

Poverty traps and the robust political economy of development assistance

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Abstract Robust political economy emphasizes the lack of benevolence and omniscience of would be reformers. In addition, we consider the effects of biased decision-making for the robustness of the policy implications. This paper examines the robustness of the policy implications of models based on coordination failures and poverty traps. In particular, we address the revival in ‘big push’ type models and its policy implications. We argue that attempts to promote economic development through ‘big push’ models lack robustness.

Keywords Big Push · Coordination Failures · Foreign Aid · Political Economy

JEL Code O1, O20, P26, P41

1. Introduction

The success of the Marshall Plan in Western Europe and the rapid industrialization of the Soviet Union led many development economists to argue in favor of state-led planning after the Second World War. Concomitant changes in economic theory provided further support for state-led planning.¹ A different type of economics was necessary to understand developing economies.² Inspired by Keynesian ideas, the new development economics that emerged in the post-World War II period recognized the pervasive imperfections in markets, the fact

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¹ Easterly (2002 [2001]) provides a nice summary of post-WWII state-led development planning.

² See Hirschman (1981, chapter 1) for a masterful summary of these developments.

that there are missing markets, and that people living in the Third World are relatively unresponsive to price signals.

New state-led planning models provided the basis for increased government interventions. Gunnar Myrdal (1957, 79) succinctly summarized the conventional wisdom in the 1950s when he wrote:

The most important change in state policies in under-developed countries is the common understanding that they should each and all have a national economic development policy... Indeed it is also universally urged that each of them should have an overall, integrated national plan. All underdeveloped countries are now attempting to provide themselves with such a plan, except a few that have not yet been reached by the Great Awakening.

As Myrdal stated, the beginning of the process of economic development required massive state investment across many sectors of the economy simultaneously; they required a big push. Along with a big monetary push, the planning models required well informed reformers who knew where to best invest development dollars and well-intentioned reformers who actually pursued the interests of the citizenry.

The failure of state-led industrialization since the 1960s has led many economists to dismiss the early development models (Sachs, 1996). State planning provided, at best, a mechanism to catch-up to production techniques that the developed world used. It did not provide a mechanism for the innovation that occurred in the developed world, nor could it incorporate the emergence of new markets (Matsuyama, 1995). The success of the East Asian countries in achieving rapid growth through export oriented strategies provided significant evidence against the necessity of state-led industrialization. Furthermore, the lack of formalism that characterized these models inhibited their progress in academic circles as economics became more mathematical (Krugman 1995, Chapter 1).

In the past decade, themes from the development economics of the 1950s have experienced a renaissance (Murphy, Shleifer, and Vishny 1989, Rodrik 1996). A large and ever-growing literature has emerged that provides numerous mechanisms that lead to coordination failures and poverty traps. These include credit market imperfections, slow changing social norms, and missing markets (see Hoff (2000) and Azariadis and Stachurski (forthcoming) for summaries of this literature). Often, development practitioners have interpreted the models as support for massive efforts for foreign aid in the form of money and technical assistance.

We assess the policy implications of the coordination failure and poverty trap literature from the perspective of an emerging research program—robust political economy. Boettke and Leeson (2004, 101) have stated that

“Robust political economy requires that both the assumptions of benevolence and omniscience be relaxed so that both incentive issues and knowledge problems can be adequately addressed.”

The project in robust political economy requires consideration of the (1) imperfect information available to the reformers and (2) the effects of the self-interested behavior of the reformers. In addition, we discuss the biases in decision-making that rise from limited computational abilities of the reformers in order to assess the likelihood of success. Thus, we go beyond Boettke and Leeson’s formulation and include the bounded rationality of the policymakers as an additional robustness concern. In our formulation, policymakers encounter an incentive problem, a knowledge problem and a decision-making problem. They lack benevolence and omniscience as well as suffering from biased decision-making. Our analysis argues that *even if* policymakers have good information, the fact that they are boundedly rational makes it difficult for them to learn from previous mistakes and/or successes. In order to

illustrate, we consider recent proposals for improved development assistance based on the coordination failure and poverty trap literature.

2. Coordination failures in economic development

Traditional models of economic development (Solow-Swan, Cass-Koopmans) assume the neoclassical model of competitive markets. Free entry and exit, low transaction costs, symmetric information, and price-taking behavior characterize the economy. The profit motive provides a powerful incentive to eliminate any inefficiencies and firms enjoy zero economic profit in the long run. In this environment, the welfare theorems hold and a unique equilibrium exists. From these microeconomic foundations, balanced growth emerges and the process of coordination between the numerous individuals in the model is solved by assumption.

Early theorists in development economics rejected the neoclassical model of markets and their implications. Paul Rosenstein-Rodan (1943, 1957), Ragnar Nurkse (1953), and Gunnar Myrdal (1957) famously argued that the market mechanism could not overcome the problems of coordination and, as a result, underdevelopment resulted. State intervention, either domestically or internationally, was necessary for the development process to begin.

Two distinct, but complementary, arguments provided the basis for their claims. First, a ‘vicious circle of poverty’ was said to exist in developing countries (Nurkse, 1953, 3–4). Since a person’s willingness to save is a function of income, low incomes lead to low savings. When people do not plan enough for the future or save enough of their incomes, investment and economic growth are hampered. If development is to occur, the necessary investment funds must come from outside the domestic economy due to the lack of savings.

Second, profitable investments did not take place because they require complementary investments. Profitability in one sector depends on the existence of investments in other sectors in order to be profitable. Investments necessary to industrialize an economy would not occur because no one investor had the incentives or the capital necessary to invest across many sectors of an economy. Development required a ‘big push’—a simultaneous coordinated investment decisions across the economy.³

Recently, the models that supported the ‘vicious circle of poverty’ and the ‘big push’ have been recast as coordination failures and poverty traps. Coordination failures result when investments do not occur because the necessary complementary investments have not occurred. Rosenstein-Rodan’s famous shoe factory example illustrates the basic coordination problem. Imagine a region where there are a number of potentially profitable investments. Now, suppose a shoe factory is built and it generates one million dollars worth of wages. Only part of the wages will be spent on shoes and the rest will be spent on other things made by other businesses. But, the shoe factory needs all the wages from shoes to be spent on shoes for it to be profitable. As a result, the shoe factory does not make a profit and goes out of business.

If the shoe factory were built along with businesses that provide for life’s necessities, such as food and clothing, then it may be profitable. For example, suppose that people spend 40 percent of their income on food, 35 percent on clothes, and the remaining portion on shoes.

³ Of course, openness to international investment offered one way to overcome the lack of domestic investment as Rosenstein-Rodan (1957) recognized and Trindade (2005) recently formalized. However, in many countries, such as those in sub-Saharan Africa, increased international trade does not offer a viable alternative (Lumao and Venables, 2001).

Then, planning by the three businesses with an expectation of the percent of incomes that will be spent in each would provide an optimal allocation of resources, and all three businesses would remain profitable.

If the shoe entrepreneur knows other businesspersons will invest in the clothes and food sectors, then she will invest in the shoe factory. If they expect otherwise, then no investment in the shoe factory takes place. Investment in one sector depends on the expectations about the likelihood of investment in the other sectors. Thus, coordinated investments depend on the expectations of other investors. If expectations depend on historical memory, then an area that has not experienced high levels of investment will continue to struggle to attract investment.

Poverty traps result from “a self-perpetuating condition where an economy, caught in a vicious cycle, suffers from persistent underdevelopment” (Matsuyama, forthcoming). A number of factors can cause poverty traps, but some of the more common ones are imperfect competition, credit market imperfections, and self-fulfilling expectations. The common theme that can be found in all discussions of poverty traps, though, is that the poor lack access to some resource due to various imperfections and this prevents them from making investment that would raise their income. They remain poor because they are poor.

Adsera and Ray (1999) provide a simple, yet intriguing, model that suggests that a well-designed policy may shift an economy from a low-output equilibrium to a high-output equilibrium. It illustrates how a big push may overcome a coordination failure and a poverty trap. They consider a dynamic model where individuals choose between a low return industry and a potential long-run high-return industry if a critical mass enters the industry. If the positive externalities to the high return industry do not manifest themselves immediately, then investment in the high return industry does not take place. The intuition is simple. If no one has an incentive to enter the potentially high-return industry first, then everyone will remain in the low return industry. Thus, we have the potential for reforms to spur the process of development, overcome the poverty trap, and break the binds of historical path dependence through a big push. But what types of policies could overcome coordination failures and poverty traps? Furthermore, what informational, motivational, and decision-making assumptions are required to successfully implement the policies that achieve the desired results?

3. The big push and coordination failures

Viewing underdevelopment as a coordination failure with resulting poverty traps has a significant impact on the appropriate policies recommended. A new form of state-led development, which focuses primarily on welfare to the poor, has emerged as a popular policy prescription. Rather than pursue traditional policies that encourage investments in industry, the policies focus on poverty alleviation by investing in health care, education, and publicly provided technical assistance for agricultural production. The industrial big push has been replaced by a social welfare big push.

Jeffrey Sachs’s proposal (2005) to end poverty in our times relies on poverty trap models and offers a clear example of the policy prescriptions.⁴ He proposes a massive increase in foreign aid in order to alleviate extreme poverty (income that equals less than \$1 a day). Sachs (2005, 56) argues that

⁴ Throughout, we assume that the big push type policy prescriptions follow from the models. See Matsuyama (1996) for a dissenting view which we agree.

when poverty is extreme, the poor do not have the ability- by themselves- to get out of the mess. . . . When people are poor, but not entirely destitute, they may be able to save. When they are utterly destitute, they need their entire income, or more, just to survive. There is no margin of income above survival that can be invested in the future.

In just a few sentences, Sachs tells us that the main problem is a lack of savings (i.e., “no margin of income above survival that can be invested in the future”) and that the best policy response is to increase the incomes of the poor (i.e., “when poverty is extreme, the poor do not have the ability—by themselves—to get out of the mess.”). He proposes that foreign aid from the Western governments can overcome the problem so long as the relevant scientific information is included.

The Millennium Development Goals (MDGs) represent an application of Sachs’s approach. They have become the latest attempt by international donors to alleviate the problems of the developing world; they are the social welfare big push. They include the elimination of extreme poverty, the reduction in infant mortality, an expansion of publicly provided universal education, the containment of malaria and HIV/AIDS, and increased access to educational opportunities for females. Proponents argue that the main factor determining the success of these programs will be the overall amount of foreign aid that the West contributes; in other words, informational and incentive issues are secondary once sufficient funding has been attained.

While these policies are clearly based on the best of intentions (poverty alleviation, gender empowerment, etc.), do they exhibit robustness when examined by a political economist? That is, will the MDGs succeed in a world where the implementers of the reforms lack perfect information (i.e., lack omniscience), do not act in the public interest (i.e., lack benevolence), and fail to make unbiased decisions (i.e., are boundedly rational)? That is, what is the likelihood of success when the necessary information is often tacit and unquantifiable, and the incentives allow for self-interested behavior, and the cognitive ability of the policy implementers is limited? We consider each in turn.

A. Imperfect information

First, consider the role of imperfect information. Assuming complete information on the part of the planners assumes away the problem of implementing the big push. Successful implementation requires both scientific information and the information of time and place. The former is not sufficient to ensure success. Scientific information provides generalities that provide a framework for what can be accomplished. Local information provides further constraints on the policy success.

The MDGs offer examples of these types of informational problems. It appears that many of the MDGs require nothing more than simple technical assistance. For example, limiting the spread of malaria involves the transmission of information about how malaria spreads and provision of mosquito nets. Mosquito nets offer a simple and inexpensive solution to containing the prevalence of malaria. However, the real technical know-how involves providing incentives for the poor to use the nets. In some cases, the nets become either pillows or fishing nets; they are not used as expected. The technical knowledge regarding the transmission of malaria is not enough to ensure the policies success.

Expanding educational opportunities for females serves as another example. The MDGs call for formal changes in the educational system, but this is not enough. It appears that all the information necessary for this goal is to persuade public officials of the gains from an educated female populace. New statutes can achieve the goal. For many developing countries, making

females more educated also requires changes in informal rules and social norms. In a number of sub-Saharan African and Middle Eastern countries, women are informally ostracized for becoming educated and working outside the home. Men take a great deal of pride in serving as providers and feel a sense of shame if they must rely on their wives to support the family.⁵ Deeply held beliefs do not change over night or by the stroke of a pen. Again, the success of this goal depends on more than technical know-how. It requires the collection of information about the maintenance of beliefs and how to alter them.

An additional source of the lack of robustness of reforms that arise from informational imperfections such as the MDGs has been known for years. Hla Myint (1964, 120–121), a leading development dissenter, stated nearly four decades ago.

One of the most serious gaps in knowledge required for planning is likely to arise, not merely from the lack of ‘technical know-how’ but from the ignorance of the local conditions in the underdeveloped countries themselves, and inefficient ‘feedback’ of this vital local knowledge from different parts of the country to the central planning machinery... Frequently local information relevant for efficient planning depends on the qualitative differences and local peculiarities which are abstracted from the statistical compilations concerned with obtaining comparable sets of figures for the country as a whole.

The MDGs suffer from the same informational problems as the early big push models that Myint criticized. How does one aggregate information necessary for success when the aggregation process itself leads to the removal relevant information? This problem cannot be assumed away.

These examples illustrate that the information necessary for successful policies extends beyond scientific information. It involves tacit and informal information that cannot be easily collected. Hayek (1948) aptly summarized the problem of imperfect information for development policies based on the big push in a different context. He wrote that

The answer to our question will therefore largely turn on the relative importance of the different kinds of knowledge: those more likely to be at the disposal of particular individuals and those which we should with greater confidence expect to find in the possession of an authority made up of suitably chosen experts.

The social welfare big push avoids this distinction. As Hayek (1948) also noted, “today it is almost heresy to suggest that scientific knowledge is not the sum of all knowledge.” The same can be said in the present day when one examines the implementation of new demands for increased foreign aid. Without both types of information, the policies that arise from the coordination failure and poverty trap literature lacks robustness.

B. Self interest

Now, let us consider the role of self-interest in overcoming coordination failures and poverty traps. Successful policies require proper incentives on the part of implementers. Simply telling people to spend the money in the appropriate manner will not suffice. Individuals

⁵ Even in the relatively prosperous, cosmopolitan sub-Saharan African nation of Botswana, females are still discouraged from becoming educated and working. While conducting fieldwork in Botswana during the summer of 2004, one of the co-authors of this paper had an interview respondent explain why he does not want his wife working:

The money from my wife working would be nice. But it would not be right... My father would say, ‘What is wrong with you? Do you need money? Shame on you for making her work.’ Even if she wants to work, it would not be right because it makes me look weak.

Interview with an anonymous reporter at the President Hotel in Gaborone, Botswana from 3–5 pm on July 20, 2004.

have a choice whether or not to obey the order. The incentives facing the implementer may differ from the donor that advocates the big push. Thus, even assuming they have the proper information about how to help the developed world, one must consider the incentives and the robustness of the policy.

Given the vast amounts of resources involved in attempts to implement the big push, corruption naturally arises as a problem. The policy may either corrupt the reformer or the recipient of the funds. For example, many development policies create perverse incentives for those in government to make sure their countries appear or remain classified as low income or lower middle income. Countries that cross over certain income thresholds lose development assistance. For any rationally self-interested ruler, there is a strong incentive to keep a developing country's reported income below these thresholds, rather than promote good policies that send nations over the threshold. This may involve policies that discourage wealth creation or it may involve the corruption of public officials so as to not report improvements in well-being.

Self-interested behavior also affects the types of programs implemented. Donors may choose policies that have easily attainable and measurable goals. It ensures success and corresponds with the interests of the implementers. For example, building schools to increase access for young girls appears simple. But providing education is not the same as providing access. Building schools requires qualified teachers who show up to work. In many countries, this is not the case (Duflo and Hanna, 2005). Schools are built but remain relatively unused. The implementer's interest has deviated from the donor's and development does not occur.

Programs devoted to condom distribution to reduce the prevalence of HIV/AIDS provide another example of the lack of robustness. For example, Botswana has one of the highest rates of reported condom use and HIV/AIDS rates in sub-Saharan Africa. What explains this apparent anomaly? One reason is the interest of the donors is to counter the spread of HIV/AIDS in a simple manner. This includes giving out condoms without considerations of deeper cultural obstacles to success. In Botswana, non-traditional medicine practitioners have successfully discredited aspects of the national AIDS policy in the 1990s. They were not consulted when the national strategy was developed. Given the interests of the donors, it is not surprising that they relied on different types of information (Ingstad, 1990).

Robustness of the big push requires self-interest be harnessed through incentives. In some cases, the incentives lead to perverse outcomes. The cases of corruption, unnecessary schools, and the failure of AIDS policy in Botswana illustrate the point. In each instance, the self-interest of the implementers prevented the stated goal from realization.

C. Bounded rationality

Finally, let us consider the limited information processing abilities of the implementers of the policies. Simon (1957) pioneered the study of how limited computational capabilities affect decision-making and institutional evolution. A large literature has documented the numerous deviations from rationality that occur in processing information (see Kahneman (2003) for an overview and Duflo (2003) for applications to the developing world). Individuals often make systematic errors and improperly update their beliefs when new information emerges. Individuals suffer from systematic errors that reduce their utility that could be prevented with a well-designed intervention. Many papers suggest that the shortcomings in rational decision-making increase the need for state interventions (Sunstein and Thaler, 2003).

Glaeser (2005) challenges the policy implications of the bounded rationality literature. He forcefully argued that public officials have significantly weaker incentives to correct

their mistakes than market participants. The feedback mechanism for error correction in the public sector is weaker than in the private sector. If public officials are less likely than market participants to correct their mistakes after many rounds of trial and error, it is unlikely that coordination failures and poverty traps will be overcome through the big push. Rather, the likelihood of significant error increases when extensive interventions do not consider the robustness associated with biased and imperfect decision-making.

Public officials are not, *per se*, less likely than other individuals to make systematic errors. Nor are they more likely. They make errors like everyone else. Robust political economy requires an inclusion of this aspect of decision-making in order to better understand the robustness of reforms. Understanding the biases that decision-makers face in addition to recognizing their cognitive limitations improves the likelihood of averting policy disasters.

Cognitive limitations preclude the use of all the available information from being used when designing a policy. After the policy begins, new information emerges. But what assumptions have been made about the cognitive abilities of policy-makers to process new information? Often, implicitly, some form of Bayesian learning occurs so that the policy-makers correct their mistakes. However, ample evidence exists that demonstrates that policy-makers (and just about everyone else) do not engage in Bayesian learning (Kahmeman, 2003). People update information through biased heuristics that do not guarantee that mistakes will disappear. They may continue or worsen.

For the big push, the cognitive ability of the implementers is heroic. They must process information from nearly all aspects of the economy. They must understand how various interconnections work and evolve over time. They must recognize when externalities emerge and how to best deal with them so as to not replace one distortion with another. In general, they must be able to process numerous forms of new information and understand how to incorporate them into revisions without allowing for systematic error.

In addition to cognitive limitations, the problems of bounded rationality persist because of weak error correction mechanisms. Decision-making by political actors lacks the clear feedback mechanism to judge whether a reform is working. In the marketplace, profit and loss signals send a clear message to entrepreneurs. If they lose money, then they must make changes in order to survive. In the political market, however, the reasons for successes and failures of different political agents do not manifest themselves in easy to understand forms. Jointly produced public goods raise difficult questions of attribution. Monetary profits do not exist so as to serve as signals for continued behavior. Why a reform succeeded may have been the result of hard work or good luck. As a result, learning from past mistakes and success is difficult.

Interventions inspired by big push models include numerous projects that do not provide a feedback mechanism. In many cases, no monetary profit exists as the case of investments in publicly provided roads. In other instances, profits would not emerge for decades such as investments in primary education. In general, social welfare big push policies occur where markets are missing. Without a mechanism to provide information about success and failure, we have no reason to assume that the development practitioners will learn from their mistakes.

Persistent mistakes in policy can persist *even when* politicians have good information and good intentions. When applying the social welfare big push policy, new problems that arise when one considers the limited cognitive abilities of the development practitioners and when the feedback mechanisms for error correction are weak. Ineffective policies continue as agents do not process information about the shortcomings of the policy. Furthermore, as lessons emerge, the new information is processed through the interests of the donors rather

than the assisted. The history of development assistance provides ample evidence that these problems do emerge.

4. Conclusions

When the robustness of policies is taken seriously by reformers, the difficult and frustrating challenges involved in trying to escape poverty traps and avoid coordination failures come to the forefront. Achieving development through ‘big push’ type reforms cannot be assumed to succeed based solely on available resources. Imperfect information, the role of local information of time and place, self-interested actions by public officials, and biases in decision-making significantly constrain the likelihood of success. When the analysis includes the problems of credible commitments and the uncertainty associated with identifying the winners and losers of reforms the task becomes even more difficult.

This paper has drawn attention to the fragile nature of alleged benefits to comprehensive planning as the basis for economic development when coordination failures and poverty traps are taken into account. The Millennium Development Goals represent such an attempt and its unlikely success provides support for our arguments. We recognize in some countries, some of the goals will be achieved. Overall, we predict, the Millennium Development Goals will not be achieved.

Before concluding, we should be clear that the numerous pitfalls of the new ‘big push’ models that emerge when we consider the robustness of the policy implications do not imply that extremely small-scale government is necessary to overcome the problem of economy wide coordination and poverty traps. Rather the models suggest the importance of flexible rules that minimize the likelihood of grand failures due to imperfect information, self-interest, and weak incentives for error correction. Considerations about the robustness of policies based on coordination failures and poverty traps represents a return to the fundamental policy lesson contained in Hayek (1960). He argued that

Man learns by the disappointment of expectations. Needless to say, we ought not to increase the unpredictability of events by foolish human institutions. So far as possible, our aim should be to improve human institutions so as to increase the chances of correct foresight. Above all, however, we should provide the maximum opportunity for unknown individuals to learn of facts that we are yet unaware of and to make use of this knowledge in their actions. (30)

Mastuyama (1996, 152) has succinctly stated this position in modern terminology as

The prevalence of coordination failures suggests the importance of coordination experiments, there should be experiments in centralized allocation experiments, *as long as such centralization experiments are done in a decentralized way.*

The coordination failure and poverty trap literature, correctly interpreted, highlight the role of experimentation in policies as key for understanding why development occurs in some countries. Successful policies require the incorporation of information of time and place by agents who act in their self-interest in an environment that lacks strong incentives to correct the numerous biased decision-making processes of the agent.

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