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WORKING PAPER NO.61

# Public Finance and Economic Development: Reflections based on the Experience in China

Roger H. Gordon





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1 2 3 4 5 12 11 10 09

This working paper is a product of the Commission on Growth and Development, which is sponsored by the following organizations:

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Dutch Ministry of Foreign Affairs  
Swedish International Development Cooperation Agency (SIDA)  
U.K. Department of International Development (DFID)  
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## About the Series

The Commission on Growth and Development led by Nobel Laureate Mike Spence was established in April 2006 as a response to two insights. First, poverty cannot be reduced in isolation from economic growth—an observation that has been overlooked in the thinking and strategies of many practitioners. Second, there is growing awareness that knowledge about economic growth is much less definitive than commonly thought. Consequently, the Commission’s mandate is to “take stock of the state of theoretical and empirical knowledge on economic growth with a view to drawing implications for policy for the current and next generation of policy makers.”

To help explore the state of knowledge, the Commission invited leading academics and policy makers from developing and industrialized countries to explore and discuss economic issues it thought relevant for growth and development, including controversial ideas. Thematic papers assessed knowledge and highlighted ongoing debates in areas such as monetary and fiscal policies, climate change, and equity and growth. Additionally, 25 country case studies were commissioned to explore the dynamics of growth and change in the context of specific countries.

Working papers in this series were presented and reviewed at Commission workshops, which were held in 2007–08 in Washington, D.C., New York City, and New Haven, Connecticut. Each paper benefited from comments by workshop participants, including academics, policy makers, development practitioners, representatives of bilateral and multilateral institutions, and Commission members.

The working papers, and all thematic papers and case studies written as contributions to the work of the Commission, were made possible by support from the Australian Agency for International Development (AusAID), the Dutch Ministry of Foreign Affairs, the Swedish International Development Cooperation Agency (SIDA), the U.K. Department of International Development (DFID), the William and Flora Hewlett Foundation, and the World Bank Group.

The working paper series was produced under the general guidance of Mike Spence and Danny Leipziger, Chair and Vice Chair of the Commission, and the Commission’s Secretariat, which is based in the Poverty Reduction and Economic Management Network of the World Bank. Papers in this series represent the independent view of the authors.

## **Acknowledgments**

This paper is based on my presentation at the Growth and Development Conference held at the Brookings Institution on April 11, 2008, and I thank participants at that conference for helpful discussion.

## Abstract

Low tax revenue and slow economic growth are two central concerns in developing countries.

However, policies that raise tax revenue also harm economic growth. With tax revenue coming mainly from large capital-intensive firms, and with a large informal sector, policies that aid large firms and policies that discourage entry of new firms both help increase tax revenue. Entrepreneurial activity as a result is discouraged, lowering growth.

There is a basic tension in policy design between current tax revenue and economic growth. In fact, a loss in tax revenue can itself reduce growth, due to less spending on education and infrastructure. It can also undermine political support for the reforms from the poor and from government bureaucrats, both of whom are key beneficiaries of government expenditures.

What policies encourage growth without undue loss of current expenditures? One is debt finance, but this creates the risk of a financial crisis if tax revenue rises too slowly to repay this debt. A second is user fees, but such fees still undermine political support from the poor. A third is partial reform, maintaining both higher taxes on and some protection for easily taxed firms, even while barriers to entry are eased.





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# Public Finance and Economic Development: Reflections based on the Experience in China

*Roger H. Gordon*<sup>1</sup>

Public finance pressures are a central consideration in the policy debate over how best to stimulate growth in developing countries. The fiscal pressures are “simple”: little tax revenue and high public expenditure needs. According to IMF figures, tax revenue as a fraction of GDP in developing economies is roughly half as large as in developed economies. Yet the needs for public expenditures are much higher among developing economies. The existing infrastructure in poorer countries (such as roads, telecommunications, and port facilities) is so poor as to seriously limit economic growth, as does the poor education and health of their workers. Fiscal problems as a result seriously hamper economic growth in poorer countries.

The policy question is then how to reform existing tax structures so as to raise more revenue, and more broadly to encourage a more rapid rate of economic growth. The sharp differences between the observed tax structures in most developing countries and both those observed in developed countries and those recommended in the optimal taxation literature certainly provides a natural place to focus reform efforts. Observed tax structures in developing countries, for example, generally have a narrow tax base, largely confined to imports, natural resources, and manufacturing, tax rates that vary sharply by sector, important tariff and nontariff barriers, and substantial use of seignorage. These policies differ sharply from the conventional recommendations for a broad tax base with low tax rates, no intersectoral distortions, no trade barriers, and stable prices.

One immediate question that should be asked, though, is *why* developing countries have chosen such seemingly perverse policies. Unless we understand

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why the observed tax structures were chosen, it is premature to make recommendations about how these tax structures should be changed.

Section 1 of this paper discusses two alternative approaches to explaining the differing choices for the tax structure seen in developing and developed economies. One approach argues that the governments in developing countries are not acting in the economic interests of the population as a whole, perhaps unduly favoring family members or other special interests that benefit from the particular policies chosen. If this “political economy” explanation for existing policies were correct, there would be an economic gain from inducing governments to shift towards those tax structures recommended in the optimal taxation literature.<sup>2</sup>

An alternative approach to explaining the differing choices, developed in Gordon and Li (forthcoming), argues that the narrow tax base and high rates reflect the added problems faced in poorer countries in monitoring economic activity. The key difference between developing and developed countries, in their view, is that firms in developing countries can more easily shift into the informal (cash) economy. If some industries can easily shift into the informal economy, then the optimal tax policies would involve low tax rates on these industries, and likely high tax rates on those sectors that can least easily operate in the cash economy.<sup>3</sup> In addition, on second-best grounds, there could be efficiency gains from use of other policies that shift activity into the sectors where tax collection is easier. Examples of such policies include tariffs protecting the industries that face the highest tax rates, control over the allocation of credit and foreign exchange so as to favor these industries, policies such as license and registration fees focused on firms that otherwise pay little in taxes, and inflation, which serves as an implicit tax on the cash economy.

Under this second explanation, outside pressure to shift towards the tax policies recommended in the conventional theory (including a broad tax base with low rates, no tariffs, stable prices, and unrestricted markets) would generate an economic *loss*, since the policies differ from the second-best policies that best respond to the threat that firms will shift into the cash economy.

Section 2 then discusses the limited evidence regarding which of these two hypotheses more persuasively explains existing tax policies in developing countries. One source of evidence for which explanation is correct is whether the behavioral responses to tax reforms result in an increase or a decrease in tax revenue.<sup>4</sup> There are a number of papers that document a fall in tax revenue in response to particular economic reforms, as forecast under the second

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<sup>2</sup> The optimal taxation literature, in solving for policies that maximize a (weighted) sum of utilities, is at the same time characterizing policies that are Pareto optimal, at least conditional on the range of tax instruments under consideration.

<sup>3</sup> See Piggott and Whalley (2001) for further discussion.

<sup>4</sup> If a shift towards more conventional policies is an efficiency gain/loss, then the resulting behavioral responses should increase/decrease tax revenue.

explanation. My own reading of the collective evidence is that the second explanation is far more plausible. The rest of the paper then explores the implications of this explanation for how tax policies can best be designed to facilitate economic growth.

Under this second explanation, controls on the entry of new firms help protect the existing tax base, since new firms can much more easily operate in the cash economy than can larger existing firms. Yet new firms are plausibly a key source of the new ideas that generate economic growth. The result is a tradeoff between current tax revenue and future economic growth. The most dramatic example of this tradeoff is seen in the economic reforms in China. Starting in the early 1980s, China sharply scaled back existing restrictions on the entry and growth of new firms. The result was rapid growth, but also a sharp drop in tax revenue as a fraction of GDP: tax revenue fell from 31 percent of GDP in 1978 to 10 percent of GDP by the mid 1990's.

The paper then examines the policy implications of this tension between current tax revenue and economic growth, trying to draw general lessons from the experiences in China. The presumption is that market liberalizations should generate economic growth, but at the cost of current tax revenue.

Is this presumption of economic growth so assured, though? In particular, how did China manage to induce such rapid growth in response to market liberalizations, given the mixed experiences elsewhere, particularly in Eastern Europe following a similar set of economic reforms there? China's protection of existing producers from a loss in markets and funding under the economic reforms seems to have been a key element preventing an economic downturn there. The resulting stable macroeconomic environment then provided an attractive opportunity for new entrants. The role of such partial reforms is described in section 3.

The main question the paper then focuses on is how a country can best deal with the fall in tax revenue forecasted to result from market-oriented reforms. The choices are stark: use debt finance to replace lost tax revenue and hope to repay the debt out of future tax revenue, cut expenditures, or maintain expenditures where possible through user fees or private provision. The implications of each options are laid out in section 4 (debt), section 5 (cut in expenditures), and section 6 (user fees).

What if debt is issued to replace the lost tax revenue, in order to continue to finance essential educational services and infrastructure investments? If tax revenue will increase in the near-enough future due to the resulting economic growth, then the government and lenders may both hope that this debt can successfully be repaid without any future cutback in services, cutbacks that the debt was trying to avoid. The basic threat is that the resulting economic growth will not be strong enough and fast enough to generate additional tax revenue sufficient to repay the debt. If and when these fears materialize, lenders will seek a quick repayment of their debt, bringing on a financial crisis with all of the

associated economic costs. We argue below that this threat of a financial crisis is likely to be high unless countries start with a per capita GDP higher than exists in virtually all developing countries.

A second possible response to the fall in tax revenue is simply to cut government expenditures. There are compelling problems with this approach. For one, the resulting cutbacks in investment in infrastructure and education can directly undermine economic growth. This policy response also likely undercuts the political support for the economic reforms from both government officials and poorer residents. Government officials presumably care about the size of the budget they oversee, as well as about the welfare of residents. If future tax revenue is insufficient to compensate for lost current tax revenue, as would be the case if debt finance isn't a feasible option, then it certainly is not sufficient to compensate officials who care about the size of the budget they oversee *while in office*: officials will have an implicit discount rate much higher than the interest rate since they may not remain in office. Even if officials remain supportive of the reforms, poorer residents in particular lose from the cutbacks in expenditures, and their discontent can threaten social and political stability.

A third response, and largely the one that China followed, was to employ user fees to finance education, health care, and critical infrastructure projects. In the case of infrastructure, the government contracted with private firms to construct the needed projects in return for user fees for a given number of years. Schools and health clinics imposed fees on students and patients to help finance their operations. With control over the allocation of contracts as well as control over tax revenue, officials should be particularly supportive of this response to the fall in revenue. However, as with "doing without," this approach likely generates political opposition from the poor, who still suffer from the change, now due to increased fees rather than reduced access. While China has been able to ride out the thousands of resulting political demonstrations, most countries would likely find this approach politically unsustainable. There are many examples of populist governments being elected based on the political support from those who lose from the economic reforms, leading to an end to the reforms.

In response to the drop in tax revenue, policy then needs to steer between the Scylla of a financial crisis and the Charybdis of a populist government ending the reforms. Section 7 discusses options for trying to protect tax revenue, so as to ease these competing threats, while still encouraging entry and growth of new firms. Here, the Chinese approach of trying to protect the key sectors that were its primary source of tax revenue provides an interesting example of such a partial reform. This protection gradually eased as the government was increasingly able to collect revenue from a broader part of the economy. The partial reforms in China then not only helped generate initial growth but also helped protect future tax revenue, in both cases increasing the chance of success of the economic reforms.

Section 8 then provides a summary and conclusions.

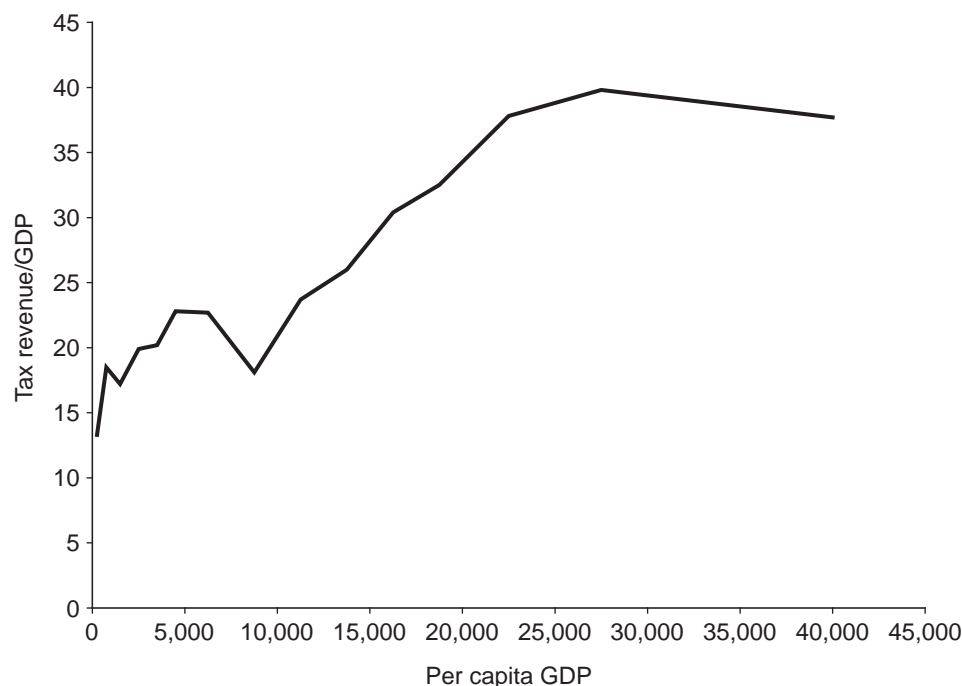
# 1. Why Such a Narrow Tax Base among Developing Countries?

According to IMF figures, overall tax revenue in developing countries, as a fraction of GDP, is roughly half of that seen among developed countries. Figure 1 summarizes the IMF data on tax revenue as a fraction of GDP, broken down by per capita GDP, expressed in real 1995 US\$.<sup>5</sup> Here, we find that tax revenue is roughly stable, averaging 17 percent of GDP, until per capita GDP reaches roughly \$10,000. Tax revenue then grows steadily to over 37 percent of GDP as per capita GDP grows to around \$20,000, and then reaches a plateau.

Yet, Gordon and Li (2007) find in a sample of 45 developed and developing economies that average statutory tax rates are remarkably similar among developing vs. developed economies. Together these figures imply that the tax base is much narrower in developing economies.

This narrow tax base arises in part because some firms are totally outside the tax base. According to the figures reported in Schneider and Enste (2000), the informal sector among poorer countries is roughly 35 percent of GDP, compared with an average among richer countries of about 15 percent.

**Figure 1. Tax Revenue/GDP**



Source: Michael Keen (see footnote 5).

<sup>5</sup> I would like to thank Michael Keen for making these data available to me. Currency conversions are based on purchasing-power parity.

These figures for the size of the informal economy, though, are not in themselves sufficient to explain the low tax revenue in developing countries.<sup>6</sup> Evasion among firms in the formal economy must also be much higher among developing countries.<sup>7</sup>

Not only is tax revenue low but the tax structure seen in developing countries also differs in important ways both from that existing in most developed economies and from that recommended in the optimal taxation literature.

The optimal taxation literature (Diamond and Mirrlees 1971) recommends avoiding any intersectoral distortions in production. One implication of this result is that a country should avoid any distortions to international trade patterns, since exporting one good in order to import another is implicitly just another form of production. For the same reason, a country should avoid any distortions to international flows of capital, since again investments at home or abroad are alternative forms of production. To avoid such distortions, capital investment in the country should not be taxed. Atkinson and Stiglitz (1976) showed under plausible assumptions that consumption taxes should have a uniform rate across all consumption goods.<sup>8</sup> In addition, Friedman (1969) found that the optimal level of inflation would lead to a zero nominal interest rate, so some deflation rather than inflation. While there are certainly deviations from these recommendations among the tax structures seen in developed economies, the broad outlines are largely consistent with current practice.

The same is very much *not* the case among developing countries. Developing countries often make use of excise or transfer taxes, with rates varying substantially across industries. Corporate income taxes are a major source of revenue, as are tariffs, in both cases distorting international trade. Inflation rates are often substantial, contrary to Friedman's recommendation. While countries have been replacing excise taxes with value-added taxes, the evasion rate is commonly high, again creating trade distortions since imports are more consistently taxed under the VAT than is domestic production. Finally, countries commonly have a variety of barriers to entry, as documented for example in Djankov (2002). Those firms that do enter can be heavily burdened by a variety of fees and license requirements, whose presence is an invitation for corruption.

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<sup>6</sup> If the shadow economy were the only explanation for lower tax revenue in developing countries, then tax revenue should equal  $0.65/0.85 = 76$  percent of the value in developed economies, as a percent of GDP, rather than under 50 percent.

<sup>7</sup> If the formal sector as a fraction of the economy is 76 percent as large in poorer than in richer countries, tax rates are comparable, but tax revenue is only half as large, then a quick estimate of the evasion rate in the formal sector in developing countries is  $1 - 0.5/0.76 = 34$  percent.

<sup>8</sup> The key assumption they made was weak separability in the utility function between leisure and all consumption goods. With this assumption, consumption patterns provide no information about earnings ability, conditional on labor income, so differential taxes across goods generate efficiency costs with no equity gains.



The natural response, given these sharp differences between observed tax policies in developing countries and both those seen in developed countries and those recommended by the optimal taxation literature, is to recommend that the current policies in developing countries be changed so as to more closely correspond to our conventional wisdom about a desirable tax structure. Newberry and Stern (1987), for example, carefully lay out such an agenda. The attempts to replace excise and turnover taxes, with rates varying substantially by industry, with a uniform VAT is also based on such reasoning, as defended for example in Gillis (1989).

In order to be confident in making such recommendations, though, it is important to understand well *why* poorer countries have adopted policies so sharply at variance with our conventional wisdom. Are the problems with the policies, or are they with our models for the economic pressures faced in these countries when choosing tax policies?

In trying to explain these policies the first presumption is that the countries have made poor choices for their tax structures, either due to a lack of sophistication or due to the government's pursuing some objective other than the objective presumed in the optimal taxation literature of maximizing some weighted sum of the utility of residents. Certainly the economics literature is replete with "political economy" models that attempt to show how self-interested officials may well choose some seemingly anomalous policy. The presumption then is that these "political economy" problems are much more severe among developing countries than among developed countries. If this is the explanation, then the welfare of the population should improve if the country is pushed to adopt policies that more closely resemble those seen in developed countries.<sup>9</sup>

Coming up with a political economy explanation for the long list of anomalous policies seen in developing countries, though, is a difficult challenge. If political pressures simply change the weights assigned to the utility of different individuals, then the main forecasts from the optimal taxation literature are left unaffected so that observed policies should continue to satisfy these forecasts. Gordon and Li (2007), for example, examined a variant of the model developed in Grossman and Helpman (1994) in an attempt to explain the above anomalies, but without success, because lobbying simply lead to an increase in the implicit weight given to the utility of groups that lobbied. Since recommended policies are those that maximize a weighted sum of utilities, policies that deviate from these recommended policies must not maximize any such weighted sum, implying that they are Pareto inefficient.

There are certainly papers that develop examples where political choices may be Pareto inefficient.<sup>10</sup> Results are inherently delicate, though, since when

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<sup>9</sup> Of course, the officials will feel worse off, making it difficult to induce a sustained change in policy.

<sup>10</sup> Dixit, in his Agnar Sandmo lecture from 2008, surveyed this research.

policies are Pareto inefficient, there are potential bargains that are Pareto improving. A key puzzling aspect of the tax structures in developing countries, though, is that the same policies are chosen across countries with very different political systems. The policies are also stable over time through a succession of different governments that potentially draw their political support from different groups within the country.<sup>11</sup>

Given the implausibility of a political economy explanation for such systematic deviations from the policies recommended by the optimal taxation literature, Gordon and Li (forthcoming) searched instead for a source of economic pressures faced in developing countries that had not been taken into account in the optimal taxation models. Once taken into account, these pressures lead to forecasted policies similar to those in fact seen.

Their hypothesis was simply that firms in poorer countries can much more easily operate in the cash economy, where evasion of taxes is easy.<sup>12</sup> This threat that economic activity will shift to the cash economy then affects the optimal tax structure in fundamental ways. Tax rates will be kept low in sectors where this shift to the informal sector is easy, while tax rates in other sectors can potentially be very high to compensate. Even with high tax rates in those sectors where firms cannot easily shift into the informal economy, overall tax revenue will still be low. With differential tax rates by industry, tariffs make sense to offset the resulting distortions to trade patterns. Since the informal sector relies on cash transactions to avoid tax, inflation provides an indirect means of imposing at least some tax on these firms.

Having high tax rates on some industries and low tax rates on other industries heavily distorts production decisions. As a result, on second-best grounds, policies that inhibit movement of activity out of the taxed into the untaxed sectors can potentially be an efficiency gain. License fees and other barriers to entry commonly seen among developing countries may survive because of such gains from protecting the country's tax base through discouraging entry of untaxed competition.

If the explanation for observed policies among developing countries is some such omission from the standard model, whether the one examined by Gordon and Li (forthcoming) or some other, then there would no longer be a *prima facie* case for questioning the forms that their policies have taken. Questions can always be raised about particular chosen tax rates, but there is no automatic case that say tariffs or differential excise tax rates by industry should be eliminated.

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<sup>11</sup> For example, tax policies in the United States until World War II broadly resembled those seen in recent years among developing countries, with a heavy reliance on tariffs, excise taxes, and later a corporate income tax.

<sup>12</sup> Cash sales leave no paper trail, so no evidence that the government can use to document a taxable transaction.

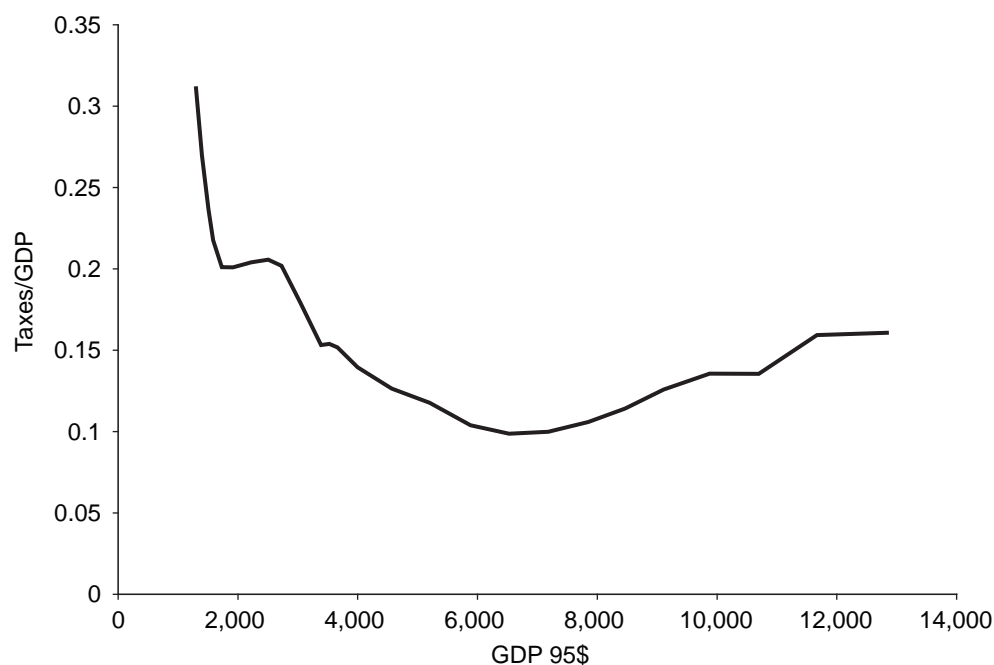
## 2. How Can Data Be Used to Judge between Alternative Theories?

Observed tax policies in developing countries are contrary to those recommended by standard optimal taxation models along many dimensions. In the previous section, we laid out two alternative classes of explanations for these anomalous policy choices. One class of explanations relies on “political economy” problems. Governments in developing countries are presumed to be more likely to choose policies that are contrary to the interests of the population as a whole. In this case, intervention to push countries to adopt more conventional policies would be appropriate. The other class of explanations focuses on previously neglected economic pressures faced in developing countries when choosing their tax structures. These pressures can easily change the form that optimal tax rates take. In particular, Gordon and Li (forthcoming) find that if firms in developing countries can more easily shift into the informal sector, then many of the seemingly anomalous tax policies we see in developing countries may well be second-best responses to the economic pressures they face.

What evidence might we use to help judge which class of explanations is more plausible? Under the first explanation, a (distributionally neutral) shift in policies towards those consistent with the conventional wisdom should lead to an increase in efficiency. If efficiency increases, then the behavioral responses to the tax changes will cause tax revenue to increase. In contrast, under the second explanation, a small policy change of this kind should leave efficiency unaffected while a nonmarginal change should cause efficiency to decrease. The behavioral responses to the tax changes should then either leave tax revenue unaffected or cause tax revenue to decrease.

What evidence exists about how the behavioral responses to tax reforms affect tax revenue? One very telling case is that of China under the economic reforms. These reforms involved a dramatic shift away from the controls that had previously protected state-owned firms, the main source of the government’s tax revenue. The fall in tax revenue in China was dramatic as seen in Figure 2. This figure replicates the graph in Figure 1 of tax revenue/GDP as a function of real GDP, but using IMF International Finance Statistics data solely for China, for 1978–2003. Prior to the reforms, tax revenue/GDP was over 30 percent and thus much higher than the average among other developing countries, presumably due to the more intense controls in pre-reform China. As the reforms were phased in, first in agriculture and then in other sectors, tax revenue fell to virtually half of the average in other developing countries, presumably due to a shift to having much weaker controls than elsewhere. As per capita GDP has grown, though, tax revenue/GDP has started to recover, roughly in line with the pattern seen in Figure 1.

Figure 2. Chinese Tax Revenue/GDP, 1978–2003



China of course is only one country. Various recent papers have examined the revenue effects of at least trade liberalizations in a broader set of countries. Baunsgaard and Keen (2005), for example, examine the impact of trade liberalizations on tax revenue for 111 countries over a 25-year period. Among the poorest countries in their samples, overall tax revenue fell by 70 cents for each dollar of revenue lost due to trade liberalizations. Similarly, Khattry and Rao (2002) examine the impact of trade liberalization in 80 countries between 1970 and 1998, and find that trade liberalizations reduce overall tax revenue in low-income countries by 50 cents for each dollar loss in tariff revenues.<sup>13</sup>

These papers examine revenue changes as a whole, and not just the revenue implications of behavioral responses. If countries are trading off the value of extra tax revenue with the associated economic costs created by an increase in tax rates, then tax revenue should in equilibrium fall if the country shifts towards a less appropriate choice of tax instruments, and conversely. That net revenue fell even though countries had the opportunity to raise other tax rates to offset the fall in tariff rates suggests that these other taxes were a less effective source of revenue.<sup>14</sup>

One surprising aspect of these empirical results about revenue losses from trade liberalization is that the theory in fact forecasts an *increase* in tax revenue

<sup>13</sup> Aizenman and Jinjark (2006) find similar qualitative patterns, with trade liberalizations associated with a drop in tariff revenue, a partially offsetting rise in VAT and income tax revenue, but a net revenue loss in lower income countries.

<sup>14</sup> Consistent with this interpretation, Aizenman and Jinjark (2006) refer to these other taxes as “hard to collect” and tariffs as “easy to collect.”

from trade liberalizations, as shown in Keen and Ligthart (2001). They emphasize that countries can replace tariffs point for point with a VAT, leaving the same tax collection at the border but adding new taxes on domestic production. That tax revenue fell so systematically in these reforms is then likely due to other aspects of these reforms. One such aspect could be replacing differential rates by commodity with a more uniform tax rate, leading to a drop in the tax rate in industries where collection is easy and a rise in tax rates in sectors where evasion will be high.

These empirical studies focus on one policy reform: trade liberalization. The key reform affecting economic growth, though, is likely to be the relaxation of restrictions on the entry and growth of new firms. Here the theory is clear that tax revenue should fall, since the entering firms will inevitably be harder to tax than the established firms. Even without direct empirical evidence on the revenue effects of easing such restrictions, other than from China, the theoretical presumption of a substantial fall in revenue is clear. Our focus is then on the resulting tradeoffs countries face between current revenue and future economic growth.

### **3. Market Reforms to Encourage Growth**

New firms likely generate externalities to the economy through testing new technologies, new products, or new forms of organization, compared to those in current use in the country. Successful firms will quickly be imitated while unsuccessful firms provide a role model for other firms about what *not* to do. In either case, incentives encouraging entry of potential entrepreneurs can be too low. Externalities from new entrants are plausibly a major source of economic growth.

Policies that inhibit entry then reduce economic growth. Market reforms that ease the barriers restricting the entry of new firms should then increase rates of innovation and growth. These reforms would be reinforced by further reforms that allow credit to be allocated by market forces, that eliminate tariff protection for the firms that had constituted the tax base, and that cut the inflation rate.

China undertook such reforms starting in the early 1980s. The result was a rapid rate of entry of township and village enterprises, collectives, and other permitted forms of new entrants. Aggregate growth rates reflected the benefits from this rapid rate of entry and innovation.

One immediate question is why these market reforms were so successful in China, whereas comparable reforms elsewhere, for example in Eastern Europe and in the former Soviet Union, were instead associated with a sharp economic downturn. One suggestive element of the Chinese reforms is that the planned allocations, requiring a given amount of output from firms and providing them a given amount of inputs, were left in place, preventing any fall in output due to

the reforms. Existing firms, though, could take advantage of new market opportunities to increase output, and new firms could enter to take advantage of the same opportunities.

Without this floor on existing output, the end of protection for existing firms would for various reasons be expected to lead to a sharp fall in output from these existing firms. Li (1999) explores one reason for such a fall: Existing firms often have substantial monopoly power. With new freedom to choose levels of production, as in the case of China's reforms, existing firms will take full advantage of this market power.<sup>15</sup>

In addition, existing firms can expect quickly to become unprofitable, facing new competition from imports and more lightly taxed new entrants. In anticipation of drops in demand, they could stop investment and new hiring and shed workers. The resulting fall in incomes among those working in existing firms will likely occur far more quickly than any rise in incomes generated by new entrants. The associated economic downturn can make many of the potential new entrants unprofitable, given the resulting lack of a domestic market for their products.

The partial reform in China, allowing new entry and new production from existing firms but no drop in output from existing firms, may then have played a key role in the generating the high growth seen in response to the reforms in China.

An economic reform that relaxes restrictions on entry of new firms should of course lead to new entry. Yet, at least in poorer countries, these new entrants largely operate in the cash economy, and to that extent are not part of the tax base. The resulting shift of economic activity out of the formal sector inevitably leads to a fall in tax revenue. The new entrants directly compete with the firms in the formal sector, leading to lower market prices and higher costs of inputs, lowering the profits in the formal sector.

In short, with the market reforms, economic activity can much more readily respond to the differential tax rates faced in the formal and informal sectors, leading to a jump in the resulting efficiency costs from these tax distortions and a fall in tax revenue.

## **4. Reduced Tax Revenue Offset by Debt Finance**

How should a country deal with the resulting fall in revenue? One possible response to the drop in government revenue is to borrow in order to replace the lost tax revenue, with the hope that the economic growth induced by market-oriented reforms will generate extra tax revenue in the future sufficient to repay this debt. Without such growth in future tax revenue, the government will be

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<sup>15</sup> When one monopoly sells to another, in vertical chains of production, the result is a drop in output even below the level that would be chosen by a single monopoly.



forced to cut future expenditures even when it found it politically too difficult to cut current expenditures, making the promised repayment of dubious credibility.

If successful, such borrowing allows the government to maintain its rate of investment in infrastructure and education, and maintain existing transfers to the poor. Maintaining political support for the reforms may in fact require not just constant but growing expenditures, relative to GDP, given the extra volatility in individual incomes brought on by a major change in government policies and the likely initial losses experienced by the poor as a result of the reforms. Economic growth may also lead to bottlenecks in the existing infrastructure, generating demand for additional infrastructure in response. This extra investment would require increased borrowing.

The risk when undertaking such borrowing is that the hoped-for growth may not materialize, at least fast enough to maintain the confidence of investors that they will ultimately be repaid. When new information makes investors less certain about eventual repayment, the country faces the risk of a financial crisis, with potentially high resulting costs.

When would it be plausible that future economic growth will yield sufficient tax revenue to repay the money borrowed? Consider the following back-of-the-envelope calculations, based on a stylized summary of the data in Figure 1. Assume in particular that tax revenue (and expenditures) as a fraction of GDP equals 19 percent for countries with GDP below \$10,000 that maintain controls restricting entry of new firms, as we presume is the norm for these countries.<sup>16</sup>

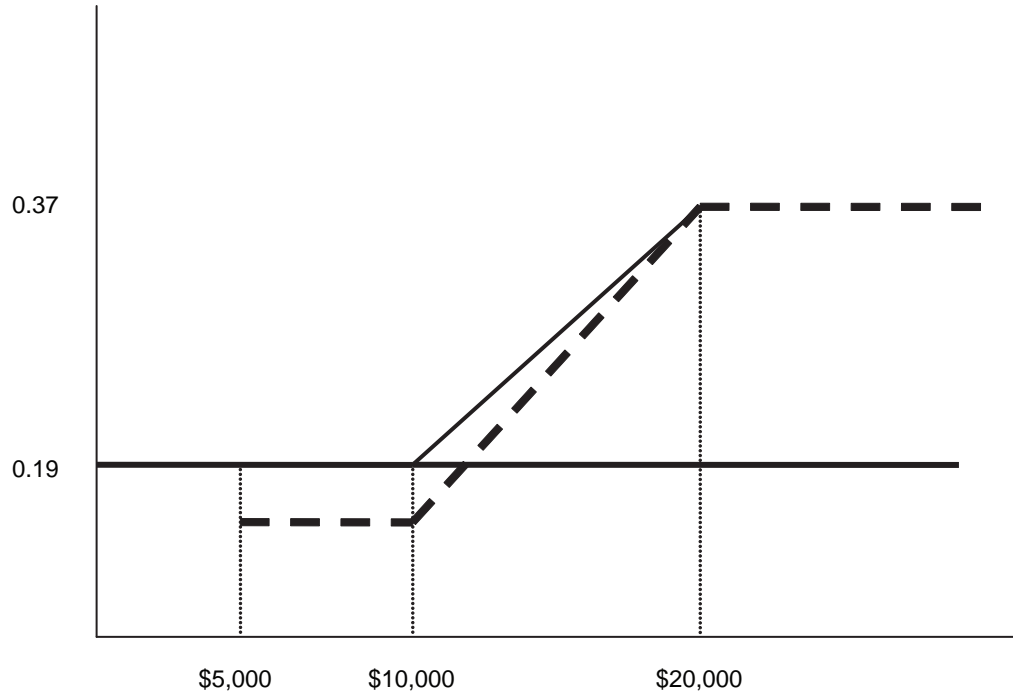
If economic reforms are introduced, eliminating a range of controls that had been in place to protect the government's tax base, assume that tax revenue falls to  $\alpha\%$  of what it would have been otherwise. (Recall that tax revenue fell to one third of its pre-reform level in China.) If tax revenue remains at this new fraction of GDP, then the present value of tax revenue equals  $.19\alpha Y / (r - g)$  due to the reforms, assuming a real growth rate under the reforms equal to  $g$  and a real interest rate equal to  $r$ . If expenditures are to remain at 19 percent of GDP, then the long-run fiscal deficit has a present value of  $.19(1 - \alpha)Y / (r - g)$ .

Debt finance is then sustainable only if growth leads to an increase in the tax base sufficient in present value to finance this deficit. Drawing on Figure 1, assume not only that tax revenue as a fraction of GDP falls at the date of the reform from 19 percent of GDP to  $19\alpha$  percent of GDP, but that it remains at this lower level as long as GDP per capita is below \$10,000, grows from  $19\alpha$  percent to 37 percent of GDP as per capita GDP grows from \$10,000 to \$20,000 and then remains at 37 percent of GDP as GDP grows further.

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<sup>16</sup> This figure (and the 37 percent figure used below) represents the fractions of GDP collected in tax revenue just below \$10,000 (just above \$20,000) GDP per capita, according to the IMF data.

**Figure 3. Assumed Tax Revenue/GDP under Economic Reforms**



These assumptions are portrayed graphically in Figure 3, where the dotted line describes the presumed path of tax revenue/GDP for a country that institutes market reforms starting from a GDP equal to \$5,000, while the heavy solid line represents presumed expenditures as a fraction of GDP, which need to be financed in present value out of tax revenue.

The budget is just balanced in the long run, maintaining the initial fraction of GDP in government expenditures and taking into account the changes in the fraction of GDP collected in tax revenue as the country grows, if

$$\frac{.19}{r-g} = \frac{.19\alpha}{r-g} + \int_{T_1}^{T_2} \left( \frac{.37 - .19\alpha}{10000} \right) (Ye^{gt} - 10000) Ye^{-(r-g)t} dt + \int_{T_2}^{\infty} .37 Ye^{-(r-g)t} dt. \quad (1)$$

Here,  $T_1$  designates the year in which per capita GDP reaches \$10,000, while  $T_2$  denotes the year it reaches \$20,000.

Table 1 provides some sample calculations, based on this formula. In the base case figures in column 1, we assume that the interest rate on the debt equals  $r = .1$  and that tax revenue falls by a third due to the market-oriented reforms ( $\alpha = .67$ ). The table then measures how high the initial per capita GDP must be for the country to be just able to maintain government expenditures at the initial fraction of GDP, financing these expenditures in present value out of future tax revenue. In particular, for any given values of  $\alpha$ ,  $r$ , and  $g$ , we find the initial value of  $Y$  that solves equation (1), solving in the process for  $T_1$  and  $T_2$  such that  $Ye^{gT_1} = \$10,000$  and  $Ye^{gT_2} = \$20,000$ .



**Table 1. Required Initial GDP, Full Debt Finance**

<i>r</i>	.1	1	.14
$\alpha$	.67	.8	.67
g=.03	\$7,200	\$5,900	\$9,200
g=.04	\$4,800	\$3,500	\$7,600
g=.05	\$2,700	\$1,700	\$5,800

**Table 1a. Required Initial GDP, 80% Debt Finance**

<i>r</i>	.1	1	.14
$\alpha$	.67	.8	.67
g=.03	\$6,500	\$5,400	\$8,600
g=.04	\$4,200	\$3,000	\$6,900
g=.05	\$2,200	\$1,300	\$5,100

Each row represents a different assumption about the resulting growth rate of GDP. With higher resulting growth rates, countries with lower initial GDP can still ultimately just finance the initial level of government expenditures, for any given resulting initial fall in tax revenue. While column 1 assumes that the fiscal gap is one third of 19 percent (6.3 percent) of GDP, column 2 assumes that it is 3.8 percent of GDP.<sup>17</sup> In column 3, we report results for a different market interest rate that must be paid on the debt.

The figure for the initial GDP required so that countries on average break even depends on each of the assumed parameters. Countries with close to these levels of initial GDP could easily find ex post that they are not able to repay the debt, leading to default with all the associated costs. To lessen these risks, assume instead that countries absorb one third of the fall in tax revenue with a cut in expenditures and two thirds of the fall with debt finance, thereby trading off the risks of a political crisis with those of a financial crisis. Then the levels of initial per capita GDP that will generate the present value of tax revenue just sufficient to repay this lower level of debt is described in Table 1a. The required levels of per capita GDP are about \$600 lower in each cell than for the comparable figures in Table 1, but the qualitative story remains unchanged.

Of course, all of the figures would be higher if the country hopes to have a cushion of somewhat more than enough future tax revenue to finance repayment of the debt. Jones and Olken (forthcoming) provide evidence that growth rates fluctuate substantially over longer periods of time among developing countries, with frequent periods of both rapid growth and stagnant growth. Such fluctuation argues for precautionary policies.

<sup>17</sup> The size of the fiscal gap would reflect both the initial fall in tax revenue that is replaced with debt finance plus any increase in expenditures required both to compensate net losers from the reforms and to deal with bottlenecks in infrastructure brought on by the reforms.

If a country will not in the end be able to repay the debt without cutting expenditures, then lenders will not credibly expect to be repaid and then not be willing to lend. With uncertainty about the growth rate that a country will have under the reforms, the interest rate on any debt extended will be higher. A higher interest rate raises the probability of default, and there may again be no interest rate at which lenders will be willing to lend.

The per capita figures in Table 1 and 1a are above the GDP of most all developing countries. In the IMF data set used in constructing Figure 1, the only developing countries with GDP per capita in the relevant range for most of these figures are Argentina and a few oil producers. Argentina, for example, had real per capita GDP during 1975–2000 ranging from \$6,000 to just over \$8,000. That Argentina ended up experiencing a financial crisis recently is consistent with our estimate that it was close to the margin in terms of its ability to use debt in order to maintain expenditures during a market reform. These figures therefore suggest that debt finance, at least by itself, is not a viable approach for dealing with the revenue loss brought on by market-oriented reforms.

In the above example, how future growth affects future tax revenue is simply based on an extrapolation using the cross-sectional information linking tax revenue to per-capita GDP. Whether tax revenue as a fraction of GDP grows more quickly in a country that has introduced market reforms than in a country that has not reformed is not clear. Here, the only evidence I know of comes from China, where there was a clear natural experiment that lasted for many years. The Chinese data, as seen by comparing Figures 1 and 2, are broadly consistent with this use of the cross-sectional information. While the theory clearly forecasts a fall in revenue when market reforms are first introduced, and forecasts a jump in the growth rate, it provides no help in forecasting the degree to which market reforms affect the future growth rate of tax revenue/GDP other than through effects on GDP.

## **5. Reduced Tax Revenue Offset by Reduced Expenditures**

A second strategy to deal with the fall in tax revenue is simply to reduce government expenditures accordingly. One immediate problem is that the resulting drop in expenditures on infrastructure, education, and health imposes direct costs on the rest of the economy, creating bottlenecks that can restrict economic activity and economic growth.<sup>18</sup>

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<sup>18</sup> Barro (1991), for example, finds that economic growth is a hump-shaped function of a country's effective tax rate, suggesting that at low tax rates the economic return to government expenditures more than outweighs the economic costs of a higher tax rate.

The drop in tax revenue and expenditures can also easily lead to political opposition to such market-oriented reforms both from within and without the government, even if the country is growing quickly. Presumably the reforms initially benefit most heavily those with the skills and energy to take advantage of them, while the poor receive fewer public services and transfer payments and may well receive reduced incomes. For example, farmers may face more intense competition from agricultural imports.

Consider first the situation of government officials. These officials presumably prefer to have control over a larger budget, given the perks and other benefits they receive implicitly tied to the size of the budget they control. At least based on the Chinese experience, market-oriented reforms result in a sharp fall in tax revenue. The expectation is that the resulting economic growth will eventually raise tax revenue as a fraction of GDP, given the figures seen in Figure 1. However, this eventual compensating growth in tax revenue as a fraction of GDP may not occur for many years.

A plausible measure of the utility received by officials would be something like the following:

$$\int_t e^{-(r+\rho)t} \left( \sum_i U_{it} + \lambda R_t \right) + \int_t e^{-rt} (1 - e^{-\rho t}) V.$$

Here, the utility an official receives in period  $t$  if the official is still in office is measured by

$$\sum_i U_{it} + \lambda R_t.$$

This expression consists of a conventional sum of utilities of all residents in the country plus some weight  $\lambda$  times government revenue (as a fraction of GDP) in year  $t$ , denoted  $R_t$ . If the official is not in office, the official's utility is some arbitrary value  $V$ , which by assumption is lower than the utility received while in office. For ease of interpretation, we have assumed that there is some probability  $\rho$  in any year that the official leaves office, a probability that of course can depend on the official's actions. The official then chooses policies to maximize this expression.

In the extreme case where the official cares only about tax revenue while in office, and the probability of leaving office is exogenous, then policies would be chosen to maximize the discounted stream of tax revenue, but discounting at the rate  $r + \rho$  rather than  $r$ . In contrast, Table 1 reports figures for initial GDP above which the present value of tax revenue increases due to economic reforms (and the reverse situation), where the discounting is at rate  $r$ . With an initial fall in tax revenue, and a hoped for increase in tax revenue in the future, the level of initial GDP where officials who care only about tax revenue will support economic reforms will be much higher than those seen in Table 1, due to the extra discounting due to the probability of leaving office and not benefiting from the

higher future tax revenue. Of course, preferences of officials differ depending on their likelihood of remaining in office long enough to benefit from a future increase in tax revenue, with more stable governments being more supportive of reforms. Preferences of officials could also change at some point during the reforms if officials find they now have a higher chance of leaving office. In response, they may find it in their personal self interest to re-impose controls in order to recoup tax revenue while they are still in office, now worrying less about the implications of the end of the reforms for future tax revenue.

To the degree that officials care as well about the welfare of residents, either directly or through their implications for the probability of remaining in office, then benefits residents receive from the reform may be sufficient to induce officials to support the reforms in spite of the losses they otherwise experience due to the fall in tax revenue they control.

But do the reforms increase the chances of remaining in office? The drop in public expenditures is a loss particularly to poorer families, who depend heavily on government transfer payments as well as publicly provided education and health care. A recent survey by Goldberg and Pavcnik (2007) provides evidence that poorer families often lose directly from globalization (a key dimension of market-oriented reforms), at least in the initial years of the reforms, presumably since they lack the skills and capital needed to participate in the new firms that enter to take advantage of the new opportunities.<sup>19</sup>

Even if the economic gains experienced by skilled workers are large, the initial losses experienced by poor families due to the reforms may be sufficient that the survival of a market-reform oriented government is put at risk. A “populist” government can attract support from the poor by advocating re-imposing economic controls in order to gain revenue from the economic activity that has already developed due to the reforms, or even simply to restore the situation prior to the reforms. The result would be an end to the undistorted incentives that were the underpinning of the economic growth. Such a political backlash due to the economic costs imposed on the poor by the reforms seems broadly descriptive of a number of observed changes in government, particularly in Latin America.

Governments vary in their vulnerability to such political opposition. The Chinese government for example has faced tens of thousands of demonstrations per year, largely in poor rural areas. While these demonstrations have led to changes in policy such as a repeal of the tax on agriculture and increased spending in inland provinces, these demonstrations have not been a serious threat to the overall direction of the economic reforms. Among the countries that have successfully maintained market-oriented reforms over many years, the frequency of autocratic regimes during the initial years of the reforms is striking; they include the Republic of Korea; Taiwan, China; Hong Kong, China; and

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<sup>19</sup> As further evidence, Hanson (2004) documents that NAFTA led to wage gains primarily for the most skilled in Mexico.

Chile. Such autocratic governments could more easily withstand political opposition.

## 6. User Fees as a Supplementary Source of Revenue

Rather than cutting government expenditures in response to a fall in tax revenue, an alternative strategy is to finance continuing government expenditures with user fees. This is not a feasible option when financing transfer payments; however, schools can charge tuition, health clinics can require fees for health care, roads can charge tolls, and other projects can charge equivalent user fees. Rather than having the government itself borrow to finance the initial investments, the government can contract with private firms to finance these projects, in return for the firms' right to collect user fees of some amount for some stated time period. This is largely the strategy that China followed during the initial years of the reform.

With this strategy, infrastructure and education are no longer bottlenecks that hinder future economic growth. Of course, the user fees can substantially exceed the marginal cost of an extra user, leading to underutilization of the facilities. However, any alternative tax used to finance a project would have its own efficiency costs, and user fees may well be the only feasible source of finance.

Several problems remain with this strategy. For one, private firms face the risk that the government will renege on its contracted promise of revenue from future user fees.<sup>20</sup> Default can be implicit, through new taxes on the firm's revenue, or construction of competing infrastructure that undermines the expected revenue from the initial project. Officials have an incentive to honor the initial contracts if they need to rely on private financing for such projects in the future and if they will be in office long enough for these considerations to be of importance. Otherwise, the incentive to renege can be strong: this is simply an example of time inconsistency.

Some of the same political pressures described in section 6 remain. The poor no longer receive free government services as a result of the reforms and instead face potentially high user fees for education, health, and transportation. Again, they may find themselves worse off during the initial years of the economic reforms, leading to the threat of strong political opposition to the market-oriented reforms.

Officials, though, may be particularly supportive of the reforms when such user fees are used to supplement revenue. By controlling the allocation of

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<sup>20</sup> See Wallack and Singh (2007) for evidence that this fear has hindered attempts in India to contract with private firms to invest in major infrastructure projects. Engel et al. (1997) discuss possible hold-ups in these contracts with private firms, and alternative contract terms that would be less vulnerable to these problems.

contracts, officials can extract in side payments an amount linked to the benefits received by the winning firm over the life of the contract, even if that particular official is in office for only a much shorter time period. In contrast, control over user fees that accrue on projects run by the government benefits officials only while they remain in office. Officials with a short time horizon are then likely to gain from reforms if there will be contracting with private firms.

While the privately financed infrastructure projects facilitate a higher economic growth rate, the resulting new entry and the resulting expansion in imports can still undermine government revenue by inducing a shift in resources away from the sectors that can easily be taxed into sectors where evasion is high, and by creating new competition for the firms that can most easily be taxed. As a result, government officials still face the temptation to re-impose restrictions on this new entry, in order to generate additional revenue while they are surely in office, fearing that future tax revenue will not increase by enough (or soon enough) to compensate.

## 7. Partial Reforms

A fall in tax revenue due to market reforms therefore leads to one or another threat to the continuation of the market reforms. If debt finance is used to maintain current government expenditures, in spite of the fall in tax revenue, the country faces a risk of a financial crisis. If it cuts back on current government expenditures to absorb the loss in current tax revenue, it faces infrastructure bottlenecks, and political opposition both from the poor and from lower-level government officials, who both benefited from these government expenditures. Finally, maintaining public services through user fees or contracting with private providers may gain the support of lower-level government officials who benefit from overseeing the contracting with private providers. However, the poor still lose, now from having to pay user fees for services that were free prior to the reforms, still leaving a threat that the resulting political opposition can undermine the reforms.

All of these pressures arise from a fall in tax revenue, suggesting that reforms that protect existing tax revenue can easily have a greater chance of success even if they result in a lower growth rate. What types of policies might be effective at preserving much of the initial tax revenue while still encouraging economic growth?

The key to the economic growth presumably is the elimination of any restrictions on the entry and growth of new firms. Key to preserving the initial tax revenue is protecting the financial position of the large manufacturing firms that provided the bulk of the initial tax revenue.

The main policies that had been used to protect the initial manufacturing tax base include protection of these firms from foreign competition through tariffs,



limits on the entry of smaller domestic firms and multinationals into these particular industries, and access to credit at terms these firms can afford in spite of the high tax rates they face.<sup>21</sup> If these firms are sold to foreign owners, the sale may include restrictions preserving the scale of operation of these firms, so as to preserve the existing tax base.

Policies fitting this description are commonly seen, not just in China but also in a variety of other successful reforming economies. For example, the Republic of Korea restricted foreign ownership of domestic firms in sectors that constituted the bulk of the country's tax base.<sup>22</sup> Many countries maintain some government control over the allocation of credit, for example through a state-owned bank, with larger and more easily taxed firms commonly receiving favored access to credit.

The successful entry of new firms will still undermine the profits of the firms that comprised the initial tax base, by raising the wage rate that they must pay to their workers. In addition, any new entry in the same industries will reduce the market-clearing price for their output, further eroding their profits. In the face of these pressures, the government would need to reduce the tax rate these firms face, if they are to remain profitable.<sup>23</sup> Imports then become less competitive, leading to a fall in tariff revenue, unless tariff rates fall as well. The hope is that by this date tax revenue from the newly entered firms can start to fill in for the erosion in tax revenue from the domestic manufacturing firms.

If tax revenue still erodes even with this more limited set of market-oriented reforms, then more gradual reforms should be implemented that lead to smaller fiscal pressures, less cutback in infrastructure investment and education, and/or less buildup in government debt. The policy trades off a slower growth rate with a higher chance that the reforms will be sustainable, through lowering the risks of a financial crisis or a political crisis.

Of course, the design of policies in a second-best context is necessarily more complicated. The first-best set of policies is clear, but these policies are no longer appropriate once the differential tax rate inevitably faced by larger manufacturing firms compared with most of the rest of the economy is taken into account. Due to these differential tax rates, some controls on entry can be justified on efficiency grounds. The simplistic solution of eliminating the differential tax rates assumes an idealized world without any problems of monitoring and collecting taxes on the cash economy. Instead, the second-best design of policies involves many uncomfortable tradeoffs.

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<sup>21</sup> Any interest-rate subsidies needed to make this credit attractive to the firms are self-financing if the new investment financed by the loan generates future tax revenue at least equal in present value to the size of the interest-rate subsidy. See Gordon (2003) for further discussion.

<sup>22</sup> See Jun (2009) for further discussion.

<sup>23</sup> In China, this cut in the tax rates faced by manufacturing firms occurred roughly 15 years into the reform period.

## 8. Conclusions

Public-finance economists appropriately argue for a broad-based tax that imposes the same tax rate on all economic activity in the economy, thereby avoiding any intersectoral distortions. With such a broad tax, tax revenue simply depends on total sales or total income, but not on the specific allocation of resources within the economy. Government officials should then find it in their self-interest to support market-oriented policies, since by raising economic efficiency the tax base and tax revenue will increase.

Enforcing a broad-based tax, though, requires that the government be able to monitor economic activity throughout the economy. Firms and individuals have no incentive to report taxable activity unless the government has some chance of detecting evasion. When transactions occur in cash, however, there is no paper trail that the government can use to document and tax such transactions. When transactions instead occur through the financial sector, whether through checks, credit cards, or bank deposits by firms of their net cash revenue each day, the government does have an independent source of information about the size of economic activity, allowing it to monitor and tax this activity.

Among developed economies, the information available from financial records is sufficient to allow countries to come close to an idealized broad tax.<sup>24</sup> However, among developing countries, the size of the cash economy is large, leading to a very narrow tax base. As a result, any given tax rate implies much higher efficiency costs given the resulting intersectoral distortions.

On net, poorer countries collect only about half as much revenue as a fraction of GDP as do developed countries, with the result being poor infrastructure and poor educational facilities. In an attempt to collect more revenue, governments are pushed to adopt policies that protect their existing tax base. This can involve tariff protection of the industries that comprise the bulk of their tax base, government controls on the allocation of credit so as to favor the heavily taxed firms, and controls over the entry of new firms that compete for resources with the more easily taxed firms.

However, these controls, by limiting the entry and growth of new firms, discourage the innovation that leads to economic growth. The result is a tension between policies that generate tax revenue now and policies that encourage economic growth.

Market-oriented reforms, which encourage the entry and growth of new firms, also encourage a shift in economic activity away from sectors that can easily be taxed. The resulting loss in tax revenue poses a dilemma for countries. In response, they can cut government expenditures, use debt finance to cover the

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<sup>24</sup> Andreoni et al. (1998) report, however, that the tax evasion rate in the United States among proprietorships in particular and small firms more generally is still very high, likely because of the extensive use of cash transactions by these firms.



costs of continuing the provision of the same level of public services, or find new sources of revenue such as user fees for schools, highways, and other public services previously provided without charge.

In this paper, we examine each of these options and argue that none are likely to yield sustainable market-oriented reforms, at least in countries with GDP below roughly \$10,000 per capita (1995 US\$). If expenditures are cut (or the government finances them through user fees), poorer residents are much more likely to oppose the reforms, since they depended heavily on these expenditures. The result can be a shift in government, with the new government adopting more populist policies and undoing the market-oriented reforms. If debt finance is used as a means of avoiding a cutback in services, the risk is that future tax revenue will prove to be insufficient to repay this debt. If credit is extended the country faces a risk of a future financial crisis. These problems seem inevitable for countries with initial GDP per capita below about \$10,000.

The remaining alternative is a more gradual introduction of market reforms by adopting policies that encourage the entry and growth of new firms while trying to protect the position of the firms that constitute the bulk of the country's tax base. This protection can take the form of tariffs, preferential access to credit, or barriers to entry of less easily taxed firms in the industries where these more easily taxed firms are dominant.

The reforms trade off a slower growth rate with a smaller chance of either a financial crisis due to excessive debt or a political crisis due to cutbacks in public expenditures.

These more gradual reforms can also potentially be defended on efficiency grounds. When some sectors can be taxed much more easily than others, a full adoption of market-oriented policies will lead to an excessive shift of economic activity out of the sectors that can most easily be taxed. Policies that limit the shift in resources out of the more heavily taxed sectors can then be defended on second-best grounds.

The cost is that the recommended package of reforms becomes more complicated, and loses the clear intellectual appeal of a full set of market-oriented reforms. However, the messier second-best policies may both be more efficient and have a much greater chance of ultimate success.

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**L**ow tax revenue and slow economic growth are two central concerns in developing countries.

However, policies that raise tax revenue also harm economic growth. With tax revenue coming mainly from large capital-intensive firms, and with a large informal sector, policies that aid large firms and policies that discourage entry of new firms both help increase tax revenue. Entrepreneurial activity as a result is discouraged, lowering growth.

There is a basic tension in policy design between current tax revenue and economic growth. In fact, a loss in tax revenue can itself reduce growth, due to less spending on education and infrastructure. It can also undermine political support for the reforms from the poor and from government bureaucrats, both of whom are key beneficiaries of government expenditures.

What policies encourage growth without undue loss of current expenditures? One is debt finance, but this creates the risk of a financial crisis if tax revenue rises too slowly to repay this debt. A second is user fees, but such fees still undermine political support from the poor. A third is partial reform, maintaining both higher taxes on and some protection for easily taxed firms, even while barriers to entry are eased.

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The mandate of the Commission on Growth and Development is to gather the best understanding there is about the policies and strategies that underlie rapid economic growth and poverty reduction.

The Commission's audience is the leaders of developing countries. The Commission is supported by the governments of Australia, Sweden, the Netherlands, and United Kingdom, The William and Flora Hewlett Foundation, and The World Bank Group.