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Critical review

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CORRUPTION AND MARKET COMPETITION: FROM MACRO TO MICRO. A CRITICAL REVIEW

Abstract

This study undertakes a critical review of the relationship between corruption and competition, offering a unique perspective on the subject in comparison to previous reviews by examining theoretical assumptions, observation units, and data from different periods. By selecting the most relevant and influential research, the hypothesis underlying the negative association between corruption and economic competition is analysed. This conclusion requires assumptions that reflect a particular framework, and the review identifies four major periods, beginning with the 1960s and development theory, when corruption is perceived as "grease in the wheel". The second period, commencing in the 1990s, adopts an institutionalist approach, conceptualising corruption as rent-seeking. The third period (from the 2010s) focuses on objective measures at the regional level, and the final period focuses on micro-level analysis, which is still in development. The main finding is that the results differ depending on the spatial scale, and there is a lack of research on time trends with respect to differences in levels. The review also identifies a paucity of extendable measures and definitions, a problem that is especially acute at the local level. Finally, the review offers critical tools and open research questions that will inform future analysis aimed at identifying and combating corruption more effectively.

Keywords: corruption, competition, institution, efficiency, growth

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1 Introduction

Corruption poses a significant threat to the foundations of democracy and the patterns of economic growth that are integral to the functioning of a healthy society. It serves as a conduit for the infiltration of the legal economy by unlawful behaviours, sources and individuals, who exploit vulnerabilities. Consequently, there has been a marked increase in the interest surrounding the nexus between corruption and economics, particularly in the post-1990s era (Bahoo et al., 2021). This review is explicit in its focus on the nexus between corruption and competition, and related boundaries of research, including the cost-cutting effect of corruption, the various manifestations of corruption, and the variability of corruption presence within a country.

The present review methodically examines the research conducted over the past several decades, from the 1960s to 2020, identifying each study based on its theoretical approach, the depth and breadth of its analysis, its methodological framework, and its salient conclusions. The identification of the most influential research involves the selection of articles that have been extensively referenced and cited in Google Scholar, as well as those referenced in reviews and monographic books by leading scholars in the field. To this end, a range of approaches have been considered, including macroeconomic analyses (Treisman, 2007; Escresa & Picci, 2020), institutionalist works (Mungiu-Pippidi, 2015; Banghelom et al., 2021), and methodological works (Ferwerda et al., 2017).

The majority of studies consider competition to be merely a necessary pre-existing condition, with the focus instead being directed towards the study of other phenomena, such as development (Leff, 1964; Nye, 1967), democratisation (Mauro, 1995; Mo, 2001), tax expenditures (Kaufmann et al., 1999), and government spending (Mauro, 1997; Tanzi & Davoodi, 2001; Gupta et al., 2001). Contrary to previous reviews, this study examines the interplay between corruption and competition. The causality of this relationship remains a subject of debate, primarily due to the complexity of disentangling the effects of a single variable and the evolution of methodology (Ugur & Dasgupta, 2011). Nonetheless, the negative association is widely acknowledged.

The prevailing assumption is that competition reduces rents and, by extension, the risk of corruption, given its association with rent-seeking behaviour (Rose-Ackerman, 1975). In a monopolistic environment, the rent is higher than the risk, and corruption is more likely to occur (Mungiu-Pippidi, 2015). This assumption has been widely adopted and confirmed empirically (Fazekas & Toth, 2016), with few exceptions (Heidenheimer, 1978). The reverse relationship – that of corruption and competition – is corroborated indirectly. It has been demonstrated that corruption hinders the effective allocation of funds and both domestic and foreign investment (Picci, 2005; Restuccia & Rogerson, 2018). In this regard, empirical evidence suggests that corruption can reduce economic growth, which is generally associated with higher competitiveness and market openness.

Firstly, the econometric limitations of the extant literature are analysed. Of particular significance is the manner in which it focuses on the methodological definitions of the phenomena, demonstrating that these definitions reflect a cultural approach in their construction and assumptions. The text identifies four major moments in which the relationship between corruption and competition has been examined: firstly, the cultural frame-

work, which is based on development theories that focus primarily on bureaucratic corruption seen as "grease in the wheel"; secondly, the institutional approach from the 1990s, that describes corruption to exploit rents and refers to inspirational research such as Rose-Ackerman (1996), Ades and Di Tella (1999), and the pioneer Krueger (1974). A plethora of analyses conducted during this period demonstrate that competition has a deterrent effect on corruption, and it is now a widely accepted assumption. In the third period, the research suggests several objective indices of great corruption (Fazekas & Toth, 2016). Finally, the extant literature has demonstrated a tendency to approach the subject from a microeconomic point of view. These more recent findings employ different definitions of corruption as cost-cutting (a pioneering study on this is by Shleifer & Vishny, 1993) and focus on different aspects of competition (efficiency). The categorisation of four macro-periods facilitates a critical examination of the influence of the historical period on research findings, given that each corruption and competition definition is predicated on specific assumptions and analytical frameworks. Furthermore, the level of analysis (in terms of both time and space) should be considered when interpreting the findings.

The present analysis does not aspire to address the extant literature on the subject in a systematic fashion. Instead, it focuses exclusively on the relationship to competitiveness, taking into account the relative econometric and definitional challenges. In this sense, the critical analysis does not consider all the quantitative publications on corruption, but rather focuses on the most influential ones, which are of a qualitative nature. This paper contributes to the existing literature by offering a critical perspective and highlighting some open issues in current literature. The distinction between micro and macro analysis, as well as the absence of objective and expandable measurements, are subjects that require further investigation.

The remainder of the paper is structured as follows. The second paragraph discusses the papers' selection and the approach of the analysis to ensure the study's replicability. The third paragraph is where the critical discussion of the selected papers takes place. Finally, the fourth paragraph summarises the key findings and puts forward suggestions for future research directions.

2 Methodology

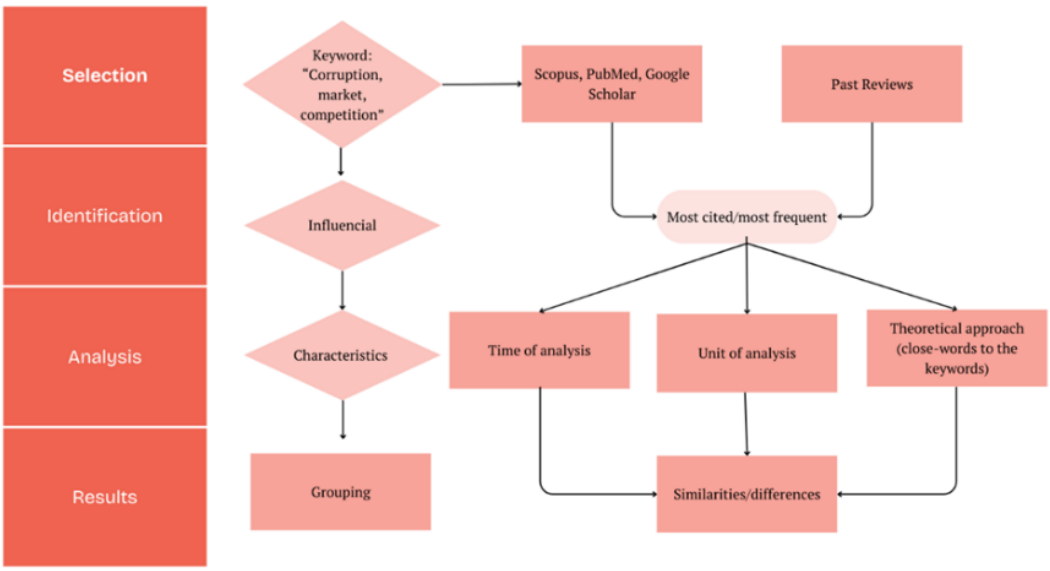
The process of conducting a literature review commences with the identification of pertinent studies. The most widely used academic databases (e.g. Scopus, Google Scholar, etc.) are utilised for this purpose. Papers are selected based on keywords such as "corruption", "market", and "competition". The corpus of publications is then extended to include works from the 1960s to the present day, thereby ensuring a comprehensive and inclusive overview of the subject. As this is not a systematic review, the results are matched with previous literature reviews (Treisman, 2007; Mungiu- Pippidi, 2015; Escresa & Picci, 2020; Banghelom et al., 2021; Burguet et al., 2016; Ugur & Dasgupta, 2011; Ferwerda et al., 2017; Dimand & Tosato, 2018). This preliminary stage identified 500 studies (directly and indirectly) about corruption and related to competition. A considerable number of studies have posited that competition is a prerequisite for development, modernisation, and democratisation (Mungiu- Pippidi, 2015). Consequently, papers that do not explicitly

focus on competition but assume it as a precondition for other phenomena (e.g. growth) have also been included in this preliminary phase. The association between corruption and competition has emerged in literature with the first studies on corruption, but has flourished more directly since the 1980s, with an increasing trend (Bahoo et al., 2021).

In the subsequent stage, papers are filtered according to their impact on this subject. A multifaceted approach is employed to identify the most salient indicators, encompassing the reputation of the journal, the frequency of citations, the h-index of scholars, and their participation in other reviews. To mitigate the potential for bias towards older studies, a comparative analysis is conducted based on the year of publication. This approach ensures a comprehensive and unbiased selection of the most relevant and influential publications, which constitute the initial 10% of the final sample. The final sample size is composed of approximately 40 papers (approximately 10 per decade, with the exception of the initial 25 years, which had a lower number of publications).

The final stage of the research process is the grouping phase. During the analysis phase, the identified papers are reviewed for three major characteristics: the chosen theoretical approach (keywords connected to "corruption" or "market"), the year of publication, and the level of analysis (units of analysis). The final stage of the process involves the grouping of the selected papers based on their similarities and differences. This approach enables a critical examination of findings based on theoretical and methodological approaches in the literature, which is useful in identifying the most promising research directions and highlighting potential gaps in existing knowledge.

Figure 1. Steps adopted in the analysis



3 Corruption and competition

The relationship between corruption and competition is supported by a substantial body of literature that demonstrates a negative association between the two phenomena. Bahoo et al. (2021) conducted an extensive review of publications from 1968 to 2019, which revealed a notable surge in corruption-related interest within the field of economics during the 1990s. This period also coincided with the adoption of corruption measures as governance indicators by institutions such as the World Bank (Kaufmann et al., 1999; Mauro, 1995). Cornerstones such as Rose-Ackerman (1997) conceptualised corruption as rent-seeking behaviour. The simplest formulation of the agent-model posits that corruption occurs when an agent prioritises their interests because they believe the moral hazard is acceptable in comparison to the risk, which is influenced by both morality and the likelihood of being caught (Klitgaard, 1988). A systematic review of studies on corruption was conducted by Ungur and Dasgupta (2011), which revealed that the principal-agent model was employed in most of the corruption research. This theoretical framework has exerted a significant influence on subsequent decades, adapting to various contexts, including public procurement (Fazekas & Toth, 2016; Banghelom, 2021), with empirical confirmation of a negative association between corruption and competition.

Notwithstanding its considerable significance, this model requires discussion of its expandability. A primary methodological consideration is imperative, given the econometric challenge of substantiating this relationship. The majority of studies utilise corruption measures as dependent variables (DV) and economic growth, GDP per capita or market-related measures ad independent variables (IV) (Treisman, 2007; Ugur & Dasgupta, 2011). This approach, however, gives rise to challenges related to endogeneity and reverse causality, which have been addressed in the literature (Knack & Keefer, 1997; Acemoglu et al., 2001). Askarov and Doucouliagos (2013) conducted a meta-regression and discovered that studies that have approached these issues used an instrumental variables estimator (2SLS or GMM), given a higher flexibility with weak instruments. Similar results are reported by Ugur and Dasgupta (2011), who find that two thirds of studies use instrumental variable approaches. Noteworthy exceptions include Barone and Narciso (2015) and Acconcia et al. (2014), who employed a DID approach. It is a widely acknowledged principle that the influence of institutional variables, such as corruption, on economic variables is more significant than the reverse (Rodrik et al., 2004). However, there are exceptions to this conclusion, including the works of Chong and Calderon (2000) and Kaufmann et al. (2006), who found that the economic component influences the institutional one in the long run, or that the relationship is non-linear (Goes, 2015). As Escresa and Picci (2020) have observed, there is a paucity of evidence regarding changes over time in levels of corruption. This hinders the execution of in-depth causal analysis, also due to the recent availability of comprehensive time series data on institutional quality indicators, which has only become feasible in the last fifteen years for a limited number of countries.

The second and more general order of consideration is theoretical. The agent model approach and its subsequent developments are contingent on the cultural reference context of the 1990s, which associated the existence of better institutions (lower levels of corruption) with greater development (higher levels of competition) (Acemoglu et al., 2005, Goes

et al., 2015; Charron et al., 2014). Empirical evidence is primarily drawn from homogeneous countries (predominantly in the West) where these measures are applicable, as noted by Mungiu-Pippidi (2023). As will be discussed in more detail in the following sections, the literature proposes different definitions of corruption or nonunique results (Leys, 1965; Gygli, 2019; Di Giorno et al., 2024). A chronological analysis demonstrates that the measures (indicators and units of observation) and the definitional assumptions of the model itself are reflective of the theoretical and cultural approach characteristic of that period.

3.1 Development Theories

The initial emphasis on corruption is associated with the development framework and modernization theory. According to the revisionist approach, corruption may benefit modernization and progress, since corruption introduces elements of competitiveness which are frequently associated with modernization (often used as a synonym of progress) (Heidenheimer, 1978). In instances where government and bureaucracy prove ineffective, corruption can have a positive impact by introducing competitive bidding and stimulating investment (Leff, 1964; Leys, 1965; Nye, 1967). This culturalist viewpoint has been applied to developing countries and is known as the "grease in the wheels" argument. This theoretical framework is reflective of post- colonial patterns, emerging from prolonged observation of newly independent states governed by nationalist dictators with the assistance of bureaucracy. A notable assumption inherent within this model is that bureaucrats wield more influence than policymakers. However, Krueger's seminal work (1974) stands as a notable exception, as he was the first to theorise that entrepreneurs engage in rent-seeking behaviour by requesting favours rather than competing in the open market.

3.2 Institutional Approach

The 1990s witnessed a paradigm shift in the understanding of the nexus between corruption and competition, as well as corruption in general. Pivotal articles (North, 1990; Rodrik, 1999; Diamond, 1999; and also Acemoglu et al., 2005) underscored the pivotal role of institutions in determining economic performance and combating corruption. Institutionalist theory posits that corruption is a governance issue intimately related to particularism or favouritism (Rothstein & Teorell, 2008; Mungiu-Pippidi, 2015). Since the 1990s, institutional observers and policymakers have included corruption measures in their reports. For instance, in 1989, the World Economic Forum initiated the integration of metrics pertaining to bribery in its Competitiveness Report, while Kaufmann et al. (1999) established a composite measure of good governance. Since 1993, Political and Economic Consultancy Risky Control has been reporting corruption estimates. Researchers have begun to employ these indicators, including Mauro (1995), Knack and Keefer (1995), Ades and Di Tella (1999), Tanzi and Davoodi (1997), Kaufmann (1998), Lambsdorff (1998), and Johnson (2000). The majority of these studies demonstrate that corruption exerts a detrimental effect on economic growth by influencing the allocation of resources. This research had a long-term influence, posing a negative effect of market openness and competitive exposure on corruption (Treisman, 2000; Sandholtz & Gray, 2003; Gerring & Thacker, 2005; Aidt et al., 2008). However, the challenge of distinguishing between different forms of

corruption in democratic and developed countries remains. Two types of corruption were identified: grand corruption, involving elected politicians and ruling elites (Krueger, 1974; Porta & Vannucci, 1995); and petty corruption, also termed bureaucratic corruption (Bardhan, 1997; Rose-Ackerman, 1998). Subsequent works have provided other conceptions about corruption, such as institutional corruption, legal corruption, and state capture (Helman & Kaufmann, 2000; Lambsdorff, 2006 Kaufmann & Vicente, 2011; Kaufmann et al., 2011).

As posited by Ugur and Gupta (2011), the preponderance of corruption research has historically utilised the principal-agent model as a foundational framework. The seminal work of Rose-Ackerman (1997) marked the inception of this strategy in the context of corruption research. This standpoint posits that corruption can be conceptualised as a loss problem. Notable contributions have been made by Rose- Ackerman (1998) and Shleifer and Vishny (1993), who have significantly expanded the scope and impact of this field of study. The model posits that corruption occurs when an agent prioritises their interests, perceiving a moral hazard as permissible when juxtaposed against the risk, which is influenced by both morality and the probability of apprehension (Klitgaard, 1988). This theoretical framework has been the subject of extensive research, encompassing both descriptive and empirical studies. The definition of corruption employed in this model and its indicators are shaped by the socio- economic context of the states in which they were developed and applied, constituting the primary limitation of the model.

This theoretical framework is unable to provide a satisfactory explanation for circumstances in which high levels of corruption did not impede economic development, a phenomenon that was observed, for example, in South Korea (Di Tella & MacCulloch, 2009; Mungiu-Pippidi, 2017). According to Gygli et al. (2019), cases such as Ukraine, Lebanon, and certain Balkan countries do not demonstrate the anticipated reduction in corruption, despite increased market competition. In addition, scholars have found that initiatives to minimise corruption have been unsuccessful in certain countries (Levy, 2004; Lawson, 2009). Treisman (2007) noted in his review that cross-national analysis studies primarily used perception- or experience-based techniques. Nevertheless, it is important to acknowledge the role of perception in this context, given its susceptibility to strong assumptions when addressing issues of endogeneity. Capturing economies, particularly those reliant on natural resources, may result in growth but not inclusive development (North et al., 2009). A second limitation arises from the agent model itself. Regulators have little incentive to identify corruption when it is deeply entrenched, thereby exacerbating the problem (Di Giorno et al., 2024). Furthermore, Mungiu-Pippidi (2023) notes that the corruption definitions developed during this period are difficult to apply in other institutional settings and should be approached in terms of collective action in highly corrupt environments (Persson et al., 2013; Rothstein, 2011; Bauhr, 2017).

3.3 Objective-measures and regional level

Because of the inadequacies of perception measures and ineffectual anti-corruption initiatives, scholars were pushed for more trustworthy metrics (Kane and White, 2009). Policymakers and specialized institutes have begun to use alternative indicators such as “risk

of corruption" or "red flag" indicators, taking inspiration from the Financial Action Task Force (2006) and the World Bank (2007) for money laundering.

The extant literature on this topic has been focused on government spending and public procurements (see, for example, Søreide, 2002; Rose-Ackerman, 2004). Building on this, Golden & Picci's seminal paper (2005) developed an index of the cost of public projects in Italy. Subsequent well-established literature posits that public procurement measures, incorporating single bid, transparency, cost, and the number of bidders, serve as reliable indicators of grand corruption (Acemoglu & Robinson 2012; Fazekas et al., 2016; Rose-Ackerman and Palifka 2016). The fundamental premise underlying this assertion is the recognition of a heightened risk in circumstances where there is a substantial deviation from the anticipated competitive behaviour. Researchers have employed these measures in a variety of developed countries, also because they allow for regional or municipal scale application (Charron et al., 2014; Fazekas et al., 2020). Despite the evident advantages of these red-flag techniques, including objectivity and granularity, they are vulnerable to self-selection bias (see Unger and Ferwerda's 2017 analysis of 28 indicators) and their application to many types of corruption or situations is difficult. It is also important to note that the vast majority of these studies employ this indicator in contexts that are sufficiently efficient to facilitate the establishment of a comprehensive database. It is noteworthy that a paucity of data can itself be considered a form of information, as posited by Riccardi and Milani (2017).

In the context of this critical analysis, it is important to acknowledge the limitation imposed by the use of these indicators. The concept of competition is predicated on the assumption that a corruption-free market is competitive (Fazekas et al., 2016). This assumption, however, is problematic when considering the dynamics of overruled markets or cartel-organised corruption, including instances of organised crime (Fazekas et al., 2022; Canonico et al., 2012).

3.4 Microdata and Local Corruption

Recent decades have seen a proliferation of empirical evidence that challenges the conventional wisdom surrounding the role of competition. In particular, there has been a shared emphasis on studying specific enterprises and their local implications (such as technology, fixed costs, industry, and discriminating between different types of corruption). A substantial body of previous research has demonstrated that characteristics such as firm variety by nation or industry are significant in examining the relationship between competitiveness and corruption (Treisman, 2000; Lamsdorff, 2006). In general, micro-level strategy in research differs from previous macro-level studies (Mocan 2008). Early contributions posited that bribery varies by industry and region (Fisman & Svensson, 2007), and subsequent in-depth investigations emphasised the significance of context and diverse sector settings (Mocan, 2008). The majority of research concentrates on a particular aspect of competition, such as efficiency or growth (Fisman et al., 2024; Aterido et al., 2011; De Rosa et al., 2015; and the review of Burguet et al., 2016).

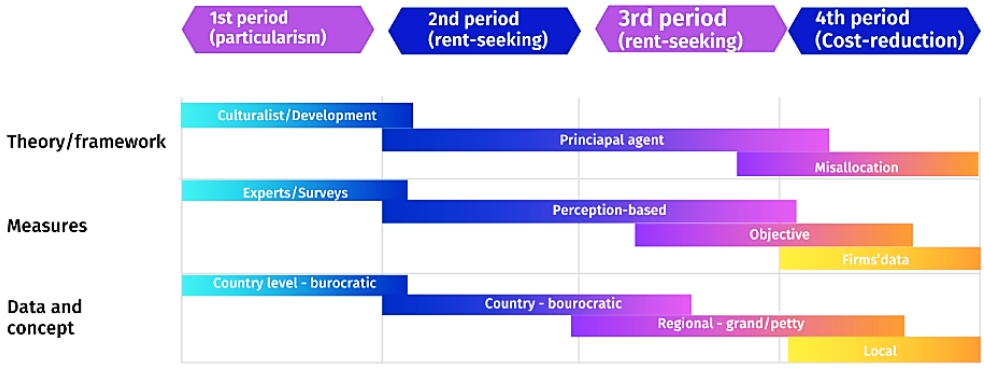
As Pieroni and d'Adostino (2013) and De Vaal and Ebbem (2011) have demonstrated, one-third of the correlation between competition and corruption can be attributed to the di-

vergent characteristics between nations. In developing countries, for instance, competition does not serve as an effective deterrent to bureaucratic corruption due to its capacity to enhance productivity and efficiency. An additional corpus of work investigates the concept of "dispersion" and local corruption, primarily in poor countries (Hanousek & Kochanova, 2016; Bai et al., 2019). The argument advanced by these scholars is that an increase in localised bribery can result in an enhancement of overall efficiency, a proposition that finds resonance with earlier research by Vial and Hanoteau (2010) and Acemoglu and Verdier (2000). These scholars regard corruption as a facilitator of economic progress. In contrast, Meon and Weill (2010) posit that local corruption exerts an influence on competition.

A further intriguing line of enquiry pertains to the classification of diverse forms of corruption, predicated on the characteristics of the firm. This literature explores the widely held idea that corruption entails exploiting existing benefits (Krueger, 1974; Ades & Di Tella, 1999; Emerson, 2006). A seminal study by Shleifer and Vishny (1993) revealed that competition in product markets can potentially reduce corruption, thereby leading to cost reductions. Sequeira and Djankov (2010) further elaborate on this concept, distinguishing between "coercive corruption" (obtaining more rent) and "collusive corruption" (focused on cost reduction). It is conceivable that in industries with greater fixed costs, this phenomenon could occur, given that it would reduce the number of existing enterprises and the total earnings available for exploitation.

Despite exhibiting analogous limitations in terms of quantity and quality of data as its predecessor, the micro-approach appears to be less constrained by a specific context (it has been applied in both developing and developed contexts). In conclusion, the micro-approach is a growing field of study and is not homogenous.

Figure 2. Timeline of periods identified in the literature



4 Discussion and conclusion

The present study aims to undertake a critical review of extant research on the relationship between competition and corruption. The present study selects the most referenced and influential studies, yet differs from previous reviews on the causes and consequences of corruption (Treisman, 2007; Mungiu-Pippidi, 2015; Escresa & Picci, 2020; Banghelom et al., 2021; Burguet et al., 2016; Ugur and Dasgupta, 2011; Ferwerda et al., 2017; Dimand & Tosato, 2017). The prevailing theoretical framework, which has been developed since the 1990s, posits that competitive environments have a deterrent effect on corruption. This negative correlation has since been developed and empirically tested, also in a causal sense (Rose-Ackerman, 1996). This unique perspective enables the analysis of key elements for a critical viewpoint, including the method's theoretical assumptions, the observation unit, and years of data. The primary conclusion that emerges from this critical analysis is that the correlation is contingent on the definition of corruption employed, as well as the cultural context from which the empirical evidence is derived and the indicators developed.

Secondly, the chronical categorization reveals four major periods. According to the preceding observations, each period is distinguished by a distinct approach to delineating the relationship between corruption and competition. The prevailing cultural and scientific framework of each period exerts a significant influence on the methods and definitions employed. However, it is important to note that there have been some exceptions to this generalisation in each period, with some innovative or contemporary approaches being employed (see Kreuger, 1974; Rose-Ackerman, 1996; Shleifer & Vishny, 1993). An initial period, which manifested during the 1960s, was influenced by post-colonial development ideas. In this period, bureaucratic corruption was primarily regarded as a necessary lubricant. This period was characterised by the prevailing view that bureaucratic corruption was an unavoidable and undesirable aspect of modernisation, as it had the capacity to introduce competitive elements. The most protracted period commenced in the 1990s, coinciding with the rise of institutionalist theory and research utilising the principal-agent approach (a methodology also employed by IMF economists). The prevailing definition of corruption as rent-seeking emerged during this period. As profits rise in response to restricted competition, any increase in competitive elements is detrimental to corruption. Indicators based on perception were employed at the country level. Subsequent to this, academics proposed objective criteria and novel definitions for corruption (institutional, grand, and petty) in industrialized countries, thus allowing for regional or municipal research with comparable results. The extant literature has recently proposed alternate definitions of corruption that emphasise cost reduction, as well as a firm-level approach that does not necessarily contradict with competitiveness and efficiency, differently from prior findings.

The present critical study does not aspire to encompass all aspects of the phenomena under scrutiny. It encompasses studies that consider the relationship between corruption and competition, either directly or indirectly, as a necessary condition for other phenomena (see Mungiu-Pippidi, 2015). Despite the limitations of the methodology employed, it facilitates a critical evaluation of results by considering theoretical assumptions, definitions, and measurements.

The review yielded three key findings: the significance of scale in determining find-

ings (countries, regions, enterprises). When comparing the macro and micro levels, the conclusions differ. Secondly, the curbing effect of corruption is based on the definition of corruption as rent-seeking, which may differ when corruption is measured in terms of cost reduction or when competition is measured in terms of efficiency. The debate surrounding the direction of causality has yielded no singular conclusion. Esresa and Picci (2020) have highlighted that while a significant volume of research focuses on variations in corruption levels, these studies frequently neglect to consider long-term trends. In conclusion, there is a paucity of tools with which to compare the various forms of corruption at municipal or local level, as well as standardised measures and definitions that can be extended to different contexts. This paper proposes critical tools to analyse empirical findings and identify open research issues that could inform future analysis in identifying and preventing corruption.

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