We are IntechOpen,
the world's leading publisher of
Open Access books
Built by scientists, for scientists

5,400
Open access books available

133,000
International authors and editors

165M
Downloads

Our authors are among the

154
Countries delivered to

TOP 1%
most cited scientists

12.2%
Contributors from top 500 universities

CLARIVATE ANALYTICS

BOOK CITATION INDEX

INDEXED

WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

A Theory of Corruption and Productivity Growth

Oluremi Davies Ogun

Abstract

This chapter was a theoretical construct on corruption within the context of long-run growth. It stressed and expounded the quality implications of corrupt practices for full capacity output. Rational behavior of economic agents was assumed and the typical capitalist economy was the setting. The ultimate channel of the effect of corruption on long-run growth was a declining total factor productivity growth that in turn caused the full information natural rate level of output to fall below full capacity output. Both the investment and human capital transmission mechanisms of corruptive practices were focused with trappings of institutional corruption discernible in the two cases. Different permutations and likely results were indicated and analyzed. The overall conclusion was that corruption was undesirable from the perspective of long-run growth.

Keywords: corruption, total factor productivity growth, long-run growth, environment and growth, public policy
JEL Codes: A11, A13, A23, 044, Z18

1. Introduction

Most studies on corruption stressed its growth penalizing impact (see, e.g., [1–4]). Three channels of effect were common in the literature, viz. human capital, institutions, and investment (e.g., [5]). In the majority of cases, the short-run effect was emphasized. However, in a recent publication, [6] developed a theoretical model to underpin the passive understanding that corruption lowered the marginal product of capital, hence, the growth of the economy. The channel of effect emphasized in the study was a reduced return on investment via an arbitrary tax. By this, corruption adversely affected the productivity (and, thus, productivity growth) of private capital, thereby, implicitly, impacting long-run growth.[1]

In the present chapter, the long-run effect of corruption was emphasized. The investment channel was retained but the route differed: investment quality rather than tax effect was stressed. Additionally, the human capital or labor productivity channel was developed to show that a significant fall in total factor productivity growth would be the ultimate result of corrupt practices. In the two cases, trappings of institutional corruption were discernible. Different permutations and likely results were analyzed. In Section 2 of the chapter, the model was presented with a

---

[1] Ordinarily, productivity is a level concept but, under a "continuous context" assumption, it turns into a growth factor.

particular discussion of its premise and general features as well as the different possible scenarios. Section 3 provided some concluding remarks.

2. The model

2.1 The premise and general context

This model was applied to the typical capitalist economy where corrupt practices were visible or usually exposed and thus not always hidden. The representative agents, firms and workers, were assumed to be rational. The basic premise was that corruption caused the full information natural level of output to fall below the full capacity output via its productivity growth impact.[2] This was depicted in **Figure 1**. In the diagrammatic representation, LRAS was long-run aggregate supply curve, Y_0 was full information natural rate level of output at which the aggregate demand for and supply of labor were equal, Y^* was full capacity output at which all employable resources were fully and optimally engaged, and AD_0 and AS_0 were referred to aggregate demand and supply curves, respectively.

Now, consider a typical endogenous production function such as below:

$$Y = AK^{\alpha}L^{1-\alpha} \tag{1}$$

where Y was the output, A was an exogenous constant and K was stock of physical capital and improvement to that stock from knowledge acquisition; L was stock of human capital; and α and $1 - \alpha$ were respective parameters or elasticities corresponding to K and L. The first-order condition for output maximization was that $\frac{dy}{dk} > 0; \frac{dy}{dl} > 0$.

An additional term capturing the externality from average human capital could be incorporated into the function such that
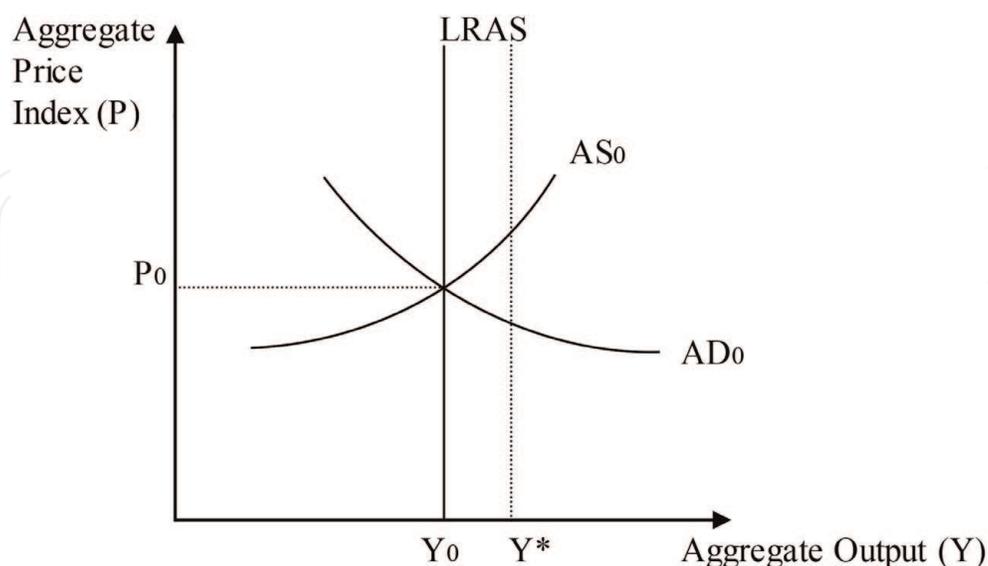

Figure 1.
Full information level of output versus full capacity output. Source: Adapted from [7].

---

[2] Other factors that could produce similar result include regimes of high income taxes and cost of regulation. For further details, see [7].

$$Y = AK^{\alpha}L^{1-\alpha}Le^{\omega} \tag{2}$$

where ω was a parameter/elasticity corresponding to the externality term that was expected to positively influence output growth.

The assumption of increasing returns of the endogenous model ensured that in steady state, changes in each of the right-hand-side variables with respect to output continued to be positive, that is, a positive second derivative.

Corruption affected factor inputs, capital (K), and labor (L) negatively, neutralizing the effect of the knowledge component of capital (K) and turning negative the externality from human capital (Le). Thus, the gains from both the stock of knowledge and human capital development were negative somewhat, returning the process to that of diminishing long-run returns.

The channel of effect of corruption on capital was the reduction in output quality that lowered capital's marginal product (MP_K), hence, the average return on capital investment. For labor, work effort declined as workers were discouraged. Accordingly, the marginal product of labor (MP_L), hence, the average return on labor investment, fell. The sum total of these outcomes was a falling total factor productivity growth. This translated to declining long-run output growth.

So far, the analysis had assumed perfect and full information dissemination, situations otherwise were examined in Section 2.2.

2.2 Cases

Besides the general case discussed above, several other permutations were possible:

a. Where corruption was widespread (endemic) and accepted as "a way of life." There would be no effect on labor productivity, but capital productivity (MP_K) would fall as in the general case.[3] Thus, the steady-state impact would be reduced by the extent of the nil labor productivity effect.

b. Where corruption was considered undesirable but its incidence was restricted to the top echelon of government and there was often a time lag in labor's knowledge of its occurrence. In the short run, output growth would not be adversely affected as $\frac{dy}{dk} > 0$ and $\frac{dy}{dl} > 0$. In the long run, with perfect information, output growth would suffer greatly as $\frac{dy}{dk^2} < 0$; $\frac{dy}{dl^2} < 0$; $\frac{dy}{dle} < 0$ and $\frac{dy}{dle^2} < 0$. Such a long-run outcome was clearly that of double growth jeopardy.

c. Where corruption was considered undesirable and information about its occurrence spread rapidly.[4] Both the short-run and long-run effects would be

---

[3] The prediction on labor productivity was influenced by the probability of people not feeling cheated in the circumstance. However, the case submission might not be without qualification: to the extent that resources meant for labor skills' improvement were diverted or embezzled, labor's contribution (potential) to long-run growth would fall.

[4] Cases associated with institutional corruption resulting from avoidable but sustained bureaucracy as in business registration, licensing, permits, and kickbacks in contract awards, readily became public knowledge. It could be argued though that the first three types of corrupt practices noted above would only generate level effect being "a once in a firm's lifetime payments," the case of kickback appeared different. The ensuing poor quality of output (firm's products) had welfare implication and also wasted public funds as the same contract was awarded repeatedly.

similar as $\frac{dy}{dk} < 0$; $\frac{dy}{dl} < 0$; $\frac{dy}{dle} < 0$ and $\frac{dy}{dk^2} < 0$; $\frac{dy}{dl^2} < 0$; $\frac{dy}{dle^2} < 0$.[5] Thus, rapid information dissemination as aided by the phenomenal growth of social media could facilitate this outcome. It could similarly constitute the missing link in non-capitalist countries where press freedom was restricted and the growth of social media severely circumscribed. Hence, the short-run and long-run effect of corruptive practices associated with this particular case might be quite different in such economies.

d. Where the representative agent (i.e., the firm) had information about the practice prior to bidding for the contract. The contract sum would be enhanced or increased by the extra payment made under the kickback arrangement. This reduced the average efficiency of (hence, return on) capital, dragging down long-run growth accordingly. Short run growth might not suffer backlash in this case, while the effect on labor productivity depended on whether scenario (a) or (b) also obtained. In general, $\frac{dy}{dk} > < 0$; $\frac{dy}{dk^2} < 0$; $\frac{dy}{dl}$ and $\frac{dy}{dl^2} > < 0$; $\frac{dy}{dle}$ and $\frac{dy}{dle^2} > < 0$.[6]

e. Where the representative agent had no prior information before bidding and was compelled to make the kickback payment out of the contract sum. Most likely, the agent, being rational, would reduce the quality of his/her product(s) in order to recover the amount paid and also protect profit margin. This would cause MP_K and, macro-economically, the average returns to capital to fall. Long-run growth suffered accordingly. Thus, $\frac{dy}{dk} < 0$; $\frac{dy}{dk^2} < 0$; $\frac{dy}{dl}$ *and* $\frac{dy}{dl^2} > < 0$ depending on which of scenarios (a) and (b) also applied. The short- and long-run externality from human capital, that is, $\frac{dy}{dle}$ *and* $\frac{dy}{dle^2}$, followed the trend of return on labor investment.

3. Concluding observations

This chapter had been concerned with the modalities of the impact of corruption on long-run growth in respect of which the explicit literature was nonexistent. The basic premise on which the discussion and analysis were anchored was that corruption penalized long-run growth by causing total factor productivity growth to fall. The ultimate result was that the natural rate level of output fell below the full capacity output.

It was thus clear from the analysis that notwithstanding the fact that an economy experienced full employment, its long-run growth could still be endangered by corrupt practices. However, the extent to which the basic result in this chapter was obtained depended crucially on the circumstances of each economy especially the state of its moral and ethical philosophy, the effectiveness of law and order, the

---

[5] This did not suggest that output would not change (grow) at all; after all, the expenditure approach to gross national income (GNI) guaranteed a rise in nominal output from such government spending. However, incremental addition to output would fall dragging down output (real) growth. In the long run, with the decline in product quality properly accounted for, the fall in output could be cumulative if not multiplicative.

[6] The practice in some countries of influencing journalists' choice/content of news feature (through "brown envelope" or other forms of inducement) could produce an effect similar to scenario (b) or (c) depending on the speed at which "covered corruptive practices" became public knowledge.

degree of press freedom, and the sophistication of economic agents including firms and labor. Accordingly, five scenarios of different possible permutations were identified and analyzed. The consensus from this exercise was that corruption could be very harmful to economic growth and within the context of endogenous growth model, it could significantly erode the gains.

In conclusion, it should be realized that the model developed in this chapter was only designed to ginger deep thought on the extent of the growth impact of corrupt practices. Quite clearly, further studies could provide different theoretical validations and/or empirical tests of the various propositions.

Acknowledgements

Author note

An abridged version appeared as research note under the title, "Corruption and Long-run Growth: A Framework" in International Advances in Economic Research, 20(2). 2014:245-46.

Author details

Oluremi Davies Ogun
University of Ibadan, Ibadan, Nigeria

*Address all correspondence to: r_ogun@yahoo.com

IntechOpen

References

[1] Murphy K, Shleifer A, Vishny R. The allocation of talent: Implication for growth. Quarterly Journal of Economics. 1991;**106**:503-530. DOI: 10.2307/2937945

[2] Murphy K, Shleifer A, Vishny R. Why is rent-seeking so costly to growth? The American Economic Review. 1993;**83**:409-414

[3] Mauro P. Corruption and growth. Quarterly Journal of Economics. 1995;**110**:681-712. DOI: 10.2307/2946696

[4] Asiedu E, Freeman J. The effect of corruption on investment and growth: Evidence from firms in Latin America, sub-Saharan Africa, and transition countries. Review of Development Economics. 2009;**13**:200-214. DOI: 10.1111/j.1467-9361.2009.00507.x

[5] Anorou E, Braha H. Corruption and Economic Growth: The African Experience. 2005. Available from: http://www.jsdafrica.com/Jsda/Spring2005/ArticlePDF/Arc_Corruption%20and%20Economic%20Growth.pdf

[6] Dissou Y, Yakaustava T. Corruption, growth and taxation. Theoretical Economics Letters. 2012;**2**(1):62-66. DOI: 10.4236/tel.2012.21011

[7] Miller RL, Vanhoose DD. Modern Money and Banking. 3rd ed. New York & Co: McGraw-Hill Inc; 1993