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Corruption-Growth Nexus: Evidence from China



Abstract *The study inspects the effect of corruption on economic growth in China. Corruption is a permanent dilemma, especially for emerging economies, and as a main indicator of quality governance. The study uses data from 1996 to 2015 for key variables e.g. corruption perception index, trade openness. The results show that in the short-run, China gains from the typical corruption, nevertheless the coefficient is statistically insignificant with a slight degree. Though, to support long-run sustainable economic growth, it is very important to overwhelm corruption and ensure good governance. The results show that China's corruption prevents long-run economic growth. Hence, to maintain stable development and strong economic growth in China, more efforts are needed to eliminate corruption from society and ensure the rule of law in good governance.*

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Introduction

Corruption is widespread and has been a global problem for a long time, particularly in emerging economies. It is commonly demarcated as abuse of public authorities and power for illegal private and personal benefits ([World Bank, 1997](#)), acting as a 'sand-in-the-wheels' of economic development (Fernando D., Carlos D, and Maria A., 2017). According to "Yi Quan Mu Si" "*corruption is the use of public authority and resources for private interests*". These unlawful personal and private gains mostly include gift, bribe, fraud, backdoor deals, extortion, smuggling, embezzlement, tax evasion, misuse of recourses and power, patronage, nepotism, and statistical falsification.

High level of corruption retards economic growth and development process, merely because entrepreneurs opt for rent-seeking activities rather than putting efforts in R&D ([Murphy, Shleifer, & Vishny, 1991](#)). Different aspects of governance are considered as

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critical factors that explain the difference in growth and performance amongst different economies. Good governance as reflected in state policies influences the social and economic outputs of a country. According to IMF (2002), the very first condition to put an economy on the growth path is the improvement of governance framework that disallows rent seeking and corruption.

Thus, in order to enhance the economic, social and socioeconomic performances, it is essential to decrease the degree of corruption. It is widely recognized that good governance with quality institutions play a key role in fostering economic growth. Existence of rampant and uncontrolled corruption indicates weakness of institutional framework. Studies consider corruption a global phenomenon and a major hindrance to achieve higher economic growth and development. Further, corruption also portrays weak institutional framework beside other governance indicators in an economy. In fact, such unlawful means abuse rule of law, which is a prerequisite for persistent economic growth and development.

In today's China, corruption is a scorching problem and the most deliberate topic among Chinese researchers, politicians and policymakers. However, in the last three decades corruption has been weakened significantly in China ([Manion, 2004](#)) and ([Wedeman, 2012](#)). In spite of government numerous anti-corruption campaigns and endeavors, corruption in China has managed to flourish across the nation and affected its various societies including economy, government institutions and politics.

China is one of the East Asian countries which have revealed remarkable growth in the last two decades. There is a paucity of work to understand the linkage between corruption and economic growth in China. Few macro-level studies have been carried out, however are the cross country panel analysis including China ([Neeman, Paserman, & Simhon, 2008](#); [Rock & Bonnett, 2004](#)). The study aims to inspect the association between corruption and economic growth based on annual data for the period 1996-2015 with the intention to understand the short-run and long-run connotations in the case of China.

Literature Review

In contemporary corruption, one school of thought believes that corruption spur economic activities, whereas the other accept that corruption hinders economic growth. [D'Agostino et al \(2016\)](#) in their recent investigation stated that corruption has a negative impact on economic growth from the perspective of spending in the country. [Ali et. al \(2015\)](#) stated that the role of governance which includes corruption, rule of law etc. should not be ignored to determine the key factors affecting economic growth. The findings suggest the preconditions in the form of good governance as necessary for the economic growth of the country. [Ugur \(2014\)](#) in an analysis stated that corruption is an indicator of feeble institutional quality which might unfavorably disturb economic growth.

[Mendoza et al. \(2015\)](#) state the corruption as a 'grease' or 'sand' in the wheels of commerce, affecting both micro and macro levels with an ultimate impact on the economic growth of the country. They used a rich micro data set to examine the issue of corruption in 30 cities of Philippines. [Farida and Ahmadi \(2006\)](#) examining the impact of corruption on productivity and growth in Lebanon. They argued that corruption leads to inefficiency in the economy. The study elaborated on this inefficiency by means of lower investment, while the other impact of corruption leads to ineffectiveness of government expenditure particularly from the development aspects. [Mo \(2001\)](#)

conducted an empirical analysis of 68 countries to see the effect of corruption on economic growth; his empirical outcomes exposed that corruption has harmful for economic growth. [Tanzi et al. \(1997\)](#) and [Gupta et al. \(1998\)](#) investigated that corruption is beneficial for the rich class of any country and it brought benefits to the rich-class on the cost of the poor people, ultimately demonstrated harmful results on economic performance. [Mauro \(1995\)](#) conducted a study of 68 countries to measure the impact of corruption on GDP. A measure of corruption by Business International was used in the study. He found an inverse relation between the two variables i.e. higher the corruption leads to lower GDP growth and investment rates. ([Meon & Sekkat, 2005](#)) also confirms that corruption is more harmful in terms of economic growth particularly for the countries with relatively weak governance indicators.

The other school of thought argues the low quality of institutions in the countries leads to improvement in the key economic indicators. Thus implies that poor governance and corruption improves economic productivity and enhance growth prospects. When the government imposed strict regulations and bureaucratic delays, private agents find it gainful and enable them to find their way out of official incompetence and bypassing the dysfunctional regulations. Therefore, corruption enhances economic efficacy and extracts a positive effect on the growth of economies. In other words, corruption performs mechanism of allocating deplete resources to those proficient firms which have capacity to afford the higher price of business opportunities ([Jiang & Nie, 2014](#)). [Huang \(2016\)](#) stated that 'grease the wheels' hypothesis is not supportive for selected Asia-Pacific economies and the common perception about corruption as bad for economic growth is not correct. Thus, the policies to overcome corruption in these economies may not be effective and may have a negative impact on economic growth.

[Huntington \(1968\)](#) asserts that corruption is different from theft and it's one of the steps of modernization. He further argued that such unlawful activities do not affect economic growth and development in any way. [Leff \(1964\)](#) and [Lui \(1985\)](#) claim that corruption can help in decreasing the time spent in ques thus provides time efficiency for dealing businesses. The bribe given to the officials' in-turns as an incentive thus resulted in bringing efficiency in the system that speeds up the processes in a very inefficient environment of working. [Beck & Maher \(1986\)](#) and [Lien \(1986\)](#) investigated that corruption helps in the right decisions and efficient allocation of resources as the bureaucrats have lack of knowledge. Leff (1964) studied the link between economic growth and corruption. According to his findings, corruption fuels the economic engine when there is inefficiency in the system due to strict regulations and other bureaucratic delays.

Conceptual Framework

Since 1980s, China's economic performance exhibit remarkable achievements: such as improving the standard of living of general masses, eradicate poverty, the establishment of an industrial base, improved transportation system, increase export, stability in exchange rate, completion of mega projects, and developed socioeconomic infrastructure.

China has been sustained 10 percent of GDP growth rate from the past thirty years. Furthermore, China has developed increasingly integrated to the global economy and converted as a key factor in global market as a result of such an exceptional GDP growth rate. However, the recent growth trends have now changed to negative growth in growth rates against the targeted growth posing an alarming situation for the respective authorities. The relatively slow growth rate vis-à-vis targets and past achievements may

have several plausible reasons. However, amongst these one notable hindrance is extensively under debate is ‘corruption’ obstructing the economic growth. The unlawful approach of personal and private gains do not only hinders economic growth but also affect the foreign investment and creating social unrest (Javorcik & Wei, 2009; Li, Xu, & Zou, 2000; Manion, 2004; Mauro, 1995; Rose-Ackerman, 1999; Wei, 2000). The government of China has also realized the dire consequences of corruption, and putting efforts to eradicate such with the good governance policies.

Despite the resilient economic performance over the years, China is unable to coup up with the problems of corruption and income inequality. In the presence of such an alarming level of corruption, it is entirely difficult for China to materialize its objective of “harmonious society”. This may be mainly because of dual economic systems prevailing in the economy. Since Deng Xiaoping's reforms in 1978, China is operating under a dual economic system i.e. capitalism and socialism, which allow corruption to flourish in the society. Corruption among the Chinese officials aggravates the problem which might lead to endless failure of political and economic systems in upcoming years.

Therefore, this paper is an attempt to endeavor the part of governance as a prerequisite to economic growth. Control of corruption is taken as a key indicator hindering the economic growth in China.

According to the International Transparency Report (2015), China ranked 83rd out of 175 on the basis of CPI. However, the less developed economies like Senegal, and Bosnia and Herzegovina are ranked better than China. Similarly, China approximately tied with Burkina Faso, El Salvador, Jamaica, Panama, and Peru, although China is more developed than these countries and having strong socio-economic infrastructure. Yet China, in terms of curtailing corruption, is lagging behind from other insister economies like Canada, Germany, Japan and the US. In order to compare and assess the level of corruption in China, Table-1 exhibits the corruption perception index for selected countries over the period 2008 to 2016.

Table 1. Corruption Perceptions Index (CPI) for Selected Economies

	2008	2009	2010	2011	2012	2013	2014	2015	2016
China	3.6	3.6	3.5	3.6	3.9	4.0	3.6	3.7	4.0
Burkina Faso	3.5	3.5	3.1	3	3.8	3.8	3.8	3.8	4.2
Canada	8.7	8.7	9.2	8.7	8.4	8.3	8.3	8.7	8.3
El-Salvador	3.4	3.5	3.6	3.4	3.8	3.8	3.9	3.9	3.6
Germany	7.9	8.0	7.9	8.0	7.9	7.8	7.9	8.1	8.1
Jamaica	3.1	3.0	3.3	3.3	3.8	3.8	3.8	4.1	3.9
Japan	7.3	7.7	7.8	8.0	7.4	7.4	7.6	7.5	7.2
Peru	3.6	3.7	3.5	3.4	3.8	3.8	3.8	3.6	3.5
Tobago and Trinidad	3.6	3.6	3.6	3.2	3.9	3.8	3.8	3.9	3.5
Serbia	3.4	3.5	3.5	3.3	3.9	4.2	4.1	4.0	4.2
US	7.3	7.7	7.1	7.1	7.3	7.3	7.4	7.6	7.4

Source: International Transparency Report (2017), 2008 to 2016

Methodology

The study considers the ARDL model for the annual data from 1996 to 2015 of China. Derivation of the model is as under:

The general form of the production function is:

$$Y = A(K, L) \tag{1}$$

Whereas: Y used for total output while K, L and A are for Capital, Total Factor productivity and labor respectively.

To take the total differentiation of production function we received the following equation:

$$DY = fDT + T(f_kDK + f_LDL) \tag{2}$$

We divide the above equation (2) by 'Y' and received the following results very similar to Solow (1957)

$$\frac{dY}{Y} = \frac{dT}{Y} + T f_k \frac{dK}{Y} + \frac{f_L L}{f} \frac{dL}{L} \tag{3}$$

Nevertheless, considering the Mo (2001) and Levine and Renelt (1992) the study established the subsequent production function, to understand the impact of corruption on economic growth.

$$\frac{dY}{Y} = f(CPI) \tag{4}$$

Whereas the CPI value is varying from zero to ten, zero means more corrupt country while 10 means less corrupt. Moreover, to complete the functional form and avoid the error of specification for this purpose we also introduce another variable in production function by adopting (Farooq et al 2013). Thus, the function form of our study becomes:

$$\frac{dY}{Y} = f(CPI, TO) \tag{5}$$

Where: TO represent trade openness, for trade openness we used the proxy of import plus export. As postulated by economic theory and previous literature that TO is positively related to economic growth. Therefore, the expected sign of TO will be positive. On the basis of previous studies on corruption, we can say that the sign of CPI may be positive or negative depending upon the economic and political situation of that country. So, the mathematical form of this study as is under:

$$PC_t = \alpha_0 + \alpha_{CPI} CPI_t + \alpha_{TO} TO_t \tag{6}$$

Where: PC_t is per capita income, to estimate the equation (6) for this purpose we used ARDL approach. Before, the estimation of equation (6) through ARDL approach, it is important to check the long-run connection between the variables in the model. For this purpose, we employed the bound test approach to test co-integration among the variables in the proposed model. We used ARDL approach because it can be applied without pre-testing of unit root for variables (Pesaran & Pesaran, 1997). It is generally argued that in the case of a small sample size, applying ARDL approach would lead to better, unbiased and consistent results vis-à-vis other approaches (Haug, 2002). This is mainly because of the key characteristics of approach which through the linear transformation of the data do not allow losing the long-run information. The approach also assumes that the residual of the model does not have any correlation. To get the efficient results from equation (6) for this purpose we used the log-linear specification of equation (6). Thus, the econometrics form of our study as is follow:

$$\ln PC_t = \alpha_0 + \alpha_{CPI} \ln CPI_t + \alpha_{TO} \ln TO_t + \varepsilon_i \tag{7}$$

Where: ε_t random error. The ARDL specification of equation (7) as is under:

$$\Delta \ln PC_t = \theta_0 + \theta_t t + \theta_{CPI} \ln CPI_{t-1} + \theta_{TO} \ln TO_{t-1} + \sum_{i=1}^m \alpha_i \Delta \ln CPI_{t-i} + \sum_{j=0}^n \alpha_j \Delta \ln TO_{t-j} + \varepsilon \tag{8}$$

The ARDL equation (8) based on both short and long run information, the null and alternative hypothesis are: $H_0 = \theta_c = \theta_y = \theta_g = 0$ and

Data Analysis and Results

To test the stationary of the variables for this purpose we apply ADF & DF-GLS of unit root (see table-2).

Table 2. Unit Root Test

	ADF		DF-GLS	
	WoT	WT	WoT	WT
At level				
LNCPI	-2.58	-3.05	-0.55	-2.71
LNPCI	-1.14	-3.81*	-0.42	-2.97**
LNTO	0.156	-1.86	-0.70	-1.84
At first difference				
Δ LNCPI	-3.77**	-3.59**	-3.36***	-3.77**
Δ LNPCI	---	---	---	---
Δ LNTO	-3.20**	-3.10*	-3.07***	-3.26*

The unit root results of ADF and DF-GLS revealed the same conclusion that the variable CPI and TO are stationary at I(1), while the variable PCI is stationary at I(0). Due to differences in stationary levels among variables in the model, the traditional co-integration approaches are recommended to apply for the core analysis (Engle & Granger, 1987). Similarly, the Fully Modified Ordinary Least Square (FMOLS) method (Johansen, 1988, 1995; Phillips & Hansen, 1990) and (Johansen & Juselius, 1990) also required the variables in the model with the same stationary level. Thus, ARDL is a suggested approach to estimate the long-run dynamic relationship for the current econometric model. The result of ARDL bound test approach reveals the presence of long-run association among the variables in the model. This interpretation is based on the value of F-statistic tabulated (23.7), which is greater than both UB range values at 95 percent and 90 percent. This allows applying the co-integration on equation (8) to estimate the consistent and unbiased coefficient for both short and long runs.

Table 3. Long and Short Runs Analysis

Long Run Results		
Variable	Coefficient	T-statistic
Ln CPI	0.114*	2.783
ln TO	0.6123***	14.48
Short Run Analysis		
ln CPI	-0.0886	-0.7225

$\ln TO$	0.0634***	5.1212
ECM_{t-1}	-0.10365***	-3.597
R-Square		0.72
F-statistic		18.513
DW		1.94
Test	F-St	PV
$\chi^2 ARCH$	0.6500	0.3422
$\chi^2 SERIAL$	1.8977	0.1161
$\chi^2 WHITE$	1.1329	0.2100
$\chi^2 NORMAL$	0.8775	0.7260
$\chi^2 REMSAY$	0.0577	0.7311

Note: Dependent Variable = $\ln PC$, *, ** and *** indicate at 1%, 5% and 10%

Table-3 reports the results of the ARDL approach. In the long-run, there is a negative association between economic growth and corruption while a positive connection exists between economic growth and trade openness. Keeping other things remain the same, a 1 percent upsurge in corruption trim down economic growth by 0.114 percent on average. Results are supported by other studies as well (Gupta et al., 1998; Mauro, 1995 & 1996; Meon & Sekkat 2005; Myrdal, 1968; Tanzi & Davoodi, 1997). Similarly, with a 1 percent surge in trade openness boost economic growth by 0.61 percent. Both the coefficients of CPI and TO are statistically significant at 1 percent and 10 percent respectively.

In the short run, both corruption and trade openness is positively associated with economic growth. This short-run analysis indicates that corruption help economic growth (Beck & Maher, 1986; Huntington, 1968; Jiang & Nie, 2014; Leff, 1964; Lui, 1985; Rock & Bonnett, 2004; Wedeman, 2002) and (Lien, 1986). However, the short-run parameter of CPI is statistically insignificant.

The value of ECM is negative reflecting the convergence towards equilibrium with stability in the next period. The ECM value is significant at 1 percent. In addition to estimating the model for corruption and economic growth, the diagnostic test was also applied to check the reliability of the model and estimated results. Engles' Auto Regressive Conditional Heteroscedasticity (ARCH) test for white noise, normality test for the residual, white test of heteroskedasticity and RAMSAT test for functional form. All diagnostic tests prove the model has no econometric issue.

Conclusion

The study limits the boundaries to evaluate the effect of corruption on economic growth, however, it opens the avenue for future research to understand the socio-economic dynamics of corruption.

The study uses the trade openness in the production function for assessing the impact of corruption on economic growth during the period from 1996 to 2015. The result of the bound test reveals the existence of long run connection among variables. The findings of the study are consistent with the previous studies both in the long and short runs. The results of the study show that in the short-run there is a positive relationship between corruption and economic growth. However, the short-run parameter of CPI is statically insignificant while in the long-run, corruption impedes economic growth.

These finding also supports the threshold level of corruption which in the long run may impede the growth dynamics of the country. The recent phenomenon of economic

slowdown may be the impact of high corruption in the past. Thus, a dire need is the control of corruption to keep the historic elevated pace of continual and stable economic growth parallel with the objectives of reducing income inequality and generation of “harmonious society”. Therefore, incremental efforts at the government level are required to curtail corruption and ensure the rule of law in society.

References

- Ali, M., Egbetkun, A., & Memon, M. H. (2015). Human Capital and Economic Growth: The Role of Governance. *The Pakistan Development Review*, 54(4), II, 529-549.
- Abed, G. T., & Gupta, S. (2002). *Governance, corruption & economic performance*. Washington, D.C.: International Monetary Fund.
- Beck, P. J., & Maher, M. W. (1986). A comparison of bribery and bidding in thin markets. *Economics Letters*, 20(1), 1-5. doi:10.1016/0165-1765(86)90068-6
- Busch, J. H., & Myrdal, G. (1968). Asian Drama: An Inquiry into the Poverty of Nations. *The Australian Quarterly*, 40(4), 118-121. doi:10.2307/20634250
- D'Agostino, G., Dunne, J. P., & Pieroni, L. (2016). Government Spending, Corruption and Economic Growth. *World Development*, 84, 190-205. doi:10.1016/j.worlddev.2016.03.011
- D'Amico, Nicholas (2015), Corruption and Economic Growth in China: An Emirical Analysis. *Senior Honors Projects*. 78. <http://collected.jcu.edu/honorspapers/78>
- Engle, R. F., & Granger, C. W. (1987). Co-Integration and Error Correction: Representation, Estimation, and Testing. *Econometrica*, 55(2), 251-276. doi:10.2307/1913236
- Gupta, S., Dawoodi, H., & Alonso-Terme, R. (1998). Does Corruption Affect Income Inequality and Poverty? *IMF Working Papers*, 98(76), 1-41. doi:10.5089/9781451849844.001
- Huntington, S. P. (1968). *Political Order in Changing Societies*, New Haven 1968. *Yale University Press, New Heaven and London*, 1-85.
- Farida, M., Fredoun, Z., & A. (2006). Corruption and Economic Growth in Lebanon. *Australian Agricultural and Resource Economics Society, 52nd Annual Conference*, 1-28.
- Javorcik, B. S., & Wei, S. (2009). Corruption and Cross-Border Investment in Emerging Markets: Firm-Level Evidence. *Journal of International Monetary and Finance*, 28(4), 605-624.
- Huang, C. (2016). Is corruption bad for economic growth? Evidence from Asia-Pacific countries. *The North American Journal of Economics and Finance*, 35, 247-256. doi:10.1016/j.najef.2015.10.013
- Jiang, T., & Nie, H. (2014). The stained China miracle: Corruption, regulation, and firm performance. *Economics Letters*, 123(3), 366-369. doi:10.1016/j.econlet.2014.03.026
- Johansen, S. (1988). Statistical analysis of cointegration vectors. *Journal of Economic Dynamics and Control*, 12(2-3), 231-254. doi:10.1016/0165-1889(88)90041-3
- Johansen, S. (1995). A Statistical Analysis of Cointegration for I(2) Variables. *Econometric Theory*, 11(01), 25-59. doi:10.1017/s0266466600009026
- Johansen, S., & Juselius, K. (2009). Maximum Likelihood Estimation and Inference On Cointegration - With Applications To The Demand For Money. *Oxford Bulletin of Economics and Statistics*, 52(2), 169-210. doi:10.1111/j.1468-0084.1990.mp52002003.x
- Khan, K., Anwar, S., Ahmed, M., & Kamal, M. A. (2015). Estimation of Consumption Functions: The Case of Bangladesh, India, Nepal, Pakistan and Sri Lanka. *Pakistan Business Review*, 17(1), 113-124.
- Khan, K., Chen, F. E. I., Kamal, M. A., & Shaikh, S. A. (2015). Determinants of Consumption Function. *Case of China and G7 Countries. International Journal of Economics and Empirical Research*, 3(4), 202-210.

- Khan, K. (2015). Real Private Consumption Modeling of Pakistan. *VFAST Transactions on Education and Social Sciences*, 6(2).
- Khan, K., Chen, F. E. I., & Ashraf, N. (2015). Impact of Government Spending on Private Consumption Using ARDL Approach. *Asian Economic and Financial Review*, 5(2), 239-248.
- Leff, N. H. (1964). Economic Development Through Bureaucratic Corruption. *American Behavioral Scientist*, 8(3), 8-14. doi:10.1177/000276426400800303
- Li, H., Xu, L. C., & Zou, H. (2000). Corruption, Income Distribution, and Growth. *Economics and Politics*, 12(2), 155-181.
- Lien, D. D. (1986). A note on competitive bribery games. *Economics Letters*, 22(4), 337-341. doi:10.1016/0165-1765(86)90093-5
- Lui, F. T. (1985). An Equilibrium Queuing Model of Bribery. *Journal of Political Economy*, 93(4), 760-781. doi:10.1086/261329
- Manion, M. (2004). *Corruption by design: building clean government in mainland China and Hong Kong*. Cambridge, MA: Harvard University Press.
- Mauro, P. (1995). Corruption and Growth. *The Quarterly Journal of Economics*, 110(3), 681-712.
- Mauro, P. (1996). The Effects of Corruption on Growth, Investment, and Government Expenditure. *IMF Working Papers*, 96(98), 1-28. doi:10.5089/9781451852097.001
- Méon, P., & Sekkat, K. (2005). Does corruption grease or sand the wheels of growth? *Public Choice*, 122(1/2), 69-97. doi:10.1007/s11127-005-3988-0
- Mendoza, R. U., Lim, R. A., & Lopez, A. O. (2015). Grease or Sand in the Wheels of Commerce? Firm Level Evidence on Corruption and SMES. *Journal of International Development*, 27(4), 415-439. doi:10.1002/jid.3077
- Mo, P. H. (2001). Corruption and Economic Growth. *Journal of Comparative Economics*, 29(1), 66-79. doi:10.1006/jcec.2000.1703
- Murphy, K., Shleifer, A., & Vishny, R. (1990). The Allocation of Talent: Implications for Growth. *The Quarterly Journal of Economics*, 106(02), 503-530.
- Neeman, Z., Paserman, M. D., & Simhon, A. (2008). Corruption and Openness. *The B.E. Journal of Economic Analysis & Policy*, 8(1). doi:10.2202/1935-1682.2013
- Pesaran, M. H., & Pesaran, B. (1997). *Working with Microfit 4.0: Interactive econometric analysis*. Oxford: Oxford University Press.
- Phillips, P. C., & Hansen, B. E. (1990). Statistical Inference in Instrumental Variables Regression with I(1) Processes. *The Review of Economic Studies*, 57(1), 99-125.
- Rock, M. T., & Bonnett, H. (2004). The Comparative Politics of Corruption: Accounting for the East Asian Paradox in Empirical Studies of Corruption, Growth and Investment. *World Development*, 32(6), 999-1017. doi:10.1016/j.worlddev.2003.12.002
- Rose-Ackerman, S., & Palifka, B. J. (2016). *Corruption and government: causes, consequences, and reform*. New York, NY: Cambridge University Press.
- Tanzi, V., & Davoodi, H. (1997). Corruption, Public Investment, and Growth. *IMF Working Paper*, WP/97/139, 1-23.
- Ugur, M. (2014). Corruption's Direct Effects On Per-Capita Income Growth: A Meta-Analysis. *Journal of Economic Surveys*, 28(3), 472-490. doi:10.1111/joes.12035
- Wei, S. (2000). How Taxing is Corruption on International Investors? *Review of Economics and Statistics*, 82(1), 1-11. doi:10.1162/003465300558533
- World Bank. (1997). *The state in a changing world*. World Development Report, New York: Published for the World Bank, Oxford University Press.