

## Call for Research Proposals

### Fiscal Policy for Sustainable and More Equitable Growth in Latin America and the Caribbean (RG-T1920)

#### I. Motivation

It is a well documented fact that, over the last several decades, Latin America and the Caribbean (LAC) has lagged behind most other regions of the world (especially Asia) in its growth performance (see Zettelmeyer, 2006; French-Davis, 2009; and Kohli, Loser and Sood, 2010, among others). A number of factors have been singled out in the literature as contributing to this relatively poor performance:

- High vulnerability to exogenous shocks (terms of trade changes; sudden stops in capital flows);
- Policy volatility and pro-cyclical, leading in some cases to fiscal and external unsustainability and bouts of crisis;
- Low savings and investment rates;
- The poor state of infrastructure;
- Relatively poor quality of education, with adverse effects on labor productivity and income distribution;
- Low total factor productivity, reflecting a range of institutional, regulatory, and other policy shortcomings (Pagés, 2010); and
- Relatively weak “social capital,” namely trust in the institutions of the state and civic cooperation (Putnam, 1993 and 2001)

Although the region recovered faster than most others (except Asia) from the global financial crisis of 2008-09, and is expected to outpace them in 2010-11 (WEO, 2011), a number of concerns (in particular related to overheating risks) persist regarding the sustainability of recent performance over the medium term.

It is also widely recognized that, despite significant progress in reducing poverty and inequality over the last ten or so years, LAC remains on average the most unequal region in the world (Birdsall et al., 2008; Rojas-Suárez, editor, 2009; and López-Calva and Lustig (2010). This fact, along with growing concerns about crime and security, contributes to social discontent and support for populist governments in some countries of the region. Moreover, as discussed further below, there is growing theoretical and empirical evidence that high inequality also contributes to mediocre growth performance, enhancing or adding to the impact of the other factors mentioned above.

There is a widespread recognition in the region that shortcomings in fiscal policies have contributed to its sub-par growth performance. These shortcomings affect macroeconomic as well as structural and institutional aspects of fiscal policy. On the macro side, there is a vast literature documenting:

- Pro-cyclical fiscal policies accentuating economic volatility, particularly but not exclusively in natural resource-dependent countries;
- The adverse impact of stop-go fiscal policies on human and physical capital accumulation;
- Inappropriate fiscal-monetary policy mixes, contributing in the more recent past to large capital inflows and excessive real exchange appreciations in a number of countries;
- The need to raise the public sector's contribution to national savings; and
- Lingering risks to fiscal sustainability in parts of the region.

On the structural front, a number of studies have highlighted pervasive tax policy weaknesses throughout the region:

- Narrow bases (as a result of pervasive exemptions, special treatments, and loopholes);
- Relatively high marginal tax rates;
- Distortive features, like cascading and reliance on export taxes and financial transaction taxes in some countries;
- A high degree of complexity, raising compliance costs, and leading to a proliferation of special (presumptive) regimes; and
- Significant potential tax handles (in particular personal income and property taxes) relatively unexploited.

Similarly, a number of expenditure policy shortcomings have been identified:

- Pervasive rigidities (extensive earmarking in some countries; inflexible civil service employment regimes in all);
- In some countries, significant implicit or explicit price subsidies (especially for energy products);
- Frequently inadequate coverage of social security programs (pensions and health); proliferation of overly generous special regimes;
- A disproportionate share of spending on tertiary education; and
- Low levels and poor quality of public investment, especially in infrastructure, in many countries.

Finally, although substantial progress has been made in most countries of the region in strengthening tax administration and budget management, significant weaknesses also persist on the institutional front, especially at the increasingly important sub-national level.

Against this background, this project aims to provide fresh theoretical insights and empirical evidence on the impact of fiscal policies on major determinants of growth performance in a representative sample of Latin American countries. These analyses, including consideration of possible trade-offs, timing and sequencing issues, and political economy and major relevant institutional constraints, would provide a basis for the formulation of

recommended country-specific fiscal reforms aimed at promoting higher sustainable and equitable growth over the medium to long term.

## II. Overview of Literature on Fiscal Policy and Growth

Any rigorous analysis of the impact of fiscal policies and institutions on the medium to long-term rate of economic growth must build on an explanation of the determinants of growth itself. The last few decades have seen the rise (and sometimes fall) of a number of growth theories and extensive empirical testing of them. Appendix I below provides an overview of the main theoretical and empirical contributions to the growth literature (see also Kong, 2007; and Myles, 2009, for recent more detailed surveys of this literature), including some contributions specifically focused on Latin America.

There appears to be an emerging consensus that, although none of the growth models can fully explain either the evolution of growth rates in individual countries or differences in growth performances across countries, they have helped identify critical factors that, to different degrees in different countries, can contribute to the achievement of sustained high growth rates. Among these factors are, in addition to human and physical capital, a number of economic and institutional influences on total factor productivity (TFP).

In recent years, a significant strand of the growth literature (so-called growth diagnostics) has focused on the identification in individual countries of the most binding constraints to growth, with a view to developing country-tailored reform strategies to eliminate (or at least mitigate) such bottlenecks (Hausmann, Rodrik and Velasco, 2004). Examples of applications of growth diagnostics to Latin American countries can be found in Agosin, Fernández-Arias and Jaramillo (2009) and Rojas-Suárez (2010).

The identification of major impediments to growth is important for the identification of appropriate potential reforms of tax or public expenditure policies, and the assessment of their impact on growth. For instance, if the growth diagnostic suggests that a low rate of private savings is a major impediment to growth in a particular country, the focus of fiscal reform should be on changes in the tax system that would promote increases in the savings rate (along the lines discussed in the previous section). Countries with low investment rates due to high profit taxes could consider reform programs that include a reduction in such rates. Indications that shortages of human capital are more binding than infrastructure bottlenecks would call for corresponding changes in the public expenditure mix, as well as for improvements in the quality and efficiency of education spending (as discussed below).

This section focuses on the channels through which fiscal policy can affect the main determinants of growth. The literature has focused much attention on the impact of fiscal policy on short-term output fluctuations (its stabilization function), but less on its effects on the long-term growth rate. Studies of the latter effects have tended to focus more on the growth impact of the size of government, the overall tax burden, and individual tax and public expenditure instruments, than on comprehensive fiscal reform strategies.

### 1. Effects of Taxation on Growth

Taxation can have both favorable and adverse effects on growth. The former reflect the fact that taxation finances the provision of public goods that have a positive impact on physical or human capital accumulation, or on TFP. The latter arise from the distortions that taxes can entail for saving, investment, and work/leisure choices. Moreover, such distortions vary

across tax instruments as well as within each instrument depending on its specific design features.

Myles (2009) presents a comprehensive survey of the empirical literature that has analyzed the effects of the overall tax burden on growth, mainly through cross-country growth regressions that included various measures of aggregate average or marginal tax rates among the explanatory variables. He concludes that the empirical evidence is largely inconclusive, with some studies finding low but significant coefficients for the tax variables, and others finding these coefficients to be insignificant or not robust. This is likely to reflect, in addition to the difficulties plaguing growth regressions in general, the fact that the net balance of the positive and negative effects of taxation on growth can be expected to vary both across countries and over time.

A more promising line of analysis is one that focuses on the growth impact of individual tax instruments, and relatedly of (revenue neutral) changes in the structure of individual tax systems. A comprehensive discussion of these issues can be found in recent OECD work (Johansson et al., 2008; and OECD, 2010). Based on an extensive review of the relevant literature, as well as new empirical investigations, these studies point to the following main conclusions:

- The category of taxes least likely to affect growth adversely is that on immovable property, since these taxes do not significantly distort saving, investment, and work/leisure choices, and may even promote land utilization. However, their revenue potential is limited, given their administrative costs and political unpopularity. Moreover, such taxes are typically reserved for the financing of local governments.
- Next in the pro-growth ranking are general taxes on consumption (VAT or general sales taxes), since they do not affect the saving rate, although they may affect labor supply similarly to a proportional income tax. The empirical evidence of the latter effect is, however, scarce. Consumption taxes tend, however, to be regressive (since consumption tends to fall as a share of income as the latter goes up), entailing trade-offs between efficiency and equity objectives in the choice of tax structures.
- The growth impact of selective consumption taxes is likely to depend on the nature of the tax (e.g., whether it falls on goods complementary to leisure or work; or on goods with negative externalities, e.g., on health or the environment).
- Taxes on labor income (social security contributions, other payroll levies, and the portion of the personal income tax falling on wages) tend to affect adversely the demand for labor, and thus employment. They also affect the supply of labor through substitution and income effects that work in opposite directions (by increasing the value of leisure relative to work, on the one hand, and by requiring increased work effort to secure a desired net income, on the other). The net impact on the labor supply depends, of course, on the relative strength of the two effects. A recent OECD study notes that the impact of labor taxes on employment tends to be more pronounced for some categories of workers (e.g., lower and upper-income, and older workers) than for others (OECD, 2011). These taxes can also adversely affect growth to the extent that they promote labor informality, with attendant negative effects on labor productivity and income distribution (Pagés, 2010)
- A high degree of progressivity in personal income taxes can also adversely affect labor productivity, to the extent that it reduces individuals' incentives to invest in higher education to achieve larger future income streams.

- Taxes on personal capital income may reduce growth to the extent that the reduction in the after-tax return on savings adversely affects the savings rate (an effect on which empirical evidence is mixed). Moreover, a differential tax treatment of different types of capital incomes is likely to distort the allocation of savings, with potentially adverse effects on efficiency and growth. High capital gains taxes may reduce incentives to entrepreneurship and innovation, as well as the supply of venture capital. Double taxation of income from equity investments (under both the personal and corporate income tax) may also discourage entrepreneurship and skew the financing of investments towards debt, rather than equity, with potentially adverse effects on efficiency and even macroeconomic stability (de Mooij, 2011).
- Corporate income taxes are generally regarded as the most likely to adversely affect growth through their impact on corporate investment and on TFP. This perception is reflected in the trend to reduce corporate tax rates observed in many parts of the world in recent years. Empirical studies generally support this perception (see, e.g., Lee and Gordon, 2005). They also suggest that proliferation of special treatments (preferential rates for certain types of firms or geographical locations) are unlikely to significantly increase aggregate investment, and may adversely affect TFP by distorting resource allocation towards less efficient firms. In contrast, there is some empirical support for the effectiveness of targeted incentives to invest in R&D activities.

These findings point to the scope for enhancing growth through revenue-neutral tax reforms aimed at: (i) reducing the weight of labor, personal and corporate income taxes in favor of property and consumption taxes; (ii) broadening tax bases and eliminating tax preferences (with related reduction in both administration and taxpayer compliance costs); and (iii) moderating top marginal tax rates.

## 2. Effects of Public Expenditures on Growth

While changes in the overall level of government spending have an unambiguous (albeit quantitatively varying, depending on the composition of the change) impact on aggregate demand in the short run (assuming monetary accommodation), their longer-term effect on growth is hard to predict, as it depends crucially on the net effect of individual components of the change on the determinants of growth. It is thus not surprising that, as indicated above, empirical analyses have not found robust evidence on the growth impact of the size of government.

The literature has focused instead on the growth effects of specific categories of public expenditure, in particular on education, health, infrastructure, and subsidies to R&D, which a priori are most likely to affect the accumulation of human and physical capital, as well as TFP.

Models of the impact of education spending on growth fall into two main categories (Aghion, 2009). The first group (Lucas, 1990; and Mankiw, Romer and Weil, 1992) emphasizes human capital accumulation as the source of growth. In these models, the rate of growth depends on the rate of accumulation of human capital, not its stock, and therefore education can boost growth to the extent that it leads to an acceleration of such accumulation. Models of this type have been subject to critiques pointing to significant problems (robustness of coefficients, possible reverse causality) in their empirical tests. A

second group of models (in particular Nelson and Phelps, 1996; and Benhabib and Spiegel, 1994) sees human capital stock as instrumental in moving a country towards the technology frontier of the time, as well as innovating at the frontier. In these models education affects growth by augmenting the human capital stock.

Further refinements of this strand of models (e.g., Vandenbussche, Aghion, and Meghir, 2006; and Aghion, 2009) point to the fact that different types of education have different effects on growth, depending on a country's distance from the technology frontier. Specifically, in developing countries (which are typically farther from the frontier) a bigger "bang for the buck" in terms of growth impact can be obtained from spending on primary and secondary education that would improve those countries' ability to move closer to the frontier. In contrast, advanced countries should increase spending on tertiary education that would enhance their ability to move the frontier outward. It should be noted that this literature provides little guidance on the optimal distribution of education spending between the private and the public sector, and even less on the composition of public education spending (e.g., teachers vs. other inputs) or the measurement of efficiency of such spending.

As regards the growth impact of health spending, most of the literature has focused on the linkages between health indicators (in particular, child and adult mortality rates) and growth, and has found robust evidence of positive correlation between the two (López-Casasnovas, Rivera and Currais, 2005). Higher survival rates not only increase labor productivity directly, but also raise incentives to acquire higher skill and to save (Bloom and Canning, 2005; Lorentzen, McMillan and Wacziarg, 2005; and Jamison, Lau and Wang, 2005). Some studies for industrial countries, however, have also found evidence of reverse causality between growth and health, pointing to a likelihood of nonlinearities in the relation (i.e., improvements in health have a stronger growth payoff in the early stages of development; in later stages, the growth impact declines, but demand for health services increases with income).

The existence of a positive correlation between health and growth does not, however, automatically translate into evidence of a corresponding relation between public expenditure on health and growth. Specifically, it does not provide guidance on: the appropriate distribution of spending on health between the private and the public sector; the desirable balance between spending on health facilities (hospitals, clinics, medical equipment) and services (doctors, nurses, drugs) on the one hand, and infrastructure (e.g., roads, public transportation) that facilitate access to these services or reduce the need for them (e.g., improved sanitation), on the other; or between various types of medical care (although it may be argued a priori that basic preventive care is likely to be more cost-effective in terms of growth impact than high- technology curative care). These are complex issues that are likely to be affected by a range of country-specific economic (especially the level of development of the country), socio-political and institutional factors.

There is a vast literature on the linkages between infrastructure and growth (see Romp and de Haan, 2007; Estache and Fay, 2009; Del Bo, 2009; and Sutherland et al., 2009, for surveys

of this issue). This literature has identified a number of channels through which investment in infrastructure affects growth:

- As a direct input into the aggregate production function (albeit this is disputed by some authors);
- As reducing production costs, and therefore enhancing the productivity of private capital; and
- As facilitating access to health and education services, thereby increasing labor productivity (Agenor and Moreno Dodson, 2006).

Empirical analyses of these effects have been plagued by serious data deficiencies, especially in non-OECD countries (in particular the lack of appropriate measures of the stock of infrastructures), as well as by the various problems affecting growth regressions mentioned above. These analyses have utilized a number of techniques (discussed in detail in Romp and de Haan, 2007) to address these issues. The main conclusions from this literature can be briefly summarized as follows:

- There is substantial empirical support for a positive impact of investment in infrastructure on long-term growth, but the effect is not as strong as claimed in the early literature on the subject (e.g., Aschauer, 1989).
- There is also evidence of nonlinearities in the relation, partly reflecting the network nature of most infrastructures.
- Some evidence from cross-section studies points to diminishing returns to scale, with countries with smaller stocks of infrastructure exhibiting higher marginal returns than those with larger stocks (Demetriades and Mamounas, 2000).
- A number of studies have highlighted the importance of sound institutions (systems for selection, monitoring and evaluation for public investments and public-private partnerships; and appropriate regulatory frameworks for private investment) in determining the productivity of infrastructure investment (e.g., Sutherland, 2009).

### **3. Design of Growth-Enhancing Fiscal Reform Strategies**

The brief literature review above has highlighted a number of channels through which fiscal policy can affect long-term growth. Most of the studies reviewed analyze individual fiscal policy changes in isolation, i.e., abstracting from the use of additional budgetary resources in the case of tax increases and expenditure cuts, and from the nature of financing in the case of tax cuts and spending increases. Moreover, most studies (which are predominantly cross-country in nature) do not explore complementarities between policy changes; nor do they explain issues of timing, sequencing, administrative and institutional constraints, and possible complementarities and trade-offs with other policy objectives (e.g., income redistribution). These issues are, however, highly relevant to the design of sound country-specific fiscal reform strategies aimed at promoting sustainable higher growth. Therefore,



some of these issues are briefly discussed in what follows, with a view to motivating their consideration in country case studies, as appropriate.

**a. Ensuring consistency with macro-economic stability and long term-fiscal sustainability**

A careful analysis of the macro-economic implications of proposed fiscal reforms is important if the package entails changes in the overall budget balance. This analysis has both short and longer-term dimensions. In the short-run perspective, the assessment of possible financing constraints is essential for countries with already relatively high deficits and debt, or with a debt profile that makes them vulnerable to changes in market sentiment. Proposed reforms should also be examined for possible effects on aggregate demand or on relative prices that could lead to overheating, inflationary pressures or loss of competitiveness. These short-term dimensions are important, even in a longer-term growth-focused reform perspective, because of the abovementioned deleterious impact of macro-economic volatility on growth. In the longer-term perspective, the effects of a proposed fiscal reform program on fiscal sustainability should be analyzed, using well-developed debt sustainability analysis (DSA) techniques (see, e.g., IMF, 2011; and Celasun, Debrun and Ostry, 2006).

**b. Dealing with equity-efficiency trade-offs**

Especially in view of the high degrees of income inequality prevailing in most of Latin America and their adverse effects on growth, the distributional effects of proposed fiscal reforms should also be taken into account. A number of fiscal policy instruments can positively affect both growth and the income distribution. This is clearly the case with spending on basic education, preventive health care, and well-designed targeted transfer programs. It is also the case with some tax policy reforms, in particular a strengthening of property taxation, and with cuts in high payroll taxes (or social security contributions) that, by reducing incentives to labor market informality, improve not only efficiency but also social inclusion and, over the longer term, income distribution.

Some institutional changes can also have beneficial effects on both growth and vertical equity. These include:

- A strengthening of budget institutions (such as the adoption of structural fiscal rules and/or the creation of fiscal watchdogs) to promote macro-stability and prevent excessive volatility and crises that typically have a disproportionate effect on lower income groups;
- Increased fiscal transparency that reduces the scope for capture of the budget by powerful interest groups; and
- Improvements in the tax administration's capacity to control evasion by richer taxpayers.

However, it should be recognized that tax policy reforms frequently entail trade-offs between growth and income distribution objectives. This is, for instance, the case with shifts from income to consumption taxes, elimination of multiple rates under the VAT, reductions in the progressivity of personal income taxes, and/or substitution of a global with a dual



income tax, all reforms that have favorable effects on potential growth, but *ceteris paribus* tend to widen income inequality.

The extent of growth-vertical equity trade-offs involved in specific fiscal reforms can be expected to vary significantly across countries, depending on a range of economic and institutional factors that should be carefully analyzed on a case-by-case basis. Importantly, such analyses should focus on the growth and equity impact of the total proposed reform program. A tax policy change that adversely affects income distribution may still be desirable if it generates additional resources (including through its growth effects) that can be spent on equity-enhancing programs.

### **c. Timing and sequencing issues**

As indicated in preceding sections, growth-focused fiscal reforms often work by affecting economic agents' incentives to save, invest, acquire additional skills, or innovate. As such, their effectiveness is likely to be significantly affected by these agents' perception of the durability of the reforms, and therefore of economic policymakers' degree of commitment to them. In this respect, reforms that are enacted early in the term of a government, or that command support by a relatively broad political base are likely to be more effective. For the same reasons, a strong legal basis for the reforms is likely to enhance their effectiveness. Reforms undertaken under the pressure of exogenous shocks (e.g., a balance of payments crisis) may be less effective until a sufficiently long track record of implementation is developed.

Attention also needs to be paid to sequencing issues in the design of reforms. In general, reforms with longer lags (either in implementation or in impact) should be implemented first, especially if they are of an institutional/administrative nature, and are likely to affect the effectiveness of related policy changes. However, political economy considerations may argue in some cases for giving priority to reforms with quick "wins" in order to gain broad social acceptance of the overall reform effort. The appropriate strategy in this respect can only be decided on a case-by-case basis, after careful consideration of all the relevant aspects.

### **d. Addressing institutional and administrative constraints**

The effectiveness of growth-focused policy reforms can be significantly undermined by institutional and administrative constraints. For example, a shift towards property taxation is unlikely to work in the absence of a reasonably well developed and regularly updated property cadastre. More generally, the design of tax policy reforms should take carefully into account the capacity of the country's tax administration to implement the proposed changes. On the expenditure side, the growth effectiveness of investment in infrastructure is significantly affected by the quality of project selection and implementation systems. Similarly, the efficiency of public health spending is likely to be enhanced by increased transparency in budgeting, procurement and accounting systems.

In assessing the growth impact of proposed fiscal reform programs, attention should be paid to such constraints, if they are severe enough to risk undermining the implementation of the program. A careful analysis of these constraints may advise the adoption of second-best

reform strategies, or delaying some reforms until minimum administrative requirements for their successful implementation are met.

The growing decentralization of expenditure responsibilities in Latin America creates additional challenges in this respect. Expenditures of state and local governments now account for large shares of expenditures on education, health, and infrastructure that are likely to feature prominently in growth-oriented fiscal reform strategies. Strengthening incentives and institutional capacities of sub-national governments to design and implement efficient spending programs, as well as their accountability for results (by increased transparency requirements, and appropriate changes in revenue assignments and inter-governmental transfer systems) can be an important ingredient of growth-enhancing fiscal reform. In contrast, failure to take into account political, institutional and administrative capacity constraints at the sub-national level can substantially undermine the effectiveness of such reforms.

#### **e. Dealing with the political economy of reforms**

There is a vast and growing literature dealing with the political economy of reforms (e.g., Alesina and Perotti, 1994; Tommasi, 1998; Lora, editor, 2006; and Hallerberg, Scartascini and Stein, editors, 2009, to cite just a few). These contributions have highlighted the importance of political institutions and political power balances in shaping the outcome of fiscal and other reform efforts.

Growth-oriented fiscal reforms frequently entail horizontal as well as vertical redistribution. As such, they typically create winners and losers, even though overall welfare is enhanced by a sustained increase in the growth rate. Therefore, assessments of the expected impact of proposed reforms should include an analysis of the political power of groups likely to be affected by the reforms; of the foreseeable roles of the executive and legislative branches of government in shaping them; and of the scope for blocking or enabling coalitions, as well as for possible compensating strategies.

### **III. Objectives and Requirements of the Project**

The IDB is calling for policy-oriented research proposals that aim to shed light on the effects of selected fiscal policies on growth in Latin America and to recommend feasible and effective growth-enhancing fiscal reforms.

The proposals may cover one or more countries of the region and they should clearly justify the choice of fiscal policies to be assessed. That choice may be motivated by identification of those policies in previous analytical work as key roadblocks to growth, and/or by their central role in the current policy debate in the country/countries under consideration.

Specifically, the proposals should outline in detail:

- a. The methodology utilized to identify one or more major obstacles to a sustained increase in the growth rate in the country/countries to be analyzed in the study. This may be based on previous analytical work by the proposal's authors or by others.

- b. The analytical framework(s) to be utilized in the assessment of the growth impact of proposed reforms of tax or expenditure policies, or of fiscal institutions (such as fiscal rules, intergovernmental fiscal relations, stabilization funds for non-renewable commodity producers) aimed at addressing those obstacles.

The proposals should also include a preliminary identification and brief discussion of:

- a. Relevant macro-fiscal and distributional implications of the proposed reforms;
- b. Political economy factors likely to affect the design and implementation of the reforms;
- c. The main foreseeable institutional and administrative constraints on their implementation;
- d. The extent of fiscal decentralization in the country, and whether it could pose substantial impediments to the implementation of the reforms; and
- e. The main relevant timing and sequencing issues.

The proposals should discuss data requirements for carrying out the proposed analyses and verify the availability of those data.

#### IV. Selection Criteria and Proposal Submission

**Only research institutions** may present proposals for this project. The final number of proposals accepted will depend on the quality and the proposed budget of the proposals received. Each approved research proposal will receive financial support of **up to US\$30,000** from the IDB. Proposed budgets will be evaluated taking into account the scope of work proposed. Projects that seek extra funding to complement financing by other institutions are strongly encouraged.

The following information should be provided with the submission of a proposal:

- Details on the proposed analytical framework and data requirements, as outlined in the previous section; and
- A budget indicating the timetable and resource requirements for the study

**The proposal and corresponding budget *must* be sent in separate files.** The budget proposed should disaggregate items financed by the IDB contribution and those financed by the research institution or by the team of individual researchers. The budget should distinguish among amounts assigned to professional honoraria, “overhead” and other major categories of research expenditures.

- The name and *Curricula vitae* (three pages maximum per researcher) of the research leader and other researchers involved. The research team should demonstrate its ability to meet the objectives of the project, including relevant experience. Please note that for proposals submitted by institutions, subsequent substitutions for researchers originally specified in the proposal may be made with prior approval

from the project coordinators, but the research leader (of each subject) should lead the entire project until its completion.

- Institutions must provide the name and contact information of their legal representative, with authority to sign contracts with the IDB, if selected to conduct the study.
- **Note: ALL proposals and research papers must be submitted in English.**

## V. Coordination and Schedule

The project will be coordinated by Gustavo García ([ggarcia@iadb.org](mailto:ggarcia@iadb.org)), Principal Fiscal Economist, ICF/FMM and Eduardo Lora, Chief of the Research Department of the IDB (VPS/RES). Teresa Ter-Minassian, former Director of the Fiscal Affairs Department of the International Monetary Fund, will be the main advisor of the project.

The tentative schedule of activities is as follows:

- **December 20, 2011:** Due date for **receiving proposals**.
- **January, 27, 2011:** **Announcement of selected research proposals**.
- **February 6-7, 2012:** **First Discussion Seminar** in Washington, D.C., to discuss proposed methodologies and data requirements for the selected proposals.
- **April 23, 2012:** Due date for receiving a **first draft** of research papers.
- **May 28-29, 2012:** **Second Discussion Seminar** to discuss first drafts of research papers in Washington, D.C.
- **July 13, 2012:** Due date for receiving a **second draft** of research papers.
- **August 31, 2012:** Deadline for a **final version of the research papers**, including a summary that discusses policy lessons and delivery of the datasets utilized by the study to the IDB.
- **September 17, 2012:** Presentation of the papers in an **international seminar in Washington, D.C.**

## VI. Financial Contribution

The IDB will contribute up to **US\$30,000** for each study, depending on the scope of the work proposed.

The payment schedule is as follows:

- 35 percent within 30 days of signing the formal agreement between the IDB and the respective research center.
- 15 percent within 30 days of approval of the first draft of the research paper.

- 15 percent within 30 days of approval of the second draft of the research paper.
- 20 percent upon approval by the Bank of the final research paper and delivery of the datasets utilized by the study to the IDB.
- 15 percent upon the presentation of the country case in the international seminar in Washington, D.C.

## Appendix I

### Determinants of growth

#### a. Alternative theories of growth

The neoclassical growth theory, first set out in the seminal work of Solow (1956) and Swan (1956) and based on the assumptions of constant returns to scale, diminishing returns to investment, and exogenous technological progress, predicts that the growth rate of individual economies would tend, in the absence of favorable shocks in technological progress, to diminish over time as economies approach their steady-state levels of output, determined by their rates of savings and population growth. The theory also predicts that, out of steady-state, poorer economies would tend to grow faster than rich ones, given diminishing returns to capital. In such a framework, policies (including fiscal policies) cannot permanently affect growth, since they cannot change the rates of savings and technological progress (assumed to be exogenously given).

The restrictive assumptions of the neoclassical growth model have been progressively relaxed in the literature since the 1980s, with the Ramsey-Koopmans model endogenizing savings behavior, and a number of authors (Romer, 1986 and 1990; Lucas, 1990; and Aghion and Howitt, 1998, among others) modeling the impact of human capital accumulation and R&D expenditures on growth. The main insight of this so-called endogenous growth theory is the recognition of positive externalities in human capital accumulation and in R&D that open a positive wedge between social and private rates of return on these activities, thereby creating a case for government action in both areas. In this expanded growth framework, government policies, including fiscal policies, can affect the long-term growth rate by changing economic agents' incentives to save, invest, accumulate human capital and/or innovate.

Further extensions of the endogenous growth theory have focused on the impact on growth of a number of other factors:

- **Volatility**

While the stance of macro-economic (fiscal, financial, exchange rate) policies obviously affects the rate of output growth in the short run, attempts at modeling and verifying empirically the effects of these policies on the long-term growth rate have been in general unsuccessful (Fatas and Mihov, 2009). One channel of influence of macro policies on long-term growth is, however, economic volatility. A number of contributions to the literature have emphasized the deleterious impact of volatility on an economy's growth potential, especially in developing countries (see, e.g., Gavin and others, 1996; Hnatkovska and Loayza,

2005; Aghion et al., 2005; and Koren and Tenreyro, 2006). Frequent and sharp short-term fluctuations in output, whether induced by exogenous shocks or by domestic policies, can have lasting effects on the rate of physical investment, including in infrastructure and R&D, and on human capital accumulation through labor market hysteresis and reduced access to health services and education for vulnerable income groups, especially when significant imperfections are present in credit markets. Fatas and Mihov (2009) find robust empirical evidence of a negative impact of fiscal policy volatility on growth for a sample of 95 countries over the period 1970-2000.

- **Openness to international trade and FDI**

Proponents of this channel (e.g., Srinivasan and Bhagwati, 1980; Lucas, 1990; Grossman and Helpmann, 1991; and Rivera-Batiz and Romer, 1991) see international integration as increasing physical capital through FDI, human capital through knowledge transfer, and total factor productivity through technology transfer, scale effects, and efficiency-enhancing competition. Others (e.g., Rodríguez and Rodrik, 2000; and Rodrik, Subramanian and Trebbi, 2002) see trade as a proxy for other important variables, in particular the state of institutions, that influence countries' ability to absorb positive spillovers from trade.

- **Quality of institutions**

A growing strand of literature (e.g., North, 1990; Rodrik and Subramanian, 2003; and Acemoglu, Johnson, and Robinson, 2004) has focused on the role of economic institutions in growth and development, arguing that market-creating institutions, namely those that protect property rights and ensure contract enforcement, are essential to create the right incentives for the accumulation of physical and human capital, entrepreneurial activity and technological innovation. Some of this literature (e.g., Fatas and Mihov, 2009) also focuses on the role of institutions in avoiding policy volatility that is detrimental to sustained growth. Some (e.g., Acemoglu and Robinson, 2009; and Lora, 2006) discuss how political factors shape political institutions (e.g., electoral systems and legal framework) that in turn affect both economic policies and institutions.

- **Income inequality**

A related strand of literature has emerged in recent years, focusing on the adverse impact of high degrees of income inequality on growth. This literature (see Birdsall, 2007 for a comprehensive summary) identifies a number of channels through which high inequality can stifle growth:

- With imperfect capital markets, impediments for the majority of the population to invest adequately in human (Birdsall and Londoño, 1998) and physical (Benabou, 2002) capital;
- Increased socio-political instability, frequently constraining governments' ability to conduct sustainable macro-economic policies and respond appropriately to external shocks (see, e.g., Aghion, 1999; Alesina and Perotti, 1996; and Rodrik, 1999) ;
- Increased opportunities for rent-seeking and corruption by the rich, distorting efficient public and private resource allocation (Easterly, 1993 and 2001, highlights

the negative impact of the lack of a sizable middle class on the quality of a country's institutions and its growth performance);

- Lower social capital (François and Zbojnic, 2005; Algan and Cahuc, 2010; Tabellini, 2010); and
- Higher crime rates, with related adverse effects on business climate and investment (see, e.g., Fajnzylber, Lederman, and Loayza, 2002).

A more recent IMF study (Berg and Ostry, 2011) analyzes the duration of growth spells and finds it to be positively and robustly associated with lower income inequality.

### **b. Some empirical evidence**

Theoretical contributions to the growth literature in recent decades have spawned a vast array of empirical studies aiming to identify from data the various factors affecting growth. A main strand of this literature consists of growth regressions, building on the seminal work of Barro (1991) who, using a cross-section of 98 countries for the period 1960-85, regressed GDP growth rates on a number of variables, including the ratio of investment to GDP, an estimate of human capital, the starting level of GDP, the size of government, and various socio-political indicators. He found growth rates to be positively related to human capital and political stability, and negatively related to the size of government and to the initial level of GDP (a fact that appeared to support the convergence hypothesis of the exogenous growth theory). Subsequent contributions, however, cast significant doubts on the robustness of Barro's findings, pointing to issues of multicollinearity among explanatory variables, quality and comparability of national data, non-random sampling, the averaging of data in cross-section analyses, etc. (Levine and Renelt, 1992; Levine and Zervos, 1993). Analyses based on the extreme bounds technique,<sup>1</sup> first introduced by Leamer (1983) showed the coefficients of various explanatory variables in Barro-type growth regressions to be fragile (i.e., to change sign or become insignificant when additional regressors were introduced in the equations). Additional studies (e.g., Sala-i-Martin, 1995 and 2004; and Folster and Henrekson, 2006) have made various attempts to deal with the econometric problems of cross-country growth regressions, but it is fair to say that results from analyses of this type remain subject to significant controversy.

Reflecting the disillusion with these approaches, focus has shifted in recent years on growth accounting analyses for individual or a range of countries. These analyses attempt to quantify the relative contributions of capital, labor, and total factor productivity (TFP) to growth. Growth accounting models have been extensively used in the literature to explain differences in development patterns among regions, in particular between East Asia and industrial Western countries (see, e.g., Kim and Lau, 1996). These studies have confirmed significant differences across countries in the relative contributions of labor, capital accumulation and TFP. A number of studies have also focused on economic (labor force skills, speed of technological innovation, exposure to external shocks) and institutional (trade regime, political stability) factors likely to affect TFP. They generally lend support to the endogenous growth theory, thereby highlighting channels through which policies can

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<sup>1</sup> For a detailed description of the extreme bounds technique, see Myles (2009).



affect growth performances across countries and over time. However, significant econometric problems (measurement errors, omitted variables and reverse causality) persist in many of these studies, suggesting that caution should be exercised in drawing strong inferences from their results.

## Bibliography

- Acemoglu, D., Johnson, S. and Robinson, J.A., 2004. "Institutions as the Fundamental Cause of Long-Run Growth." National Bureau of Economic Research Working Paper 10481:1–[109]. Cambridge, Massachusetts.
- Acemoglu, D. and Robinson, J.A., 2009. "The Role of Institutions in Growth and Development." Commission on Growth and Development (CGD), Working Paper No. 10.
- Agenor, P-R. and Moreno-Dodson, B., 2006: "Public Infrastructure and Growth: New Channels and Policy Implications." World Bank Policy Research Paper No. 4064.
- Aghion, P. and Howitt, P., 1998. "Endogenous Growth Theory." MIT University Press, Cambridge, Massachusetts.
- Aghion, Philippe, Eve Caroli, and Cecilia García-Peñalosa. 1999. "Inequality and Economic Growth: The Perspective of the New Growth Theories." *Journal of Economic Literature* No. 37(4).
- Aghion, P., Angeletos, G., Banerjee, A. and Manova, K., 2005. "Volatility and Growth: Credit Constraints and Productivity Enhancing Investment." *NBER Working Paper 11349*, National Bureau for Economic Research, Cambridge, MA.
- Aghion, P. 2009. "Growth and Education." *CGD Working Paper No. 56*
- Agosin, M., Fernández-Arias, E. and Jaramillo, F. (eds.). 2009. *Growing Pains: Binding Constraints to Productive Investment in Latin America*. IADB, Washington, D.C.
- Alesina, A. and Perotti, R., 1994. "The Political Economy of Growth: A Critical Survey of the Recent Literature." *The World Bank Economic Review* 8(3).
- Alesina, A and Perotti, R., 1996. "Income Distribution, Political Instability, and Investment." *European Economic Review* No. 40(6).
- Alesina, A., Hausmann, R., Hommes, R. and Stein, E. 1996. "Budget Institutions and Fiscal Performance in Latin America." IDB Research Department Working Paper 394.
- Algan, Y. and Cahuc, P. 2010. "Inherited Trust and Growth." *American Economic Review*
- Aschauer, D.A., 1989. "Is Public Expenditure Productive?" *Journal of Monetary Economics* No.23
- Barnett, S. and Ossowski, R., 2003. "Operational Aspects of Fiscal Policy in Oil-Producing Countries." In: Davis, J.M., Ossowski, R. and Fedelino, A. (eds.) *Fiscal Policy Formulation and Implementation in Oil-Producing Countries* pp.45-81 (Washington, DC: International Monetary Fund)
- Barro, R. J., 1990. "Government Spending in a Simple Model of Endogenous Growth." *Journal of Political Economy* 98(5): 103–25.

- Barro, R.J., 1991. 'Economic growth in a cross section of countries', *Quarterly Journal of Economics*, 106:407–43.
- Barro, R.J., 1997. *Determinants of Economic Growth: a cross-country empirical study*, MIT Press, Cambridge
- Benhabib and Spiegel, 1994. "The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-Country Data." *Journal of Monetary Economics* 34
- Benabou, R., 1996. "Inequality and Growth", *NBER Macroeconomics Annual*, 11, pp.11–74.
- Benabou, R. (2002), "Tax and Education Policy in a Heterogeneous-Agent Economy: What Levels of Redistribution Maximize Growth and efficiency?", *Econometrica*, 70, pp.481–517.
- Berg, A.G. and Ostry, J., 2011. "Inequality and Unsustainable Growth: Two Sides of the Same Coin?" IMF Staff Discussion Note 11/08.
- Birdsall, N., 2007. "Income Distribution: Effects on Growth and Development." *Center for Global Development, Working Paper No. 118*, Washington, D.C.
- Birdsall, N., de la Torre, A. and Menezes, R., 2008. "*Fair Growth: Economic Policies for Latin America's Poor and Middle Income Majority.*" Center for Global Development, and Inter-American Dialogue, Washington, D.C.
- Birdsall, N. and Londoño, J.L. 1998. "No Trade-off: Efficient Growth via More Equal Human Capital Accumulation." In Birdsall, Graham and Sabot, eds.: *Beyond Trade-offs: Market Reform and Equitable Growth in Latin America*, IDB, Washington, D.C.
- Bloom, David E., and David Canning, 2005: "Schooling, Health, and Economic Growth: Reconciling the Micro and Macro Evidence," unpublished, Harvard School of Public Health
- Cassou, S.P. and Lansing K.J., 2004. "Growth Effects of Shifting from a Graduated-Rate Tax System to a Flat Tax." *Economic Inquiry* No. 42.
- Commission on Growth and Development. 2009. "The Growth Report: Strategies for Sustained Growth and Inclusive Development." The International Bank for Reconstruction and Development / The World Bank. Washington, D.C.
- Daude, C., Melguizo, A. and Neut, A. 2010. "Fiscal Policy in Latin America: Counter-cyclical and Sustainable at Last?", OECD Development Center Working Paper no. 291, Paris, France
- de Mooij, R.A., 2011. "Tax Biases to Debt Finance: Assessing the Problem, Finding Solutions", *IMF Staff Discussion Note 11/11*
- Del Bo, C., 2009. "Recent Advances in Public Investment, Fiscal Policy and Growth." *Universita' degli Studi di Milano, Working Paper No. 25*, Milan, Italy.
- Celasun, O., Debrun, X. and Ostry, J., 2006. "Primary Surplus Behavior and Risks to Fiscal Sustainability in Emerging Market Countries: A 'Fan-Chart' Approach." IMF Working Paper, 06/67.

Demetriades, P.O., and Mamouneas, T.P. 2000. "Inter-temporal Output and Employment Effects of Public Infrastructure Capital: Evidence from 12 OECD Economies." *Economic Journal*, No. 110.

Easterly, W. and Rebelo, S. 1993. "Fiscal Policy and Economic Growth: an Empirical Investigation." *Journal of Monetary Economics*, No. 32

Easterly, W. 2001. "The Middle Class Consensus and Economic Development." *Journal of Economic Growth* 6(4).

Estache, A. and Fay, M. "Current Debates on Infrastructure Policy." *Commission on Growth and Development*, Working Paper No. 49.

Fajnzylber, P., Lederman, D. and Loayza, N. 2002. "Inequality and Violent Crime." *Journal of Law and Economics* 45.

Fatas, A. and Mihov, I., 2009. "Macroeconomic Policy: Does it Matter for Growth? The Role of Volatility." *CGD Working Paper* No. 48.

Fölster, S. and Henrekson, M., 2006. "Growth Effects of Government Expenditure and Taxation in Rich Countries: A Reply." *European Economic Review*, No. 50.

Ffrench-Davis, R., 2009. "Growth Challenges for Latin America: What Has Happened, Why, and How to Reform the Reforms." *Commission on Growth and Development Working Paper* No. 51.

Francois, P. and Zbojnick, J., 2005. "Trust, Social Capital and Economic Development." *Journal of the European Economic Association*, 3(1).

Grossman, G.M. and Helpman, E., 1991. "*Innovation and Growth in the Global Economy*", MIT Press, Cambridge, Massachusetts.

Hallerberg, M., Scartascini, C., and Stein, E. (eds.2009. *Who Decides the Budget: A Political Analysis of the Budget Process in Latin America*. IDB and Harvard University.

Hausmann, R., Rodrik, D. and Velasco A., 2004. "Growth Diagnostics." Harvard University, Cambridge, Massachusetts.

Hnatovska, V., and Loayza, N., 2005. "Volatility and Growth." In: J. Aizenman and B. Pinto, eds. *Managing Economic Volatility and Crises: A Practitioner's Guide*. Cambridge University Press, Cambridge, UK.

IMF. 2011. "Modernizing the Framework for Fiscal Policy and Public Debt Sustainability Analysis", Washington, DC, [www.imf.org](http://www.imf.org)

Jamison, D. T., Lau, L.J. and Wang, J., 2005. "Health's Contribution to Economic Growth in an Environment of Partially Endogenous Technical Progress." In *Health and Economic Growth: Findings and Policy Implications*, ed. by G. López-Casasnovas, B. Rivera and L. Currais, MIT Press (Boston, Mass.: 2005).

- Johansson, A. et al. 2008. "Taxation and Economic Growth", *OECD Economics Department Working Papers* No. 620, OECD Publishing.
- Kim, J.-I., and Lau, L.L., 1996. "The Sources of Asian Pacific Economic Growth." *Canadian Journal of Economics*, No. 29.
- Kohli, N., Loser, C. and Sood, A., 2010. *Latin America, 2040: Breaking Away from Complacency: An Agenda for Resurgence*. SAGE Publications, London, UK
- Koren, Miklos, and Silvana Tenreyro, 2005. "Volatility and Development." *Quarterly Journal of Economics*, No. 122(1).
- Leamer, E.E.. 1983: "Let's Take the Con Out of Econometrics." *American Economic Review*, No. 73.
- Lee, Y. and R. Gordon. 2005. "Tax Structure and Economic Growth." *Journal of Public Economics*, No. 89.
- Levine, R. and Renelt, D. 1992. "A Sensitivity Analysis of Cross-Country Growth Models." *American Economic Review*, No.82.
- Levine, R. and Zervos, S. J. 1993. "What We Have Learned about Policy and Growth from Cross-Country Regressions?" *American Economic Review*, No. 83.
- Loayza, N. and Soto R., 2002. "The Sources of Economic Growth: An Overview." In: N. Loayza and R. Soto, editors. *Economic Growth: Sources, Trends, and Cycles*, Santiago: Central Bank of Chile.
- López-Calva, L. F. and Lustig, N., eds., 2010. *Declining Inequality in Latin America. A Decade of Progress?* UNDP and Brookings Institution Press, Washington, D.C.
- López-Casasnovas, G., Rivera, B. and Currais, L., editors. 2005. *Health and Economic Growth: Findings and Policy Implications*. MIT Press, Cambridge, Mass.
- Lora, E. (ed.), 2006. *The Politics of Policies*. IDB, Washington, D.C.
- Lorentzen, P., McMillan J., and Wacziarg R, 2005. "Death and Development." *Working Paper No. 11620, National Bureau of Economic Research*
- Kong, T., 2007. "A Selective Review of Recent Developments in the Economic Growth Literature." *Journal of Economic Surveys*.
- Lucas, R.E. 1990. "Supply-Side Economics: An Analytical Review." *Oxford Economic Papers* No. 42.
- Mankiw, N.G., Romer, D. and Weil D., 1992 "A Contribution to the Empirics of Economic Growth." *Quarterly Journal of Economics*, No. 107.
- Myles, G. D., 2009. "Economic Growth and the Role of Taxation-Theory." *OECD Economics Department Working Papers*, No. 713

- Myles, G. D., 2009. "Economic Growth and the Role of Taxation - Aggregate Data", *OECD Economics Department Working Papers*, No. 714.
- Nelson, R., and Phelps, E., 1966. "Investment in Humans, Technological Diffusion, and Economic Growth." *American Economic Review* No. 77.
- North, D.C., 1990. *Institutions, Institutional Change, and Economic Performance*, Cambridge University Press, Cambridge and New York.
- OECD, 2010. *Tax Policy Reform and Economic Growth*. OECD Publishing, Paris, France
- OECD, 2011. *Taxation and Employment*. OECD Publishing, Paris, France.
- Pagés, C., ed., 2010. *The Age of Productivity*. IDB, Palgrave Macmillan.
- Perry, G., Servén, L. and Suescun, R. 2008. *Fiscal Policy, Stabilization and Growth*. Washington, DC, The World Bank
- Putnam, R.D., 1993. "The Prosperous Community: Social Capital and Public Life." *The American Prospect*, No. 13.
- Putnam, R.D., 2001. "Social Capital: Measurement and Consequences", *Canadian Journal of Policy Research*.
- Rivera-Batiz, L., and Romer, P.M., 1991: 'Economic integration and endogenous growth', *Quarterly Journal of Economics*, No. 56
- Rodríguez, F., and Rodrik, D. 2000. "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross National Evidence." *NBER Macroeconomics Annual*.
- Rodrik, D., 1999 "Where Did All the Growth Go? External Shocks, Social Conflict, and Growth Collapses." *Journal of Economic Growth* 4(4).
- Rodrik, D., and Subramanian, A., 2003. "The Primacy of Institutions (and What This Does and Does Not Mean)." *Finance and Development* 40(2).
- Rodrik, D., Subramanian, A. and Trebbi, F., 2002. "Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development." *NBER Working Paper 9305*. National Bureau of Economic Research, Cambridge, Massachusetts.
- Rojas Suárez, L. (ed.), 2009. *Growing Pains in Latin America*. Center for Global Development, Washington, D.C.
- Romer, P. M., 1986. "Increasing Returns and Long Run Growth." *Journal of Political Economy* No. 94
- Romer, P. M., 1990. "Endogenous Technological Change." *Journal of Political Economy*, No.98
- Romp, W., and De Haan J. 2007. "Public Capital and Economic Growth: A Critical Survey." *Perspektiven der Wirtschaftspolitik*, Vol. 8

Sala-i-Martin, X., 1994. "Cross-Sectional Regression and the Empirics of Economic Growth." *European Economic Review* No. 38

Sala-i-Martin, X., Doppelhofer, G, and Miller, R.I., 2004. "Determinants of Long-Term Growth: A Bayesian Averaging of Classical Estimates (BACE) Approach." *American Economic Review*, No. 94

Solow, R.M., 1956. "A Contribution to the Theory of Economic Growth." *Quarterly Journal of Economics*, No. 70

Srinivasan, T.N. and Bhagwati, J. 1980. "Trade and Welfare in a Steady State." In: J.S. Chipman and C.P. Kindleberger (eds), *Flexible Exchange Rates and the Balance of Payments: Essays in Memory of Egon Sohmen*. Amsterdam, The Netherlands: North Holland, Amsterdam.

Sutherland, D. and et al. 2009: "Infrastructure Investment: Links to Growth and the Role of Public Policies." OECD Economics Department Working Papers No. 686, OECD Publishing

Swan, T. 1956. "Economic Growth and Capital Accumulation." *Economic Record* No. 32.

Tabellini, G., 2010: "Culture and Institutions: Economic Development in the Regions of Europe" *CEPR Discussion Papers* No. 6589, C.E.P.R.

Tommasi, M. 1998. "Instituciones y Resultados Fiscales." *Desarrollo Económico* 38 (149).

Vandenbussche, J., Aghion, P. and Meghir, C., 2006. "Growth, Distance to Frontier, and Composition of Human Capital." *Journal of Economic Growth* No. 11

Zettelmeyer, J., 2006: "Growth and Reforms in Latin America: A Survey of Facts and Arguments." *IMF Working Papers* No. 06/210.