption itself, which induces more taxation and hence possibly more corruption (Alesina and Angeletos, 2005). These processes imply threshold effects, which allow for the formation of poverty traps: below a certain threshold, corruption creates vicious circles and contributes to maintain an economy in a low equilibrium.

A key implication is that the thresholds where bifurcations take place cannot be forecast and calculated *ex ante*: they can be observed only *ex post* (Sindzingre, 2007b), as the concept of corruption cannot be defined outside its context. The effects of corruption can similarly be assessed only *ex post*. Corruption is a behaviour, the definition and the content of which depend on contexts as well as the existence of certain institutions and rules. Without rules referring to honesty, for example, there is no corruption: corruption is a breach in specific institutional rules.

This contrasts with physical systems where the number of players and their rules of behaviour are unambiguously defined (as in the 'bar problem' presented by Arthur, 1999, where, when provided with rules regarding attendance, the system converges towards a stable equilibrium). In contrast with physical systems, groups and their boundaries are difficult to define *ex ante*: membership in a group varies in time and according to situations; in addition, in any society individuals belong simultaneously to many different groups (kinship, occupational, residence, etc.). The relevance of corrupt behaviour thus varies according to the situation, which exhibit various degrees of influence on an individual's behaviour stemming from, e.g., peer pressure, beliefs, allegiances, and so on.

Such arguments of context-dependence go against the usual econometric exercises that assume that corruption can be rigorously correlated with other economic aggregates, and in particular institutional variables, which are much more difficult to define and measure. Hence it is difficult to analyse corruption in relying only on growth econometrics using institutional variables. This type of econometrics is more generally not very relevant, as the impact of institutions on growth depends on their contexts, built over history and in a given space. This impact depends on the way a given institution, or a given norm - or a breach in a norm -, combines with other economic and institutional features.

3. The economic context and corruption as endogenous processes: some salient facts from Sub-Saharan Africa

3. 1. Sub-Saharan Africa's political economy: neopatrimonialism and predatory regimes

There is a vast literature in political economy on the nature of political regimes in Sub-Saharan Africa. Sub-Saharan African states have been analysed as paradigmatic examples of 'state failure'. During the 1980s, theories in political science and political

economy explained this 'failure' by history, state formation and specific features of local politics. SSA states were examples of neopatrimonialism, predation, cronyism, nepotism, patronage and clientelism, and kleptocracy. States have been described as 'quasi-states', 'vampire states', 'rentier' states, and so on.

Public choice and rational choice theories strongly contributed to a conception of SSA governments as primarily determined by rent-seeking and corruption (e.g., Bates, 1988). The 1980s witnessed the first stabilisation and adjustment programmes implemented by the IFIs in Sub-Saharan Africa (Ivory Coast, Senegal, and then most SSA economies). As is well-known, their success in resuming growth was mixed. As noted by Easterly (2001), for 12 developing countries (5 being in SSA) that received more than 15 IMF and World Bank adjustment loans over 1980-94, the median per capita growth rate over that period was zero. The adhesion of the IFIs to the rational choice framework allowed them to explain poor economic performance less by an inappropriate design of reform or any external factor than by causes internal to local political economies, especially rent-seeking and corruption. Gunnar Myrdal (1968) also highlighted the recurrence of 'soft' states in developing countries, i.e. political regimes that are unwilling (but not unable) to engage in public policies such as forced savings or the deferral of consumption gains to future generations.

In particular, as was shown by Médard's numerous studies (e.g., 1982, 2002, discussed in Sindzingre, 2007a), SSA states may be characterised by 'neopatrimonialism', defined as the 'straddling' between the public and private domains. It refers to behaviour and mechanisms that blur the public-private distinction, where state resources are 'privatised' in the sense that individuals treat them as private property. The concept of neopatrimonialism derives from Max Weber's concept of patrimonialism, which explains the difference between the institutions of Western democracies and patrimonial states: in the former, institutions ('legal-rational') are impersonal sources of individual obligations, whereas in the latter institutions are primarily the outcomes of power relationships between individuals or groups.

Sub-Saharan African economies have also been analysed as 'extractive economies', i.e., as economies based on extraction. Extractive political economies had significant negative consequences on the nature of politcal regimes, e.g., the limited reliance by governments on skilled individuals and limited policies promoting human capital. In political science, the models elaborated by Reno (1998) on 'warlord economics' (devised for Liberia, Sierra Leone, Congo, etc.) accurately describe a type of economy that is even beyond the neopatrimonialist or generalised corruption regimes, and where the state may even be irrelevant: the necessary elements are just the resources, the militias that fight for their control, international financial networks for trading those resources - and a hostage population that may be useful for extracting levies on international aid flows.

Theories of the 'predatory' state have therefore been elaborated for SSA: some countries are characterised by a low equilibrium where economic collapse and predatory regimes reinforce each other. Such predatory regimes ('pure predation') may be viewed as not only unable to foster growth but genuinely 'anti-development'. Under the constraint of a lack of legitimacy, rulers have no interest in fostering development, independent institutions or private accumulation; their interest lies in the siphoning off

of resources in order to maintain clienteles that allow them to stay in power (Robinson, 1996, with ex-Zaire in mind). The economic effects of predatory states have been extensively studied by Acemoglu and his colleagues (e.g., Acemoglu and Robinson, 2006).

Sub-Saharan African states were characterised in the decades following independence (in the 1960s) by political instability, which is an incentive for governments to lower their commitments to growth. Political instability triggers endogenous processes, as the more the political system is unstable, the less there is a commitment to growth. As revealed by Posner and Young (2007), nearly 3/4 of the African leaders who left power in the 1960s and 1970s did so as a result of a coup or assassination. The situation has significantly improved, however, as by the 1990s this number was surpassed by that of leaders leaving power through natural death, voluntary resignation, or electoral defeat. The important point is the comparison of Sub-Saharan Africa with the rest of the world: Posner and Young underscore that SSA leaders were 2 to 3 times more likely than leaders elsewhere to leave power by violent means in the 1960s, 1970s, and 1980s.

Political instability is not the only factor in economic stagnation, as the latter may be associated with a stability stemming from the high longevity of predatory rulers: Sub-Saharan African countries have been characterised by both types of political temporality (some rulers having remained in power for more than three decades). Olson (1993) famously underscored the importance of the time frame of rulers and uncertainty regarding the bifurcation of a given political economy towards either a predatory regime, or a developmental one that may allow for taxation and prospects for growth: the 'roving bandits' who destroy production and investment vs. the 'stationary bandits', i.e. 'secure' dictators that have an interest in increasing their country's productivity and wealth. In contrast, uncertainty provides no incentives to build a state, and is rather an incentive to an anti-developmental state, as consolidated institutions - e.g. judicial - go against the interest of predatory rulers and their staying in power.

These processes are compounded by a key problem in political economy that is not specific to developing countries. States are intrinsically confronted with problem of credibility regarding their policies and promises. Via the concept of time inconsistency of government policies, Nobel Prize winners Kydland and Prescott (1977) revealed the inherent 'inability to commit' of governments and subsequent lack of credibility of their policies, i.e. governments inherently cannot credibly commit to their promises. Indeed, as argued by Acemoglu (2005), the intrinsic problem of the credibility of governments stems from the absence of any meta-level above government that has the coercive capacity to enforce government policies and promises. 'Weak' states, as in Sub-Saharan Africa, are ever more weakened by this commitment problem, which in a feedback creates vicious circles as it weakens any policy that would try to reverse this situation, e.g. in reducing corruption. Acemoglu and Robinson (2006) thus emphasise the endogeneity of political and economic institutions, which may lead to stagnation: Sub-Saharan African countries have been a paradigmatic example. The lack of incentives induces low equilibria and corruption traps, which may be reinforced by cognitive processes, such as routines, habits, permanent exposure to specific behaviour.

These theories of 'endogenous policies' underscore the notion that political attitudes are determined by economic incentives: political and economic institutions result from

conflicts between groups that have diverging interests (the 'elites' and the 'citizens') and hence balances of power. *In fine*, 'agency' matters, and in particular credible rulers, i.e. who show a credible commitment to growth.

3. 2. Commodity-dependent market structures, corruption and growth: endogenous processes, threshold effects and traps

The negative impact of commodity dependence on institutions

A key characteristic of most countries in Sub-Saharan Africa is their specific market and export structure, i.e. a structure based on the production and export of commodities. The export of commodities often represents more than half of total exports.

UNCTAD (2008b) defines the dependency rate as the average ratio of the 4 main commodity exports value/total exports value for the period 2003-2005. A dependency rate above 50% implies that more than 50% of export earnings come from the 4 commodities: more than half of all developing countries rely on 4 commodities for 50% of their exports earnings; 31% rely on 4 commodities for more than 75% of their export earnings. In Africa, 34 of the 52 countries are more than 50% dependent. The highest dependent countries - having a dependency rate above 80% - are West African countries and Western Asian countries, due to their exports of oil. A few agricultural products such as cotton, cocoa and coffee also created high dependence in some African countries, such as Benin and Burkina Faso, with a dependency rate above 65%.

Sub-Saharan Africa entered a period of economic stagnation with a growth performance lagging behind the rest of the world from the mid-1970s (figure 3).

Figure 3: Africa vs. the world, 1960–2000, GDP per capita index
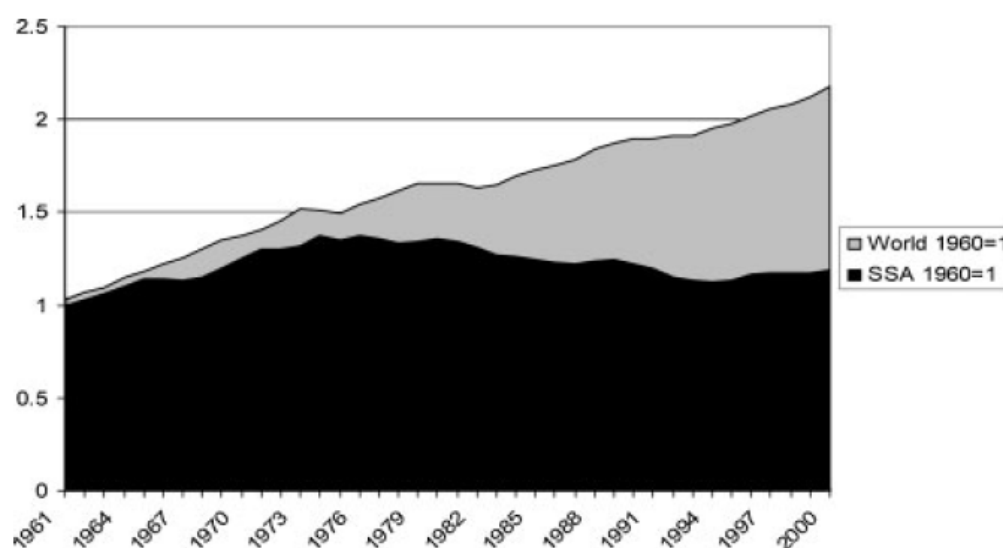
Source: Jerven (2009), based on the World Bank World Development Indicators (2007). Data: GDP per capita; 1960=1; constant 2000 US$ annual growth per cent.

Commodity dependence is viewed by many economists as the root cause of the slow growth that affected Sub-Saharan Africa from the mid-1970s onwards. Maizels (1984; 1987) underscored the intrinsic instability of commodity markets, as well as the long term decline in the trend in the commodity terms of trade. He also emphasised the increasing role of the financialisation of commodity markets, which constitute a key explanation of the price volatility that occurred during the 2000s, and *in fine* of the 2007-08 financial crisis (Nissanke, 2010). This negative causality works along different channels: in particular, i) economic channels such as the negative impact of the intrinsic volatility of commodity prices on countries' fiscal management, debt and hence growth, as well as these countries' vulnerability to international prices fluctuations; ii) political economy channels stemming from the financialisation and opacity of international commodity markets (Sindzingre, 2010), which expose these markets and commodity-dependent countries to corruption.

In Sub-Saharan African commodity-dependent countries, foreign direct investment is mainly focused to the commodity sector – oil, mines, etc. -, which is often controlled either by the local political regime or by multinationals that need to maintain good relations with local politicians, and which facilitates corruption in the process. As underscored by the United Nations (2008), in the past decade foreign direct investment was concentrated in a handful of countries, notably - South Africa, Nigeria, Angola, Sudan, Equatorial Guinea, Chad, the latter of these being oil states that are notorious for their weak accountability and transparency. South Africa, Nigeria and Angola alone have represented about half of total net FDI from 1994 to 2005. A large proportion of FDI goes to the oil sector. Over the last 15 years, 70% of FDI has been invested in 5 out of the 7 African oil-exporting countries as well as in South Africa.

The theory of the 'natural resource curse' popularised in the 2000s (in line with Sachs and Warner, 1995, among others in this vast literature) has given rise to a great number of studies on the relationship between natural resources and predatory regimes, natural resources and corruption (Auty, 2006), and natural resources and conflict. Endowments in primary resources may fuel corruption while both factors fuel civil wars: rebels are more likely to fight governments that are weak and corrupt with the goal of seizing power, along with the resources, and rewarding their followers with these resources (Herbst, 2000b). There may be an endogenous relationship between market and export structures based on natural resources on the one hand, and corruption on the other: this nexus 'natural resources-predatory regimes-generalised corruption' typically fosters vicious circles and poverty traps.

A natural resource such as oil is often viewed as particularly favourable to the spreading of corruption to an entire economy (Arezki and Brückner, 2009). One may indeed argue that there is a relationship between the type of natural resource and the extent of corruption. Natural resources concentrated in 'point sources' (e.g., oil) are easier to control and foster corruption more than resources, such as agriculture, that are more disseminated (Isham *et al.*, 2005), although this may be debated in regard to corruption scandals that have affected agricultural sectors such as cocoa.

A slightly distinct conceptual framework elaborated in the 1990s also argues that factor endowments and geographical characteristics have been detrimental to the political,

institutional and economic development of Sub-Saharan Africa. Herbst (2000a) thus emphasised the endogeneity of the state in relation to geography. The poor growth performance of SSA states may be explained via structural characteristics, such as initial conditions and endogenous outcomes (or both, e.g. demography). Geography and demography underlie 'state failure' in SSA, i.e. its incapacity to provide public goods such as law and order, contract enforcement or infrastructure. For example, low demographic densities hinder the construction of state authority. On this score, the abundance of land that characterised SSA in pre-colonial states made it so that exit options were always possible. States were built through loyalties and shaped by the costs of expanding power. After independence, boundaries were set by the colonial powers and political leaders were early affected by challengers and instability.

As highlighted by Robinson (2002), Herbst's theses are in line with the arguments of Tilly (1990), who revealed the links between population density, land scarcity and the formation of nation-states, including bureaucracies, fiscal systems and state institutions. The nexus land-abundance-labour-scarcity that prevails in Sub-Saharan Africa is in sharp contrast with East Asia; it is an element of explanation of the contrast between the recurrence of 'weak' states in Sub-Saharan Africa vs. the existence of consolidated states in East Asia. In Sub-Saharan Africa the combination of these characteristics over the *longue durée* accounts for a mutual reinforcement of factor endowments, weak institutions and economic stagnation.

Combinations matter, not elements taken in isolation

The combination of these different elements result in low equilibria, where pervasive corruption weakens state capacity while weaker governments become increasingly unable to contain corruption and key players of this corruption (Sindzingre, 2004b). Corruption may be generalised to all levels of political structures, until the lowest decentralised levels (Brockington, 2008, on the example of Tanzania). Weak governments may 'capitulate' faced with generalised corruption (Van Rijckeghem and Weder, 1997). This may especially be the case in low-income countries that are confronted with very limited revenues and resources for paying civil servants, and which choose to pay low wages or not even pay them, as often happens in certain SSA countries (e.g., Central African Republic, the Democratic Republic of the Congo, and others). Corruption traps develop, which lead to poverty traps, with corruption, collapsed states and poverty being endogenous to each other and mutually reinforcing.

Endowments, however, are 'no fate', as underscored by Nugent and Robinson (2001) on the example of coffee exporting economies of Latin America. The strong differences between these economies in the 19th century demonstrate that they were more determined by the legal system that organised access to land, which resulted from differences in the nature of political competition, than geography and factor endowments.

Market structures based on commodity production and export do not *per se* cause low growth, failed state institutions or corruption. It is the combination of these market structures, economic and political institutions (such as inequality), determinants of growth such as human capital, and the political power relationships between the groups

composing a society, which results in a state of affairs of contained vs. widespread corruption. SSA countries are indeed characterised by high inequality and low levels of education, especially in terms of quality (Schultz, 1999). This has often been compounded by a weak demand for educated labour (Bennell, 2002): such labour market structures may have been reinforced by a market structure based on the production of primary resources, which is biased towards unskilled labour. The existence (or discovery) of natural resources and their windfall gains disturbs the prior distribution of political power and economic rents between the various groups in a given country, as economic structures and political regimes are endogenous to each other.

For example, as Englebert and Ron (2004) demonstrate in regard to the Republic of the Congo (Brazzaville) and the civil war that affected the country in the 1990s, the objective of securing oil rents contributed to the conflict but oil wealth alone was insufficient in inducing this war, which was triggered by the uncertainty generated by democratisation and which disrupted previous neo-patrimonial political ties. More than a commodity such as oil, the political violence and economic collapse that occurred in the Congo have been *in fine* determined by the destabilisation of previous political balances of power.

Ex ante, taken separately these elements may have limited effects on growth and the economy. When combined with each other, they are subject to threshold effects that *ex post* induce lock-in processes and traps. Weak states, policies that are ineffective - as rulers and institutions lack credibility -, corruption, and commodity-based economic structures reinforce each other.

4. Corruption and growth: some lessons from East Asia

The key point is that in East Asian countries cronyism, collusion, bribery, and embezzlement neither prevented the triggering of growth in its initial phases after the WWII nor its continuation until the 21st century. Corruption of course exists in all parts of the world, and East Asia is no exception. In Japan, South Korea and Taiwan, corruption is widespread under multiple forms and contents.

These countries exhibited spectacular growth performances from the 1970s onwards, at a time where Sub-Saharan African growth began to lag behind the rest of the world (tables 1 and 2, taken from Jerven, 2009).

Table 1: Total GDP indices by regions 1960–1975

1960=100	World	South Asia	East Asia	OECD	Latin America	Africa
1965	130	122	117	131	127	130
1970	171	150	164	170	168	166
1975	204	170	224	200	228	208

Table 2: Total GDP indices by regions 1975–1990

1975=100	World	South Asia	East Asia	OECD	Latin America	Africa
1980	121	119	138	119	130	114
1985	137	156	195	135	133	120
1990	164	209	268	160	146	136

Source: Jerven (2009), based on the World Development Indicators (2002). Data: total GDP (constant 2000 US$) annual growth percent.

These countries have been analysed in the economic and political science literature as 'developmental states'. These states pursued specific developmental strategies from the 1960s onwards, which were based on state intervention in the economy, export-led growth, and active industrial policies, and were associated with spectacular growth rates (Japan, South Korea, Taiwan; Johnson, 1982; Amsden, 1989; Wade, 1990; Woo-Cumings, 1999) (figure 4).

Figure 4: The emergence of developmental states: average growth of GNP per capita, 1965-90
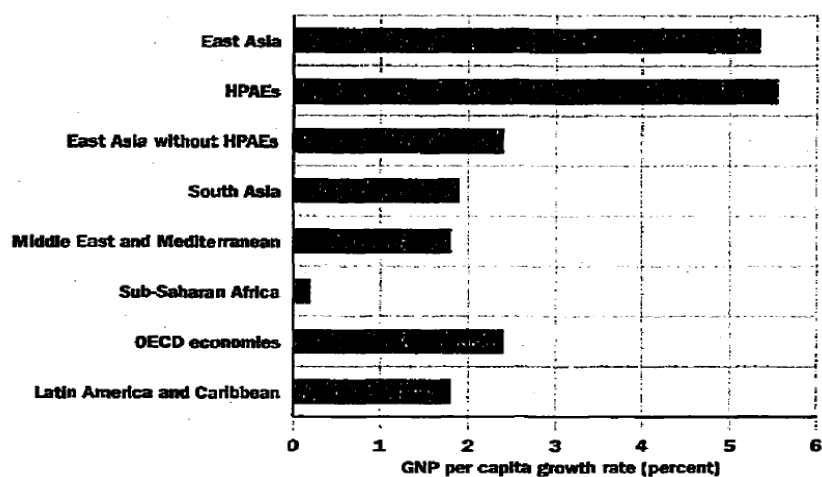
Source: World Bank (1993) (HPAEs: High-performing Asian economies)

These countries may be viewed as sharing commonalities. It has indeed been argued that Japan's successful experience after WWII was a model for East Asian countries that aimed at achieving a similar catch-up process based on 'late-industrialisation', despite their differences and even antagonisms, with Japan having induced spillover effects regarding the organisation of civil service and infrastructure (Kohli, 1994). Mainland China is now often included in the developmental state category due to common features (importance of state intervention, industrialisation, rising export competitiveness, fast GDP growth).

Regarding Japan, for example, Dore (1967) underscored the relationships of a 'quasi-corruption' nature between politicians, bureaucracy and interest groups. Such a 'triangular scheme' was also emphasised by Van Wolferen (1990). South Korea and

Taiwan also are not immune from corruption, whereas China appears to be affected by pervasive corruption - which would be, for some observers, culturally enshrined in the tradition of social relationships based on personal networks of influence (*guanxi*).

It may be argued, however, that the contents, functioning and effects of corruption - its general 'regime' - differed from those found in other regions: corruption appears to have been of a 'productive' type and to be subservient to governments' central policy objective, i.e., growth (Sindzingre, 2002; 2005). In this regard, it may be compared with the 'productivist' modes of social protection prevailing in Asia and analysed by Kwon (2005). The threshold and lock-in effects induced by corruption have been controlled, i.e., the fall in a trap of generalised corruption from which countries have difficulty in getting out.

4. 1. Corruption as a dimension of wider public-private relationships

Corruption in East Asia exhibits two characteristics. Firstly, the state constitutes the main origin and space of corruption: corruption is primarily 'public', i.e., is carried out by the state. States have fostered 'developmental' trajectories, however, and corruption has been subordinate to the main target of governments' political agendas, i.e. growth. Secondly, the political economy of corruption is embedded in long-lasting state-business relationships.

Corruption in East Asia mainly refers to government corruption

Corruption encompasses a variety of institutional, political and administrative contents. In East Asia, the state is the privileged locus for corruption, with political and 'public' modes of corruption prevailing. It tends to be a 'local' phenomenon even if foreign private agents may be part of the game as 'outsiders'. What matters here are political connections between 'insiders' (civil servants and politicians) on the one hand, and 'outsiders', on the other.

This 'public' corruption involves two levels within the government: firstly, the central government; secondly, either provincial, regional, or lower levels of the government. These lower government levels are numerous in mainland China, due to its continental size (village, township or county).

On the one hand, 'centralised' corruption refers to politicians, in contrast with bureaucrats who are more immune due to self-restraint and shared norms of 'public service', this contrast being a possible outcome of the 'developmental state' strategies. Governments of developmental states have fostered the autonomy of the bureaucracy *vis-à-vis* politicians (Evans, 1995). State intervention put forward the notion of 'public service', of which education and training, particularly within the civil service, were central components: civil servants graduated from the best universities (e.g., Todai University in Japan, Seoul National University in South Korea) and constituted an experienced and respected elite. East Asia is characterised by the social importance of education: for example, subordinates in the civil service may be reluctant to work for an uneducated person. In Japan, accepting cash payments is easily viewed as 'vulgar': such behaviour is expected from politicians but not from civil servants.

Post-retirement jobs granted to Japanese civil servants (*amakudari* in Japanese) could be an exception, as this practice may stem from a corrupt use of discretionary powers. Anecdotal evidence, however, suggests a low level of bribery. This practice might have facilitated close and stable relationships between bureaucrats and corporate executives when industrial policies were a key objective of the Japanese government in the 1960s and 1970s (Johnson, 1982).

Similarly, in China the imperial scholar-official tradition taught bureaucrats to feel superior to their business clients and to exercise leverage with them through patron-client solidarities. China, however, differs from the other developmental states as it is a transition country, from a centrally planned economy to a semi-market economy. The combination of a semi-market economy, a weak legal system, and ill-defined property rights provides room for corruption (Knight, 2008).

On the other hand, 'decentralised' corruption embraces either politicians or bureaucrats, in particular through the allocation of public financial resources and taxation. It may also take the form of administrative corruption, as in China (Guo, 2008). When bureaucrats indulge in fraudulent practices, however, the sums involved are negligible. The legacy of the past explains such restrained behaviour, as shown by the case of Taiwan where personal connections may be 'sweetened' with money (Wade, 1990). Likewise, Myrdal (1968) argued that corruption in Asia could be explained by underlying anthropological causes where gift and returned gifts are often non-symmetrical.

The electoral system in Japan, particularly its multimember district system for the election of deputies, may be an example. It bears a systematic bias toward clientelism as Japanese politicians have been forced to focus on grassroots constituent support for votes as well as campaign funds (Calder, 1993). It is based on a complex network of patron-client (*oyabun-kobun* in Japanese) relationships. Members of both houses of the Diet had to maintain local support groups to keep in touch with public opinion and gain votes and financial backing. Hence, success depended less on political programs than on the so-called 'three dimensions system' (*sanban*): a well-organised constituency (*jiban*), a briefcase full of money (*kaban*), and a prestigious appointment (*kanban*) (Eisenstadt and Roniger, 1980). Political stability has been recognised as an important component for economic growth, particularly for developing countries (Przeworski *et al.,* 2000): in this perspective, *kaban* has not been counter-productive in terms of political stability and may even be viewed as instrumental to smooth and long-lasting relationships.

A related question refers to the impact of decentralisation on corruption levels, i.e. whether decentralisation reduces corruption or not, which remains a matter of debate (Bardhan and Mookherjee, 2006). Mainland China is a case in point, due to its gigantic size and its decentralisation process put in motion in 1978 as part of economic reform. The central state started to shed its hypertrophied central responsibility while deepening its provincial presence. Corruption channelled towards the pockets of local governments developed at the provincial and municipal levels due to new power granted to bureaucrats and also the dramatic surge of economic activities in rural areas. Indeed, market liberalisation enhanced the actualisation of a community of interests between public authorities and economic agents at the local level, which was more difficult in the previous context of a centralised system (Shambaugh, 2008). Corruption, however,

has not been counter-productive to this new trend as bureaucrats were benevolent and supportive of entrepreneurship, particularly in the 1980s (Huang, 2008). Township and Village Enterprises mushroomed across rural China, being a significant component of GDP increase and simultaneously yielding sizeable welfare gains in poor areas (Qian and Weingast, 1996; Huang, 2008). In the 1990s, China accelerated its economic growth even if it was confronted with higher levels of corruption at the local and provincial levels.

Overall, public corruption in East Asia does not appear to be significantly different from corruption that flourishes in other developing countries or even, to a lesser extent, in developed countries. For example, donations to politicians or political parties aimed at extracting favouritism are usual. There is, however, a fundamental difference in terms of economic outcomes: it did not prevent robust economic growth, rising living standards, or subsequent poverty alleviation: according to official Chinese sources, the number of rural poor in China fell from 250 million in 1978 to 34 million in 1999 (Huang, 2008). The World Bank (2009) confirms China's remarkable performance in reducing extreme poverty: between 1981 and 2004, the fraction of the population consuming less than a dollar-a-day fell from 65% to 10%, and more than half a billion people were lifted out of poverty. Indeed, the economic achievements of East Asian countries are spectacular in comparison with other developing countries.

The political economy of corruption: state-business collusion

East Asian developmental states relied on specific types of relationships between public and private agents: stable relationships of collusion have been set up in regard to the sharing and allocating of public resources (Johnson, 1987). When both groups are strong and concentrated (in mainland China, social and political boundaries are more blurred), their situation of 'mutual hostages' fosters the compatibility between growth and corruption, as both sides may benefit (Kang, 2002b, on South Korea; for East Asia, Rock and Bonnett, 2004). Indeed, developmental strategies were 'result-oriented' rather than 'rule-oriented'.

Corruption resulting from state-business collusion is well illustrated by factual evidence across East Asia. Japan has a long record of fraudulent practices affecting prominent politicians who, in some cases, have lost their official position or even been arrested (Van Wolferen, 1990): e.g., from the so-called first 'Lockheed scandal' in 1957[4], to the 'Recruit scandal' in 1988[5] (Hayes, 2009). South Korea has also been affected by a great number of corruption cases, which involved high profile officials who had developed close ties with family founders of major *chaebol*[6].

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[4] In which the Finance Minister Eisaku Sato was implicated in favoritism and bribery with a US company, Lockheed Corp.

[5] With Prime Minister Noboru Takeshita, among others, being involved.

[6] For example, in 1996 former President Roh Tae-Woo was sentenced to 22.5 years' imprisonment on charges of corruption (and also for his pivotal role in the repression of the Kwangju uprising of 1980) but was pardoned in late 1997. He had collected political donations amounting to 650 million of dollars from businesses as contributions to his secret governing fund while being in public office between 1988 and 1993 (*The Economist*, 1996).

The political economy of corruption, significantly, encompasses foreign private companies. Developmental states focused on the promotion of an endogenous growth and therefore had a pro-national tilt. They regulated inward foreign investment or discouraged it (as in Japan). Although China attracted large amounts of foreign direct investment flows, it yet monitored them carefully and checked whether these FDI flows had a positive impact on growth and development. In such a domestic institutional setting politicians were the best candidates for foreign firms when they were seeking to obtain the right connections with local firms or bureaucrats.

In sum, the forms and contents of corruption in East Asia mainly refer to the state, its policies and officials. They have to be understood in the context of a strong state and the associated legitimacy and credibility, sustained growth and rise in living standards, which were common characteristics to these countries. In addition, alliances between politicians and private groups were supporting a nationalistic consensus that has been particularly appropriate to a 'catch up' process.

4. 2. The weak linkages between corruption and economic growth

Corruption as a phenomenon subservient to economic growth

Overall, corruption in East Asia appears to be subordinate to economic growth. In some contexts, it may even have fostered growth, particularly its acceleration. This challenges the consensus that prevails in many academic studies, and especially within the international financial institutions and their recommendations regarding the implementation of aid. The objectives of East Asian states were high growth rates and more generally development, with a quasi-engineering approach. These objectives were supported by policies relying on governments' commitments to visible outcomes (Johnson 1982), as was the case in Japan: Hayato Ikeda, for example, when appointed Prime Minister in 1960, committed to and succeeded in doubling the national income over the ten subsequent years (Sumiya, 2000).

'Developmental states' implemented development strategies, especially industrial policies (Sindzingre, 2007c). They were 'entrepreneurial states' that were engaged in 'creating winners' (Wade, 1990). Industrial 'catch up' policies involved targeted taxation, protection, limitation of foreign shareholding, incentives for the banking sector and firm financing, and training in technology: these policies relied on long-term relations between political power and the private sector, as well between banks and public and private firms, according to a model of 'alliance capitalism' (Dunning, 1997; Wade, 2000). Industrial policies were characterised by long-term flexibility while relying on short-term, rigid, regulatory measures (Dore, 1986; Chang, 1995). In China, for example, a deliberate policy of the Communist Party after 2001 was the recruitment as full members of entrepreneurs from the private sector (Dickson, 2003).

State intervention aimed at economic growth as growth was instrumental in building political legitimacy (Kang, 2002a on the example of South Korea). For example, governments made a political use of the provision of social welfare: they built up social policy institutions and welfare programmes also for domestic political motives, i.e. strengthening their legitimacy and building political support, as in South Korea (Kwon, 1999; Yang, 2000).

Corruption in public works projects is revealing of the complexity of the relationship between growth and tolerable corruption. Corruption in the construction industry occurs in East Asian countries outside of China through the overcharging for correctly built structures[7], while in mainland China (and also in India), by contrast, it occurs mainly by the lowest standard construction of correctly priced structures (Rose-Ackerman, 2006). The relatively high level of corruption exhibited by East Asian countries in the construction industry is driven by two main factors. A first factor is a high growth regime fostered by a large amount of investment outlays in plants, public works, industrial parks, business offices, and housing estates. Indeed, developmental policies have been based on a high physical investment/GDP ratio. According to the annual reports of the Japanese Economic Planning Agency, Japan invested 33% of its GDP in the apex of its high growth period during the 1970s. China invested even more in the 2000s, with about 50% of its GDP (China Statistical Yearbook, 2008).

A second factor stems from the collective status of property rights on land in China, which may foster corruption. Corruption here is the underlying determinant of the expropriation of people from their land in rural areas, which has been the cause of a great number of forced evictions to cities. This is also the case in cities, and as emphasised by Cai *et al.* (2009) urban land is owned by the state: leasehold use rights for land for (re)development, which are sold by city governments, are a key source of city revenue, and leasehold sales are major opportunities for corruption. The development of the Pudong area in Shanghai was grounded on land expropriation of legitimate owners by local officials who colluded with corrupt real estate developers. The type of development exemplified by Pudong has been replicated all around the country and spurred a construction boom in the 2000s (Huang, 2008). Since 2000, the Chinese central government has imposed limits on illicit expropriation of arable land by local governments (Rose-Ackerman, 2006).

Collective ownership, however, is only part of the story. For example, India has also witnessed land seizure and subsequent conflicts in rural areas, due to the set up of Special Economic Zones dedicated to industrial development (Sau, 2008). The possibility of arbitrary seizure of property - land, house - is indeed a recurrent characteristic of developing countries - including democracies - when oligarchies and interest groups have a significant influence on political decisions.

The penalising of corruption when tipping over a threshold

It may be argued that corruption - in essence an opaque phenomenon - is in East Asia made public and sanctioned beyond a certain threshold, and that therefore, 'public' corruption always seems under control. Two main reasons may explain this remarkable achievement: the social routines related to the 'developmental state' on the one hand, and explicit objectives pursued by government officials on the other.

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[7] However, the devastating impact of the Kobe earthquake in January 1995 revealed that Japan could also endorse 'Chinese practices' in public construction. Likewise, the collapse of the Sampoong Department Store in Seoul in June 1995, killing hundreds of people, demonstrated the existence of corrupt practices in South Korea (bribes were given to city inspectors).

'Public' corruption is constrained by the economic rules and objectives of the developmental state, i.e., growth, as well as by the norms that organise social networks in Chinese societies (e.g., preserving individual reputation within these networks) and the Party's goal of maintaining internal discipline (Shambaugh, 2008). In developmental states, rents have been channelled into production, as shown by Bhagwati (2000) and Baumol (1990) on the difference between 'productive' versus 'unproductive' rents. As far as interest and 'client' groups do not practice a generalised and systematic corruption that can be detrimental, directly or indirectly, to growth, the state does not use its coercive power to put an end to it.

Bureaucrats and to a lesser extent politicians have internalised that there are thresholds for bribery and red lines that cannot be crossed. Governments in East Asia have seemed able to promote national development and interest in terms of multiple equilibria, and to modify their policies and adapt their commitments accordingly. They have targeted a 'high equilibrium' through developmental policies, e.g., high investment and industrialisation. These high targets are viewed as desirable not only for economic reasons but also for political ones. Economic performances strengthen political legitimacy and credibility, and to a certain level counterbalance public perception of rampant rent-seeking activities and of corruption. As a result, government policies aim at systematically avoiding a fall into a lower equilibrium. If corruption is perceived to derail an equilibrium that is viewed as optimal and to pull it down to a lower equilibrium, governments intervene to crack down on corruption. Holz (2008) underlines that there is a rationale for Chinese authorities to tackle problems when the need for action becomes urgent. Moreover, as shown by Guo (2008), there is evidence of a direct relationship between corruption and a level of law enforcement that derives from (and supports) national political goals: indeed, in 1989, after the Tiananmen Square events, corruption was receding whereas, in 1992, after Deng Xiaoping's tour in the Southern provinces that accelerated the economic reform agenda, corruption expanded again. Corruption in East Asia has to be understood within this general scheme (Guo, 2008).

This argument may be made more explicit with a couple of examples. In China, government officials pursued policies that experimented learning-by-doing (Naughton, 1996; Holz, 2008) and tolerated fraudulent practices, particularly in the 1980s. Significantly, this permissive stance emerged just after the end of the 'Cultural Revolution' in 1976. Evidence can be found in the development of informal finance, which was viewed by officials as a useful complement to the Chinese banking system due to the latter's inadequacies (Lardy, 1998). In order to keep control of the experimental process towards a market economy, however, officials had to periodically crack down on corruption, as was the case, e.g., after the uncovering of fraud and Ponzi pyramid schemes in 1985 and 1986 that caused large financial losses (Tsai, 2002). The Japanese government also intervened in order to keep control of 'public' corruption, including recently. The 'Recruit scandal', for example, which burst in 1988, involved many prominent politicians[8] (Hayes, 2009).

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[8] At the onset, the chairman of Recruit, a human resources firm, offered a number of shares in Cosmos, a Recruit subsidiary, to senior politicians shortly before it went public in 1986. Following the IPO, Cosmos' share price skyrocketed. Among the politicians involved in corruption (insider trading) were

Two key points have therefore been emphasised here. Firstly, East Asian countries show that corruption may not have an adverse effect on growth. Remarkable economic performances have gone hand in hand with 'public' corruption. Secondly, governments have been aware of the fragility of growth as a targeted 'high equilibrium': hence they monitor corruption levels and implement sanctions when these levels threaten the overarching goal, i.e., economic growth.

5. In conclusion: the impact of corruption on growth depends on threshold effects, and *in fine* political institutions and state capacity

The paper has thus highlighted, firstly, a series of contrasts between the two regions, Sub-Saharan Africa and East Asia, regarding the economy, political economy and corruption processes. The contrast is sharp between East Asian developmental states, where policy core objective was - and still is - long-term growth via active industrial policies, and many Sub-Saharan African states, which are characterised by commodity-based market structures and political economies suffering from short-term time frames, political instability and rulers focused on their personal enrichment - and sometimes even predatory and anti-developmental regimes.

These latter countries exhibit all the ingredients of genuine poverty traps, as individual rational expectations (given past events) and processes of path-dependency make it so that public policies are affected by a low level of credibility. In a context of economic and political instability, predatory behaviour may be rational: structural change is very difficult here, even if governments devise sound policies, e.g. in terms of economic growth, of the improving of political institutions or curbing corruption. These elements generate vicious circles and poverty-corruption trap: getting out of them, as highlighted by Arthur and the other theoreticians of traps, entails much higher costs then improving growth rates when a country is already on a steady growth trajectory.

Secondly, the contrast between East Asia and Sub-Saharan Africa reveals two key determinants of the differential impact of corruption: the existence of an effective state as well as the nature of political regimes and institutions. For the extension of corruption to be contained, for corruption not to become decentralised among an infinite number of players levying on each transaction - which leads to the generalised collapse of production as in the Shleifer-Vishny model (1993) -, for preventing corruption to be so pervasive that it stabilises entire economies in a low equilibrium, in corruption traps, and below a threshold that becomes quasi-impossible to cross, there is a need for a state - an effective and strong state. Without an effective state, the very concept of containment and control, the possibility by a government of an assessment of thresholds and limits not to be stepped across, is impossible.

Prime Minister Noboru Takeshita, former Prime Minister Yasuhiro Nakasone, and Chief Cabinet Secretary Takao Fujinami. The Takeshita's cabinet was forced to resign. The 'Recruit scandal' had also a collateral damage, i.e., the victory of the opposition party in 1993, and the resulting end of the dominance of the Liberal Democratic Party in Japanese politics which had lasted uninterrupted for 38 years (Hayes, 2009).

In addition, in order to overcome trap formation and the weight of institutional and political path dependency, strongly committed political regimes appear to be essential. Within the factor of an effective state, the nature of the political regime matters. Authoritarian regimes thus may be able to confine corruption under certain thresholds, as is the case in China, but others are not: many authoritarian regimes are indeed trapped in pervasive and uncontrolled corruption, suggesting some relevance for the conventional model of benevolent rulers *à la* Olson. Likewise, democracies with weak states have difficulties in containing a possible fall to a low equilibrium, as shown by many SSA low-income countries that exhibit formal democratic institutions, including elections, parliaments and so on. Many Sub-Saharan African countries here appear to be ensnared below these tipping points.

Developmental states, as shown by Kang regarding South Korea, exhibited pervasive political corruption and authoritarian, even military regimes: but growth has been instrumental for political legitimacy. In China as well, the Communist Party keeps a part of its legitimacy from its capacity to provide citizens with economic growth and master the thresholds beyond which corruption is a threat for this growth. Collusion may even be a politically rational strategy that enhances national consensus, which may be positive for growth, and was at the foundations of the Japanese take-off in the 1950s. These growth trajectories include vulnerabilities, however, as corruption may have unexpected negative effects - economic and political - in the current context of global competition, economic imbalances and financial fragility.

A third crucial point is the endogeneity between the strength and quality of state institutions and corruption. Similarly, there is an endogeneity between growth and the type of political regimes, i.e. predatory corruption versus a 'productive one. Exact thresholds that would hold in every space and time and for all countries cannot be determined *ex ante*: they depend on historical and political contexts, and in contrast with non-linear physical systems, they can be assessed only *ex post*.

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Table 3: The relationships between corruption and growth: the diversity of the findings

Studies	Region, period	Methodology	Mechanisms	Causalities
Acemoglu and Verdier (1998)	General	Modelling	Government failure; misallocation of talent	Negative impact of corruption on growth
Aidt (2009)	60-80 developing and developed countries, 1970-2000	Cross-country regressions	---	Negative correlation between growth in wealth per capita and corruption; little effect of corruption of growth rate of GDP per capita
Aidt *et al.* (2008)	General; 67-71 developed and developing countries, 1996-2002	Threshold model estimating the impact of corruption on growth with corruption being an endogenous variable.	The impact of corruption on growth is conditional on the governance regime: high impact in high quality political institutions regimes, no impact in low quality institutions regimes. Conversely, growth reduces corruption	Non-linearity of the corruption-growth relationship.
Andvig and Moene (1990)	General	Modelling	Impact depending on the cost for bureaucrats of being corrupt	Various impacts, multiple self-fulfilling equilibria of corruption; corruption as a cause of poverty trap
Beck and Maher (1986)	General	Comparison of an equilibrium model of bribery with a competitive bidding model	Isomorphism between bribery and competitive bidding on the supply side of the transaction	No difference between corruption and bidding in terms of efficiency
Bardhan (1997)	General	Review of the literature	-----	Both impacts, positive and negative, may be possible
Bhagwati (2000)	General	Analytical	Rent creation vs. profit sharing	Corruption both harmful or beneficial
Blackburn *et al.* (2006)	General	Dynamic general equilibrium model	Incentives for corruption depend on economic activity, which in turn depends on corruption	Corruption causes multiple development regimes
Blackburn *et al.* (2008)	82 developed and developing countries, 1980-1999	Dynamic general equilibrium model	Impact through a public finance transmission channel: corruption takes the form of the embezzlement of public funds, which	Negative effect of bureaucratic corruption on growth

			increases the government's reliance on seigniorage finance, hence increases inflation, hence induces a portfolio reallocation away from capital towards money, hence reduces growth	
Blackburn and Forgues-Puccio (2009)	General	Dynamic general equilibrium model	Growth is endogenous through the invention of new goods based on research. Corruption depends on the extent to which bureaucrats coordinate their rent-seeking.	Variable impact of corruption. Countries with organised corruption networks display lower levels of bribes, higher levels of research activity and higher growth than countries with disorganised corruption
Blackburn and Sarmah (2008)	General	Overlapping generations model	Endogenous determination of bureaucratic corruption, development and demographic transition: the survival probability depends on the provision of public goods and services which may be compromised by corrupt public officials	Multiple development regimes, with feasible or not transition between them: low (high) levels of development are associated with high (low) levels of corruption and low (high) rates of life expectancy
Campos *et al.* (1999)	Firm survey, 3700 firms, 69 developed and developing countries	Cross-country regression	Distinction between predictable and unpredictable corruption; negative impact of unpredictable corruption on investment, hence on growth	Negative but variable impacts of corruption on growth
Dzhumashev (2009)	141 countries, 2000-2007	Cross-country regression	The negative effects transmitted directly through the change in the total factor productivity and indirectly through the public sector inefficiencies dominate the positive effect through increased investment,	Both positive and negative effects of corruption on growth, but overall effect is negative

			perhaps due to collusive corruption that allows firms to overcome regulations	
Egger and Winner (2005)	73 developed and developing countries	Cross-country regression	Corruption circumvents regulatory and administrative constraints; "helping hand effect"	Positive relationship between corruption and FDI: corruption as a stimulus for FDI
Ehrlich and Lui (1999)	General; 152 developed and developing countries, 1960-1992	Two equilibrium models of endogenous growth; growth cross-country regression	Impact of corruption on growth defined as accumulation of human and political capital	Non-linear relationship between corruption, government and growth
Fisman and Svensson (2007)	Uganda, data set on the estimated bribe payments of 243 firms, 1998	Model of the relationship between firm growth and bribery payments	---	Both the rate of taxation and bribery negatively correlated with firm growth
Glaeser and Saks (2004)	United States, data set on the number of convictions, 1990 and 2002	Regression	---	Weak negative relationship between corruption and income growth.
Haque and Kneller (2009)	54 developed and developing countries, 1980-2003	Threshold model	Breakpoints around which the relationship between corruption and development changes, influenced by the existing culture of corruption	Threshold effects, multiple equilibria, 'corruption clubs': i) a two-way causal negative relationship between corruption and development; ii) development traps arising from resource appropriated by public officials; iii) corruption is more variable among countries at intermediate stages of development due to cultural differences; iv) a change in culture leads to the collapse of the thresholds
Kaufmann and Wei (1999)	General; 3 global firms surveys, 1537 to 3866 firms, 41 to 48 countries,	Model based on a Stackelberg game	Bribe payment causes more management time wasted with bureaucrats and higher cost of capital	Refutation of the 'efficient grease' or 'speed money' thesis:

	1996 and 1997			
Leff (1964)	General	Analytical	Corruption circumvents regulatory and administrative constraints	'Grease the wheel' hypothesis: positive impact of corruption on growth
Leite and Weidmann (1999)	General; 72 developed and developing countries	Neoclassical general equilibrium; growth regression	Capital-intensive natural resources increase rent-seeking and corruption	Non-linearity of the negative impact of natural resource corruption on growth, more pronounced in less developed countries
Li *et al.* (2000)	47 developed and developing countries, 1980-1992	Cross-country regression	---	Corruption retards growth, but the effects are far less pronounced than in Mauro (1995). In countries where the asset distribution is less equal, corruption is associated with a smaller increase in income inequality and a larger drop in growth rates
Lien (1986)	General	Competitive bribery game with incomplete information	Corruption may reproduce competitive bidding procedures	Corruption, bribery, may be efficient
Lui (1985)	General	Equilibrium queuing model	Corruption as 'speed money'	Corruption may be efficient
Mauro (1995)	70 developed and developing countries, 1980-1983	Cross-country regression	---	Negative association between the corruption index and the investment rate or the rate of growth
Mauro (1996)	94 countries, 1960-85	Cross-country regression	Corruption reduces private investment, and worsens the composition of public spending	Negative effects of corruption on growth; corruption alters the composition of government expenditures in reducing the share for education
Mauro (2004)	General	2 models of the relationships corruption-growth, based on strategic complementarities and multiple equilibria, with one including political stability	When corruption is widespread, lack of incentives to fight it	Negative impact of corruption on growth and persistence of corruption-low-growth equilibria
Méndez and Sepúlveda (2006)	30 to 85 countries, 1960-2000	Cross-country regression	The corruption-growth relationship is determined by the	Non-monotonic (quadratic) relationship between corruption and

			degree of political freedom	growth. Corruption has a beneficial impact on long-run growth at low levels of corruption but is detrimental at high levels. This effect is robust in countries with a high degree of political freedom; elsewhere the relationship between corruption and growth is not robust
Meon and Sekkat (2005)	63 to 71 developed and developing countries, 1970-1998	Cross-country regression	Independent negative impact of corruption on growth and negative impact of corruption on investment, worsening when the quality of governance deteriorates	Non-linear corruption-growth relationship. Corruption is most harmful to growth when governance is weak
Meon and Weill (2010)	69 developed and developing countries, 2000-2003	Regression estimating the interaction between aggregate efficiency, corruption, and other dimensions of governance	Positive or insignificant marginal effect of an increase in corruption on efficiency in poorly governed countries	Evidence of the 'grease the wheels' hypothesis: corruption is less detrimental in countries where institutions are weaker
Mo (2001)	Barro-Lee data set; 1960-1985	Cross-country regression	Corruption causes political instability, which impedes growth	Negative impact of corruption on growth
Murphy _et al._ (1993)	General	Modelling	i) Increasing returns to rent-seeking: increase in rent-seeking makes rent-seeking more attractive relative to productive activity; ii) public officials rent-seeking impedes innovation, hence growth (even more than production)	Focus on rent-seeking (rather than corruption), and its costs to growth. Multiple equilibria, with bad equilibria of high rent-seeking and low output
Rock and Bonnett (2004)	29 to 90 countries, 4 periods: 1980–83, 1988–92, 1984–96, 1994–96	4 cross-country regression	Asian specificity: combination of high corruption and high growth resulting from stable and mutually beneficial exchanges of government privileges for bribes	Corruption slows growth and/or reduces investment in most developing countries, particularly the small ones, but increases growth in the large East Asian industrial economies

Shleifer and Vishny (1993)	General	Model	When governments are weak, government agencies bring the cumulative bribe burden to infinity: distinction between centralised and decentralised corruption Due to its illegality and secrecy, corruption is much more distortionary and costly than taxation	Weak governments are associated with high corruption. Corruption has a negative impact on growth
Svensson (2005)	General, Mauro's (1995) dataset, updated 1980-2000	Analytical, cross-country regression	Insignificant results due to econometric problems using cross-country data; difficulties of measuring corruption (omitted variables); many forms of corruption that are not equally harmful for growth	Mismatch micro-macro: negative impact of corruption at the micro-level, but inconclusive impact of corruption at the macro level (on growth)
Tanzi and Davoodi (1997)	42 to 95 developed and developing countries, 1980-1995	Cross-country regression	5 channels: higher corruption is associated with: 1) higher public investment; 2) lower government revenues; 3) lower operations and maintenance expenditures; 4) lower quality of public infrastructure; 5) corruption increases public investment while reducing its productivity	Corruption distorts the investment decision process. Negative impact of corruption on growth
Vial and Hanoteau (2010)	Indonesia, panel data, manufacturing industry 1975-95	Modelling, measuring the relation between plant output/productivity growth and bribes	Support to the 'grease the wheels' hypothesis: firms paying bribes are better able to overcome barriers to business	At the micro-level, positive impact of corruption on manufacturing plants growth