

Corruption and inequality: A survey of the literature

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Abstract

Economic literature has tested the relationship between corruption and income inequalities using variety of data sources and techniques but the economic research in this field is a rather young discipline. Theoretical explanations have been given to establish close relationship between corruption and income inequality. The research has convinced that income inequality is one of the factors of corruption but the reverse is not true as the theoretical arguments linking corruption as one of the factors of income inequality are weak and less convincing. In the paper, we made an effort to provide review of the theoretical and empirical studies exploring relationship between economic inequality and corruption. Based on the literature survey, we have summarized the various channels through which the relationship between corruption and inequality works.

Keywords: income inequality, corruption, corruption-inequality trap

1. Introduction

Corruption which is generally defined as – use of government authority for private gain – may leads to income inequalities and poverty. Bowles (2000) ^[11] observed that corruption can be divided into three activities, namely bribery, extortion, and embezzlement but it is not limited to this only: nepotism, influence peddling and fraud also included in it. United Nations defines corruption as ‘Monopoly plus discretion minus accountability’ whereas World Bank define it as ‘a symptom of deep-seated economic, political and institutional weaknesses’. The current literature is almost unanimous in its findings that corruption in all forms and manifestation is undesirable for the countries across the globe. A substantial number of studies have examined the relationship between income inequalities and corruption to elucidate the ways in which the two interact. The theoretical relation between corruption and income inequality is derived mainly from different versions of rent seeking theory. Davoodi *et al.* (1998) found a positive correlation between corruption and in-equality (measured by Gini coefficient) for 37 countries. Recently many studies have studied the relationship between corruption and income inequalities (e.g. – Sulemana & Kpienbaareh, 2018; Policardo and Carrera, 2018; Batabyal & Chowdhury, 2015; Apergis *et al.*, 2010; Brempong & Camacho 2006; Chong & Gradstein, 2007; Dincer & Gunalp, 2008; Gupta *et al* 2002; Gyimah-Brempong, 2002; Li *et al.*, 2000; Shabbir & Anwar, 2008; Uslander, 2006 & 2007; Jong-Sung & Khagram, 2005) ^[44, 39, 8, 6, 13, 26, 14, 17, 15, 24, 11, 25, 33, 42, 46-4731].

A vast body of literature hints at the possibility of corruption effecting income inequalities. Another strand of literature hints at the possibility of income inequalities effecting corruption and its persistence. Several studies highlight the bidirectional causal relationship corruption-inequality-corruption with a potential of corruption to increase inequality by affecting income distribution. Inequality might also help to promote corrupt behaviour by elite capture of political processes or unintentionally

through the vulnerability of the poorer classes to engage in clientelistic relationships or to be asked for bribes. Jong-Sung & Khagram (2005) ^[31] found the existence of two way causality indicating that a greater inequality causes higher levels of corruption, and higher levels of corruption intensify inequality. As a result, many societies are likely to be trapped in vicious circles of inequality and corruption. Some scholars have suggested that the relationship between corruption and income inequality could be non-monotonic (e.g., Chong and Calderon, 2000; Li *et al.*, 2000; Bourguignon and Verdier, 2000; Fakir *et al.*, 2017) ^[33, 10, 21]. Chong & Calderon (2000) and Li *et al.* (2000) ^[33] theorize that corruption affects inequality in an inverted U-shape way but did not find empirical evidence to support it and hinted at a positive relationship between corruption and income inequality in high-income countries and a negative relationship in low-income countries. Gupta *et al.* (2002) ^[15, 24] provided some theoretical finding on the causality from corruption to inequality and provided some empirical results on the relationship between corruption and inequalities. Alesina & Angeletos (2005) ^[3, 4] observed that high levels of government intervention, corruption, and rent seeking may be self-sustaining.

A cursory look at the extant literature reveals that arguments advanced in various studies are complex and intertwined and in order to understand the theoretical and empirical implications of these, a systematic literature survey is required. To the best of our knowledge such a survey does not exists and the existing literature survey are part of the studies whose primary purpose was not to conduct a systematic survey but to highlight other aspects of corruption. Keeping the above in mind, a systematic survey is undertaken in order to delineate the channels through which the interactions between corruption and income inequalities operate. The survey provides overview of studies establishing corruption and income inequalities, direction of causality and methodology used in the literature for testing causality hypothesis and models used.

2. Overview of the main studies highlighting bi-direction causality

In a recent study, Dwiputri *et al* (2018) ^[20] applying Ordinary Least Square (OLS), Tobit, and Two Stage Least Square (2SLS) methods in a Ramsey Growth model framework, tested the effect of corruption on income inequality. The study found the existence of a reciprocal influence between corruption and income inequality in Asia, which the study referred as the corruption-inequality trap. The study found that higher the level of corruption is, higher would be income inequality, and the higher the income inequality level is, higher would be its affect the level of corruption in Asian countries.

Jong-Sung & Khagram (2005) ^[31] argued that greater levels of inequality are social structurally conducive to higher levels of corruption through material and normative mechanisms. It further argued that rich people have more options and resources to pay extortion fees, bribes and monitoring the public officials than the poorer ones when it comes to the implementation of bribery and extortion. The study hypothesized that greater income inequality is associated with higher levels of corruption; the adverse effect of inequality on corruption is larger in more democratic countries; perceptions of the extent and norms for acceptability of corruption are higher in more unequal societies and higher levels of corruption are associated with higher levels of inequality. The econometric results indicated that the inequality has a significant and large causal effect on corruption. A one standard deviation reduction in inequality causes about a two-thirds standard deviation improvement in freedom from corruption, other factors being equal. In the reverse causality analysis, a one standard deviation increase in corruption index is associated with a 0.44 standard deviation reduction in inequality.

Uslaner (2006, 2007) ^[46-47] observed that economic inequality provides a fertile breeding ground for corruption and, in turn, leads to further inequalities. The study hint at an inequality trap in the relationship between corruption and income inequality in Africa. The study argued that perceptions of growing inequality, corruption and mistrust in government and fellow citizens lead to an inequality trap as they are sticky and each breeds the other. The study makes an important observation: *‘When people believe that they have no fair chance to get a better life—and that the only way to prosper is by being corrupt—it will be difficult to escape an inequality trap.’* Ariely and Uslaner (2017) ^[7] examined two prominent arguments underlying perceptions of corruption: Uslaner’s “inequality trap” thesis and the unfairness theory and found validation of both arguments. Countries with higher levels of income inequality demonstrated a higher degree of perception of corruption validating ‘inequality trap’ thesis and in line with the unfairness thesis the people who believe that public officials treat them fairly are less likely to perceive corruption to exist. Combing both arguments the study concluded that in unequal countries, fairness does not matter quite so much for corruption perceptions. Apergis *et al* (2010) ^[6] based on the estimation of a panel vector error correction model of all 50 US states over the period 1980 to 2004 found the presence of both short-run and long-run bidirectional Granger-causal between corruption and income inequality. Chong and Gradstein (2007) ^[14] observed that a one-unit increase in the inequality coefficient reduces the corruption index by 1.15. On the other hand, we also find that a one-unit increase in the corruption index reduces the inequality coefficient by 0.02. The summary of studies surveyed and methodology used in these studies are presented in table-1 and Table-2.

Table 1: Summary of Studies on relationship between corruption and income inequalities

Author/s	No. of Countries	Period	Direction of Causality		
			C→I	I→C	I⇔C
Policardo and Carrera (2018) ^[39]	50	1995-2015	Positive *	Positive *	Positive *
Dwiputri <i>et al.</i> (2018) ^[20]	56	2015	Positive	Positive	Positive
Sulemana & Kpien (2018) ^[44]	48	1996-2016	Positive	Negative	--
Huang (2013) ^[29]	10	1995-2010	Positive(02)	Positive(04)	NIL
Andres & Dobson (2011) ^[5]	19	1982-2002	Negative	--	--
Dobson and Dobson (2010) ^[18]	21	2000-2005	Negative	--	--
Apergis <i>et al.</i> (2010) ^[6]	50	1980-2004	Positive	Positive	Positive
Chong and Gradstein (2007) ^[14]	121	1960-2000	Negative	Negative	Negative
Brempong & Camacho (2006) ^[13, 26]	61	1982-2002	Yes	--	--
N’zue and N’Guessan (2005) ^[38]	18	1996-2001	--	Positive	--
Jong-Sung & Khagram (2005) ^[31]	129	1971-2002	Positive	Positive	Positive
Gyimah-Brempong (2002) ^[12, 25]	21	1993-1999	Positive	--	--
Gupta <i>et al.</i> (2002) ^[15, 24]	41	1980-1997	Positive		

Source: Author’s compilation based on literature survey

Note: * - Causality is Country-Specific

3. Causality from Corruption to Income Inequality (C→I)

Much of the empirical literature reports a positive relationship – more corruption is associated with higher inequality (e.g., Batabyal & Chowdhury, 2015; Mo, 2009; Dincer & Gunalp, 2008; Gyimah-Brempong and De Camancho, 2006; Gupta *et al.*, 2002; Gyimah-Brempong, 2002, Tanzi, 1995; Mauro, 1995, 1997) ^[8, 37, 17, 13, 26, 26, 15, 12, 35]. Many recent studies reinforce the hypothesis that corruption can increase income inequality. Quantifying the impact of corruption on income inequalities, Gupta *et al.*

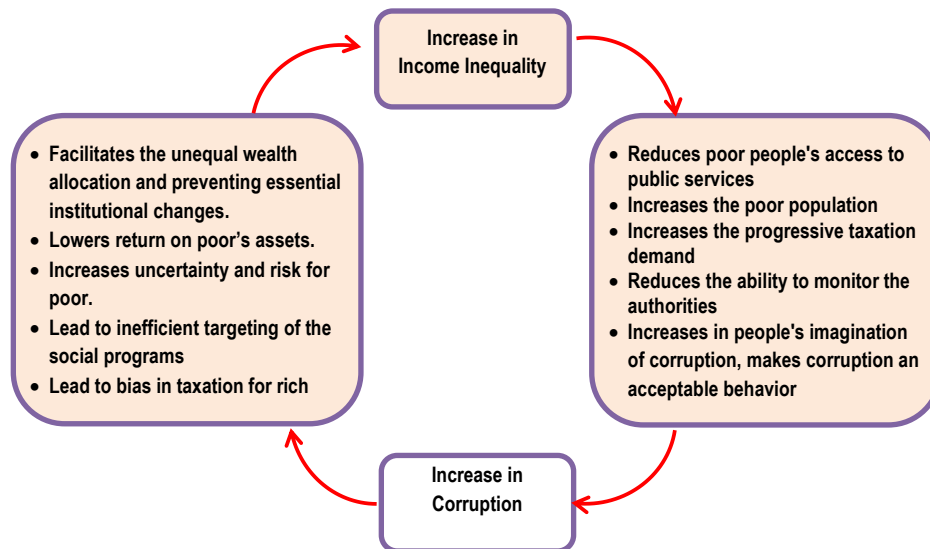
(2002) ^[15, 24] demonstrated that a one standard deviation increase in corruption results in an eleven point increase in income inequality and a 5% growth in the income of the poor. Some studies have also explored the corruption-income inequality relationship within the context of how lower corruption levels affect income inequality. Gyimah-Brempong and Camacho (2006) ^[13, 26] found that a 10% decrease in corruption results in a 1.7% growth rate in income for Organisation for Economic Co-operation and Development (OECD) and Asian countries, 2.7% in Latin American countries and 2.8% in African countries. Dobson

and Ramlogan-Dobson (2010) [18] using panel data for Latin America finds that lower levels of corruption lead to higher levels of income inequality. Huang (2013) [29] investigated the causal relationship between corruption and income inequality for ten Asian economies over the period 1995 to 2010 using the bootstrap panel Granger causality approach and found mix results as indicated in table-1. The various channels through which effects of high or increasing corruption are transmitted into high or increased income inequalities are as given under:

- *Biased tax system* as corruption can lead to tax evasion, defective tax administration and exemptions that favor the wealthy and well-connected population groups. This has the potential of reduction in the tax base and the progressivity of the tax system, which may led to increased income inequality (Gupta *et al*, 2002; Hendriks *et al*. 1998) [15, 24].
- *Poor effective targeting* of the social programs to the truly needed due to the corruption that is siphoning the funds from poverty alleviation programs from the poor to the powerful/reach individuals (Rose-Ackerman, 1999) [40].
- High concentration of *asset ownership* can influence

public policy and increase income inequality. Corruption by corrupts would result in higher returns to the assets owned by the wealthy and lower returns to the assets owned by the less well-to-do, thereby increasing income inequality (Gupta *et al*, 2002) [15].

- Higher corruption is found to be associated with lower education and health spending which further aggravate inequalities (Mauro, 1998) [35]. Corruption increases the operating cost of government which inter-alia *decreases public revenues*, hence all effective public expenditures, including education expenditures are scaled-down (Gupta *et al*, 2002) [15, 24].
- *Corruption increases uncertainty and risk* for poor and not so well connected. This is obviously “state capture” argument, rather than administrative corruption. State capture describes the situation where businesses have undue influence over the decisions of public officials. Samadi and Farahmandpour (2013) [41] provide a schematic representation of vicious circle of corruption and inequalities which is reproduced below after incorporating changes according to the literature survey carried out in the present paper:



Source: Authors change in the representation given by samadi and faragmandpour (2013)

Fig 1: Representation of income inequality and corruption

Table 2. Data Used and Methods Applied for exploring relationship between Corruption and Income Inequality

Authors	Data	Methods
Policardo and Carrera (2018) [39]	C: CPI from Transparency International. IE: Gini coefficient from WIID	Dynamic GMM model
Dwiputri <i>et al.</i> (2018) [20]	C: CPI from Transparency International. IE: Gini coefficient from WIID	OLS, Tobit, and 2SLS methods.
Sulemana & Kpien. (2018) [44]	C: CPI from Transparency International. IE: Gini coefficient from SWIID	Granger causality test, OLS, random effects and fixed effects models
Huang (2013) [29]	C: CPI from Transparency International. IE: Gini coefficient from SWIID	Bootstrap panel Granger causality testing method
Apergis <i>et al.</i> (2010) [6]	C: Per capita no. of government official convicted in a state IE: real per capita personal income	Pedroni’s heterogeneous panel cointegration test
Dobson and Dobson (2010) [18]	C: ICRG corruption index. IE: Gini coefficient from WIID	Fixed effects model; Use of instrumental variable
Chong and Gradstein (2007) [14]	C: ICRG corruption index. IE: Gini coefficient from Deininger and Squire (1996)	GMM system estimator technique for panel data
Brempong & Camacho (2006) [13, 25]	C: CPI from Transparency International. IE: Gini coefficient of Income inequality	Panel regression, OLS, IV, and LIML estimation methods

N’zue and N’Guessan (2005) [38]	C: CPI from Transparency International. IE: Inequality data from Sala-i-Martin	Panel data models, Granger causality test
Jong-Sung & Khagram (2005) [31]	C: Gini coefficients from Dollar and Kraay (2002) and then adjusted IE: CCI, CPI, ICRG & PRS	Instrumental variables (IV) and 2SLS methods
Gyimah-Brempong (2002) [12, 25]	C: CPI from Transparency International. IE: Gini coefficient of Income inequality	OLS, IV, and LIML estimation methods
Gupta <i>et al.</i> (2002) [15, 24]	C: CPI & ICRG IE: Gini Coefficient from Deininger and Squire's (1996)	OLS, IV, and Sensitivity Analysis

Note: C – denotes variable used for measuring corruption; IE – denotes variable used for income inequality; WIID - United Nations World Income Inequality Database; ICRG - International Country Risk Guide; CPI: Corruption Perception Index; CCI: Control of Corruption Index; PRS: Political Risk Service’s; SWIID - Standardize World Income Inequality Database. OLS – Ordinary Least Square; IV – Instrument Variable; LIML - Limited information maximum likelihood

4. Causality from Income Inequality to Corruption (I→C)

Jong-Sung & Khagram, (2005) [31]; Fried, Lagunes, & Venkataramani (2010) argue that income inequality can promote corruption. Another strand of literature argues that income inequalities are not a cause of corruption in developing countries. Shabbir & Anwar (2008) [42] found effect of income inequality was not a significant factor in corruption. Park (2003) and Brown *et al.* (2005) found no significant positive relation between higher income inequality and corruption. Jong-Sung and Khagram (2005) [31] argue that income inequalities influence corruption through “material and normative mechanism”. Dobson and Ramlogan-Dobson (2010) [18] hinted at a trade-off between corruption and income inequality. However some studies have highlighted the inverse relationship between income inequality and corruption. Andres and Ramlogan-Dobson (2011) [5] using a panel data methodology, contrary to other studies, found that lower corruption is associated with higher income inequality in Latin America. Chong and Calderón (2000) also found that for poor countries a fall in corruption (measured by institutional quality) is associated with a rise in income inequality. Sulemana and Kpienbaareh (2018) [44] on the basis of a panel data analysis of 48 Sub-Saharan Africa countries from 1996 to 2016 found that higher levels of income inequality are rather associated with lower corruption levels and suggestive of a changing relationship between income inequality and corruption among countries on different income trajectories and found the support for a U-shaped relationship between income inequality and corruption for low-income and lower-middle-income African countries but reported an inverted U-shaped relationship only for upper-middle-income countries. Policardo and Carrera (2018) [39] observed that income inequality could in fact be responsible for fostering corruption, which may be a reaction to a perceived unfair income distribution. Using a dynamic GMM model, the study robustly found that income inequality positively affects corruption, while corruption does not appear to be significant in the determination of income inequality. The various channels through which effects of high or increasing income inequalities are transmitted into high or increased level of corruption/perception of corruption are as given under:

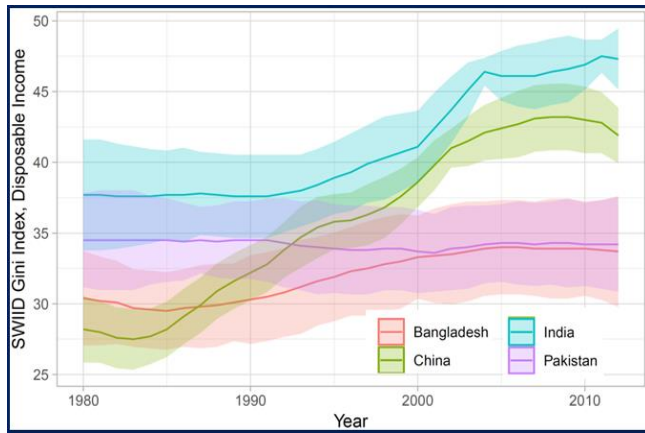
- In developing countries large public projects aimed at reducing income inequality create more opportunities for corruption (Alesina and Angeletos, 2005) [3, 4]. Accordingly, inequality is not a direct factor of

corruption, but it influence flows through demand for redistribution.

- Redistributive and regulatory policies intended to reduce inequality may bring about even more opportunities for corruption (Alesina and La Ferrara, 2005) [3, 4], Corruption may be seen as a price worth paying to lower inequality in these countries.
- Hellman and Kaufman (2002) [27] opined that rich are able to convert their greater wealth into greater political influence over both the formation and functioning of institutions.
- Higher income inequality can cause the lower trust, and the lower trust lead to the higher corruption, therefore, the higher corruption can contribute to the higher income inequality, and so on leading to a corruption-inequality trap. (Uslaner, 2007 & 2011) [47, 7]. That is, Inequality → low level of generalized trust + high level of trust within the group → corruption → strengthening of inequality.
- Creating a sense of dependency of ordinary citizens and a sense of pessimism for the future, which in turn undermines the moral dictates of treating your neighbors honestly (Ariely and Uslaner, 2017) [7].
- Less inequality reflects the existence of middle class that is, following Scott (1997), considered as a barrier against corruption.
- Begovic (2006) observed that the consequences of corruption due to inequality, practically the effects to economic inequality are stemming from the inadequate protection of the property rights of the poor.
- Distorting the key institutions of fairness in society, the courts, which ordinary citizens see as their protectors against evil-doers, especially those with more influence than they have (Glaeser *et al.*, 2003; Jong-Sung and Khagram, 2005) [23, 31].

6. Key lessons learned from the literature and implications for India

There are three main lessons learned from the present literature survey which have implications for India. Here it is pertinent to mention that India ranks very high on various measures of corruption as it rank 78/175 on corruption perception index (CPI) and its Gini- coefficient is also high in comparison to its neighbor and it is rising as shown in Figure 2. The data clearly indicate that Gini Index of inequalities in disposable income clearly shows that index of income inequality in India has been higher than its neighbours and it has shown a continuously rising trend increasing from 37.6 in 1980 to 44.8 in 2012.



Note: Solid lines indicate mean estimates; shaded regions indicate the associated 95% uncertainty intervals.

Source: Extracted from Standardized World Income Inequality Database v8.0 (Solt 2019) [43].

Fig 2: Gini Index for India and selected neighbors

First, the findings of the literature are very broad in the sense that rise in corruption is generally associated with increase in income inequalities, less access to key infrastructure, perverse system of awards and incentives and state capture by the elites. To mitigate the adverse distributional consequences of the corruption, the Government needs to keep the following in mind (as suggested by Gupta *et al*, 2002) [15, 24] while designing and implementing policies: efficient spending on education and health; focus on broad-based, labor-intensive growth; effective targeting of social programs; a low level of inequality in the access to education; and sound management of natural resources. Second, the research has shown that trust plays an important role in both corruption and inequalities. The inequality leads to lower levels of interpersonal trust, which in turn gives rise to more corruption. In India of late a stage has come where people are no longer considering corruption a serious issue and have accepted it as a new normal. Meet and Narayan (2014b) [36.1] has rightly remarked that in India 'We do not exactly know when and how it became *'under the table'* thing to *'over the table'* thing. The government should use policy measures for ensuring transparency in public sphere and civil society groups should play a proactive role to improve transparency in government working thereby increasing trust. There is need to reform the education sector as the education can be a tool of good governance and means of fighting corruption if its acquisition and delivery is corruption free and planning and policy making is in the earnest direction (Meet and Narayan, 2014a) [36]. So, based on the literature survey, it is our considered opinion that 'trust and sense of fairness' in the society need to be increased by increased transparency in policy formulation, its implementation and budgeting. Third, the literature survey has pointed out that corruption has led to distortionary tax mechanisms. Due to this, the rich end up paying fewer taxes compared with the more applicable to them, hence the rich obviously benefit from corruption and they are seen as nurturing corruption in the society for self-gain. In one hand this result in lower revenue collections and less expenditure on education and health. The efforts should be on ensuring strengthening of tax management system in India and to increase tax GDP ratio in India.

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