Are financial development and corruption control substitutes in promoting growth?☆

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Abstract

While financial development and corruption control have been studied extensively, their interaction has not. We develop a simple model in which low corruption and financial development both facilitate the undertaking of productive projects, but act as substitutes in doing so. The substitutability arises because corruption raises the need for liquidity and thus makes financial improvements more potent; conversely, financial underdevelopment makes corruption more onerous and thus raises the gains from reducing it. We test this substitutability by predicting growth, of countries and industries, using measures of financial development, lack of corruption, and a key interaction term. Both approaches point to positive effects from improving either factor, as well as to a substitutability between them. The growth gain associated with moving from the 25th to the 75th percentile in one factor is 0.63–1.68 percentage points higher if the second factor is at the 25th percentile rather than the 75th. The results show robustness to different measures of corruption and financial development and do not appear to be driven by outliers, omitted variables, or other theories of growth and convergence.

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1. Introduction

The importance, or unimportance, of complementarities has been a recurrent theme in economic development. This issue has been debated in various forms for decades, including by critics and proponents of “Big Push” theory.¹ Complementarities are important to understand from a positive and normative point of view. Their existence can lead to multiple equilibria and poverty traps, ideas which may be useful in understanding underdevelopment. They also tend to argue for policies characterized by multi-pronged, simultaneous investments rather than piecemeal efforts. For example, if health clinics and clean water are complementary in producing health, it may not be rational to invest in either unless both can be provided; conversely, if they are substitutes,
investing in only one of them (at least initially) may well
be justified.

The goal of this paper is to focus this interaction
question on two key ingredients of development: cor-
rupution control and financial development. Recent
research (cited below) suggests both factors are important
determinants of economic growth. The question we ask is,
do they serve as complements or substitutes in promoting
growth?

The question of interaction has important implications
in this context. Consider a proposal to condition aid on a
low level of corruption. One justification could be that low
corruption and other development ingredients are comple-
mentary — e.g., improving the financial system will affect
growth only if corruption is under control. This is similar to
the point that Johnson et al. (2002) make in the context of
several transition economies. But, if corruption control and
financial development are substitutes rather than comple-
ments, then financial system improvements of the more
corrupt countries pay the highest growth dividends. Aid
targeted toward financial systems could then best be spent
on corrupt countries. \(^2\) Optimal conditionality depends in
part on the sign of the interaction between different
instrumental dimensions of development.

Consider further the question of where and how to
invest development funds. Under substitutability, it is in
the countries at the lowest starting points that a given
(moderate) improvement will pay the greatest growth
dividend; under complementarity, by contrast, minimal
growth dividends result from a given (moderate) im-
provement in the most backward countries (the thrust of
the “Big Push” theory). This is because under substitut-
ability, the greatest gains come from investments early on
the development path, while under complementarity, the
greatest gains come toward the end of the development
path.

Substitutability would also tend to lead to more
specialization, i.e. focused improvements along one
dimension or another depending on relative costs, while
complementarity would argue for comparatively balanced
investments. Finally, complementarity would tend to
rationalize an all-or-nothing approach – substantially fix
both corruption and financial frictions, or do little, de-
pending on relevant costs – while substitutability would
tend to rationalize moderate levels of investment that do
not vary as widely with costs of interventions. In short, as
has long been argued, understanding interactions between
different ingredients of development is critical to rational
investment in development.

We begin with simple theory to provide a basis for our
empirical tests. An economy is endowed with a hetero-
geneous set of investment projects. Each project requires
an upfront capital investment that must be borrowed
within a potentially inefficient financial system. The
inefficiency, i.e. financial underdevelopment, is parame-
terized as a resource cost of intermediation. Undertaking
an investment project also requires a corrupt payment or
bribe. Corruption is parameterized as the size of the bribe
due, as a fraction of the investment. Thus the focus is on
corruption that is costly to the firm, e.g. extortion or
payment for services that should be provided for free,
rather than on grand corruption or on corruption that is
beneficial to the firm but costly to society, e.g. collusion
with the official to circumvent rational regulation. While
all kinds of corruption exist, ample evidence supports this
focus. \(^3\)

The model predicts that lower corruption and higher
financial development raise investment. Thus the two
factors have positive effects taken separately. Under a
plausible condition, the two factors act as substitutes in
facilitating investment. Substitutability arises because
higher corruption raises the need for liquidity and thus
makes financial improvements more productive. Con-
versely, a financially developed country is hurt less by a
given increase in corruption, since funds can be borrowed
more readily.

There is a bit of corroborative evidence for the
mechanism highlighted here in Safavian (2001), who
reports on survey data from small businesses in Russia. He
finds that enterprises that report being more harried by
corruption also apply more often for external finance and
rank lack of finance as a greater obstacle to business —

\(^2\) Of course, if low corruption is not only substitutable with financial
development in producing growth, but also complementary to aid in
producing financial development, it might still be optimal to condition
aid on low corruption.

\(^3\) In the survey of 3600 entrepreneurs worldwide summarized by
Brunetti et al. (1997), respondents ranked corruption as the second
most significant impediment to doing business, ahead of lack of
financing. Other similar surveys rank it as a significant obstacle,
though not always ahead of financing (see e.g. Beck et al., 2005).
Fisman and Svensson (2002), Johnson et al. (2002), Hellman et al.
(2003), and Beck et al. (2005) all find evidence that corruption
hinders firms growth and/or investment; quantitatively, Johnson et al.
find that firms facing pervasive corruption (no corruption) are
predicted to have a 33.5% reinvestment rate (55.1% reinvestment
rate). On a cross-country level, Mauro (1995) finds that corruption
hinders investment; quantitatively, a one standard deviation reduction
in corruption would raise the investment rate by about five percentage
points. Other evidence for corruption that acts as a hindrance, rather
than “grease”, to entrepreneurs can be found in de Soto (1989), Frye
and Shleifer (1997), Berkowitz and Li (2000), Safavian (2001), and
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