Policy Issues

National Competitiveness in Comparative Perspective: Evidence from Latin America

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ABSTRACT

The term *competitiveness* is widely applied as a catch-all for investor-friendly policies and institutions. This article argues that sloppy applications of the term ignore the possibilities of policy tradeoffs and varieties of institutional choices. Popular conceptualizations of the term describe three discernible clusters of economic policies and institutions. One cluster captures openness to international trade; a second gauges regulatory impediments to private sector competition; a third refers to public sector investments in human capital, security, and infrastructure. This essay develops three empirical indexes to operationalize these clusters and shows that these concepts are not only theoretically but also empirically distinct. In particular, the correlation between these measures is not especially high in a sample of Latin American countries. The larger economies in the region tend to be more competitive on the regulatory and public goods dimensions but fall well behind smaller economies in terms of external competitiveness, broadly conceived.

The purpose of this article is to clarify the numerous sources of national competitiveness identified in the literature and referred to in public discourse with increasing frequency.[1] We argue that applications of competitiveness have developed around at least three discernible conceptual clusters. We develop three unique indices to operationalize these three clusters and show that these concepts are not only theoretically but also empirically distinct. Our analysis of Latin American countries along three dimensions of competitiveness illustrates how economic conditions lead to policy tradeoffs and varieties of institutional configurations. In particular, we show that the larger economies in the region are the most competitive on the regulatory dimension but fall well behind smaller economies in terms of external competitiveness, broadly conceived. Furthermore, resource constraints in poorer countries appear to weaken commitments to public investment.

The most widely referenced research on the competitiveness of nations is the annual *Global Competitiveness Report*, produced by the World Economic Forum (WEF). The WEF report examines "the many factors enabling national economies to achieve sustained growth and long-term prosperity" (Schwab 2009, 3). The basis of comparison in the report is the country rankings along the global competitiveness index (GCI), which measures microeconomic and macroeconomic foundations of national competitiveness, defined as "the set of institutions, policies, and factors that determine the level of prosperity of a country" (Schwab 2009, 4). The GCI incorporates a host of factors that influence static levels of income, as well as dynamic growth potential.

Although the rankings of national competitiveness produced by the WEF are generally well regarded (particularly in policy-oriented circles and the business media) and are credited with recognizing that microeconomic factors are important for economic development, the WEF measures have encountered criticism on theoretical and empirical grounds. In particular, Lall (2001) argues that the definitions of competitiveness are too broad and that the empirical proxies incorporate too many variables. In an influential critique, Krugman (1994) questions the usefulness of the concept of national competitiveness as a comparative inquiry, noting that the economic welfare of a nation is determined by its productivity, rather than as the outcome of some zero-sum competition among countries battling to attract private investors.

With these critiques in mind, we argue that broad conceptualizations of national competitiveness and the rankings that accompany them hide more than they reveal. Indeed, this analysis points to the danger of viewing competitiveness as a one-dimensional concept, since doing so obscures the tradeoffs that confront policymakers. These tradeoffs are particularly apparent in poorer countries, where leaders are constrained by weak institutions, inefficient methods of revenue collection, and the influence of powerful international actors. A finer-grained analysis is required to capture these public policy tradeoffs.

Building on the insights of Porter (1990), who argues that competitive nations provide an institutional environment conducive to growth, our study focuses its inquiry on the three discrete channels through which governments influence private sector productivity. External competitiveness captures openness to the flow of goods and services across borders. We use data on tariffs and nontariff barriers to measure this concept. Regulatory competitiveness refers to the attractiveness of the domestic business environment and the degree to which regulatory policy inhibits the efficiency of the market. We rely on several independent measures of the strength of regulatory institutions to derive our index of regulatory competitiveness. Public investment competitiveness refers to the positive investments that governments can make to

increase private sector productivity. Our index of public investment competitiveness includes investments in infrastructure, education, the judiciary, and law enforcement.

We note that the exercise of discriminating among economic policies requires a degree of normative judgment and risks some conceptual overlap. We do our best to present a positive analysis by focusing on the laws and regulations that merit strong academic and policy consensus as important contributors to productivity. Similarly, we avoid controversial measures, such as capital account and labor market liberalization, which are often subject to ideological biases. With regard to conceptual overlap, we recognize that no taxonomy is perfect, but note our attempt to avoid arbitrariness in our proposed divisions by mirroring the time-tested theoretical subfields of economics (i.e., international, microeconomics, and public economics). Similarly, we recognize that our selections of measures for each policy cluster are necessarily partial and incomplete (e.g., regulatory competitiveness can be immensely complex in each country's institutional setting), but are consistent with common practice.

We turn to theory to identify the three clusters of policies and institutions associated with competitiveness. We then introduce our three empirical proxies for competitiveness, followed by a comparison of Latin American countries according to these indicators.

The Multiple Sources of National Competitiveness

Competitive countries are those that pursue policies associated with improved productivity. Holding population constant, productivity goes up if the value of goods and services increases, or if those goods and services are produced more efficiently. We highlight the policies thought to increase a country's productivity, and in particular, the important determinants of investment and efficient production.

Governments positively influence their country's productivity by pursuing a set of laws, institutions, and regulations that promote investment and improve productive efficiency. Economists argue about which of these institutional rules are most fundamental, but there is widespread agreement that productivity improves through openness to external and domestic sources of competition, the development of efficient and deep financial markets, and the enforcement of property rights. More recent research highlights the importance of public investments in physical infrastructure and in human capital. It is also well established that productivity increases require a firm and transparent rule of law, including a basic level of personal security. Three main clusters of policies and institutions related to competitiveness emerge: external, regulatory, and public investment.

External Competitiveness

The first cluster captures a country's openness to the flow of goods, services, and people across its border. Under this conceptualization, which we refer to as external competitiveness, the elimination of government regulatory distortions to free trade implies greater competitiveness. The reason is that liberalization opens the domestic economy to international sources of competition, which provides incentives for specialization and the efficient allocation of resources.

A long line of economic theory studies the links between trade openness and productivity. The beneficial static effects of trade on competitiveness are well established. These arguments date back to Adam Smith, who argued that trade would lead to a more efficient allocation of resources, as countries would specialize in the production of goods and services according to their comparative advantage. While the dynamic effects of trade openness on national competitiveness and economic growth are the subject of greater debate, influential studies argue that trade openness will improve growth prospects through one of several channels, including the development of human capital (Eicher 1999; Lucas 1988), technological spillovers (Eicher 1999; Young 1991), increased efficiency through scale economies (Bhagwati 1988; Kruger 1980), and reducing the costs of foreign inputs (Lee 1993). Each of these arguments implies that trade liberalization will increase productivity and national competitiveness.

The empirical support for trade openness has become quite strong in recent years, as scholars have identified a positive cross-national correlation between external openness and economic growth (Edwards 1989). Sachs and Warner (1995) conducted an influential empirical study on the effects of trade liberalization on economic performance in a large sample of countries. Using a simple binary indicator of trade openness, they showed that open countries have grown faster than those closed to trade. The study spawned a number of related inquiries, and more recent approaches using data through the 1990s confirm that trade openness is associated with higher growth rates (see, for example, Wacziarg and Welch 2008).

Regulatory Competitiveness

The second cluster relates to the attractiveness of the domestic regulatory and business environment. We refer to this concept as regulatory competitiveness. Regulatory competitiveness generally improves through the reduction of the types of regulation that raise the costs of doing business. However, improvements in regulatory competitiveness may also entail a positive role for governments. For instance, govern-

ments are required to specify and enforce property and contracting rights in business disputes. Governments also produce financial regulations, such as corporate governance laws, that promote financial market development, which improves the business environment. Another mechanism by which governments may promote regulatory competitiveness is through antitrust (or competition) policy, to assure well-functioning markets.

Recent scholarship points to the contribution of financial markets to economic growth. Efficient and deep financial markets provide capital for the expansion of otherwise financially constrained firms (Levine 1991, 2005; Demirgüç-Kunt and Levine 2008; Rajan and Zingales 1998). A well-functioning financial system will efficiently allocate resources where the expected rate of return is the highest. Furthermore, financial markets improve the efficiency of resource allocations by providing information about possible investments, monitoring the effectiveness of those investments, diversifying risk, and mobilizing and pooling savings (Demirgüç-Kunt and Levine 2008). A seminal empirical paper by King and Levine (1993) finds a positive relationship between banking sector development and economic performance (measured as growth in real per capita GDP as well as in total productivity) in a sample of 77 countries over the period 1960–89. Papers by Levine et al. (2000) and Levine and Zervos (1998) find consistent results.

Our focus is on how governments contribute to the development and the stability of financial markets. Important determinants of financial market development include investor protections (La Porta, 1997; Demirgüç-Kunt and Maksimovic 1998; Beck et al. 2005) and creditor protections (Djankov et al. 2005). Firms' ability to access finance from outside investors will be limited if the rights of those investors are not protected by the legal system. Investor and creditor protections are part of a broader set of property and contract protections that have been shown to matter for growth and economic development (North 1990; Acemoglu and Johnson, 2005).

Next, competitive countries are characterized by robust private sector competition, which requires that laws and regulations do not unnecessarily impede the entry of new market participants (De Soto 1989). Building on De Soto's work, Djankov and colleagues (2002) document substantial variation in the regulatory requirements for starting a business. For example, the authors count 19 procedural requirements taking 149 days in Mozambique, whereas an entrepreneur from Canada can complete the process in just 2 days. These authors show that the number of procedures required to start a business is correlated with corruption and with lower levels of economic development; and there is no evidence that entry regulations improve the provision of private or public goods across countries. That is, by deterring potential competi-

tors, impediments to market entry appear to protect incumbent firms at the expense of national competitiveness.

Another important determinant of economic competition is the regulation of anticompetitive behavior by powerful incumbent firms. A competitive economy is characterized by the entry of new firms—foreign and domestic—into product markets, which reduces producer rents, leading to higher overall welfare, lower prices, and lower unemployment. The delegation of antitrust regulatory authority to an independent competition agency has been shown to increase entry rates of firms into the market (Kee and Hoekman 2007). Fox (2007) advocates antitrust enforcement as a tool to reduce poverty and promote economic development, which suggests a link between antitrust enforcement and national competitiveness.

Public Investment Competitiveness

The third conceptualization of competitiveness captures the investments that governments make to enhance a country's productivity. We refer to this as public investment competitiveness. Prime examples include investments in human capital formation and infrastructure. This concept is distinct from regulatory competitiveness because it does not directly relate to the rules by which businesses interact. Instead, it captures the efficiency and efficacy of governments' social investments and how these investments increase economic productivity.

Investments in human capital formation are an essential determinant of national competitiveness. The causal channel operates through the powerful effect of education on worker productivity, which has been shown to account for differences in income across countries (Barro 1991; Mankiw et al. 1992). That is, education matters for competitiveness to the extent that differences in skill levels are related to large differences in productivity (Schultz 1961; Lucas 1988; Becker 1993). Governments can increase the productivity of workers by investing in education; and the education of women in particular has been linked to improved economic performance (Summers 1994).

Governments also invest in infrastructure. Infrastructure has been identified as a major source of competitiveness because it represents the conduit through which economic activity occurs (Aschauer 1989; Gramlich 1994; Easterly 2002). Indeed, roads, ports, bridges, and airports are required to ensure that economic agents can transport goods and services within their country—and into other countries—in a timely and efficient manner. A modern infrastructure also ensures that labor may be allocated optimally. Therefore, governments' investments in physical infrastructure represent an important determinant of national competitiveness.

In addition, a primary function of the state that increases national competitiveness is the development of a rule of law that promotes productive investment. Rule of law refers to two forms of security enforced by the state: physical and legal (Haggard et al 2008). Hobbes characterized the state of nature as one of ongoing threats to personal security and property, and it is this basic state with which governments must contend in order to promote national competitiveness. Governments contribute to physical security by hiring, training, and deploying law enforcement officials. Numerous studies have shown that improvements in physical security are linked to investor confidence and national competitiveness (Black et al. 2000; Dixit 2004; Grossman and Kim 1995).

The state is also responsible for promoting legal security in the form of a judicial system that adjudicates disputes in a manner that is efficient, fair, and consistent (Holmes 2003). A wide body of research has linked legal institutional strength to competitiveness, while related work shows that corrupt legal systems impede investment and slow productivity growth (Mauro 1995; Knack and Keefer 1995).

Comparative Analysis of Competitiveness in Latin America

We measure external competitiveness using two independent data sources. Data on trade restrictions come from the World Trade Organization International Trade and Tariff database (WTO n.d.). We use the simple average (unweighted) most favored nation applied tariff from 2007. We also include an index of trade openness that incorporates the trade-weighted average tariff rate, as well as nontariff barriers: the Trade Freedom Index, developed by the Heritage Foundation.[2] Our index of external competitiveness represents the average of the standardized values of these two independent components.[3]

Our index of regulatory competitiveness incorporates four independent measures. We turn to the Doing Business Project (DBP) for objective measures of domestic laws, regulations, and administrative requirements affecting businesses in 183 countries.[4] We use three indices from the DBP, each averaged over the period 2004–10. One measures the regulations required to start a business; the second captures the quality of contract enforcement, measured as the number of days required to resolve a commercial dispute.[5] The third measures the strength of investor protections. In addition, we incorporate an index gauging the effectiveness of antimonopoly policy from the World Economic Forum's *Global Competitiveness Report* (GCR).[6]

Our index of public investment competitiveness combines subjective and objective measures. Measures of the quality of education, the quality of infrastructure, the independence of the judiciary, and the reli-

Table 1. Competitiveness Indexes

Competitiveness Index	Component	Source
External	Average tariff, 2007	World Trade Organization
	Index of trade openness (tariffs and nontariff barriers), average 2000–2006	Heritage Foundation
Regulatory	Entry regulations, average 2004–2010	Doing Business Project
	Contract enforcement, average 2004–2010	Doing Business Project
	Investor protection, average 2004–2010	Doing Business Project
	Antimonopoly policy, 2009	World Economic Forum
Public Investment	Quality of Education	World Economic Forum
	Quality of Infrastructure	World Economic Forum
	Primary school enrollment rate	UNESCO
	Judicial independence	World Economic Forum
	Reliability of police	World Economic Forum

ability of the police force come from the GCR. We also include a variable that captures de facto commitment to education: the primary school enrollment rate.[7] The data and sources used to derive our indexes appear in table 1.

Table 2 displays our rankings of Latin American countries along the three dimensions of competitiveness. The first column reports the external competitiveness scores. Chile is the most externally competitive country in Latin America. It is interesting to note that the other countries ranking high in the external dimension are all relatively small economies in Central America (Costa Rica, El Salvador, Nicaragua, and Guatemala).

To probe further the relationship between the size of the economy and trade openness, figure 1 presents a scatterplot of external competitiveness and GDP. External competitiveness appears to be strongly negatively correlated with the size of the economy; some of the largest economies in the region, such as Argentina, Mexico, and Brazil, are the least externally competitive. The regression coefficient is –.309, significant at the 99 percent level of confidence. This is not surprising; larger countries may opt for development models that take advantage of their larger domestic markets, and sheltered and subsidized domestic producers—their owners and workers—gain the political leverage necessary to sustain protectionist measures.

Table 2. External, Regulatory, and Public Investment Competitiveness in Latin America

Rank	Country	External	Rank	Country	Regulatory	Rank	Country	Public Investment
1	Chile	1.432	1	Chile	0.902	1	Chile	1.315
2	Costa Rica	1.031	2	Peru	0.551	2	Costa Rica	1.109
3	El Salvador	0.911	3	Jamaica	0.455	3	Uruguay	0.926
4	Nicaragua	0.732	4	Mexico	0.364	4	Trinidad and Tobago	0.721
5	Guatemala	0.697	5	Brazil	0.312	5	Jamaica	0.524
6	Bolivia	0.596	6	Panama	0.266	6	El Salvador	0.385
7	Trinidad and Tobago	0.563	7	Nicaragua	0.007	7	Colombia	0.340
8	Honduras	0.557	8	Uruguay	0.000	8	Panama	0.123
9	Uruguay	0.286	9	Argentina	–0.046	9	Brazil	0.104
10	Panama	0.150	10	Colombia	–0.035	10	Mexico	–0.047
11	Jamaica	0.101	11	Dominican Republic	–0.073	11	Honduras	–0.145
12	Paraguay	0.077	12	Paraguay	–0.087	12	Guatemala	–0.187
13	Dominican Republic	–0.344	13	El Salvador	–0.152	13	Argentina	–0.227
14	Peru	–0.372	14	Trinidad and Tobago	–0.216	14	Nicaragua	–0.389
15	Mexico	–0.436	15	Costa Rica	–0.285	15	Peru	–0.439
16	Argentina	–0.880	16	Bolivia	–0.387	16	Ecuador	–0.469
17	Ecuador	–0.885	17	Ecuador	–0.431	17	Dominican Republic	–0.562
18	Colombia	–0.915	18	Honduras	–0.535	18	Venezuela	–0.816
19	Brazil	–1.000	19	Venezuela	–0.758	19	Bolivia	–0.823
20	Venezuela	–1.299	20	Guatemala	–0.816	20	Paraguay	–1.162

Note: The indexes represent the average value of the standardized subcomponents reported in table 1.

Figure 1. External Competitiveness and GDP

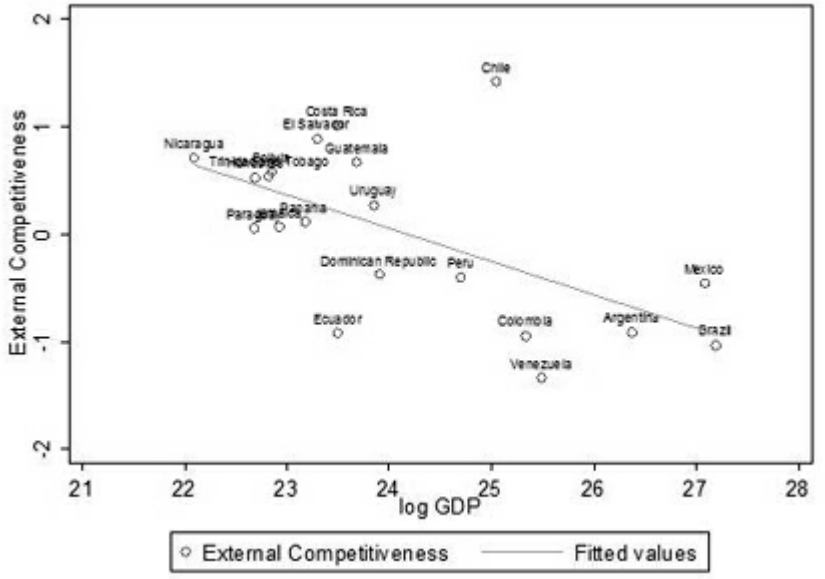


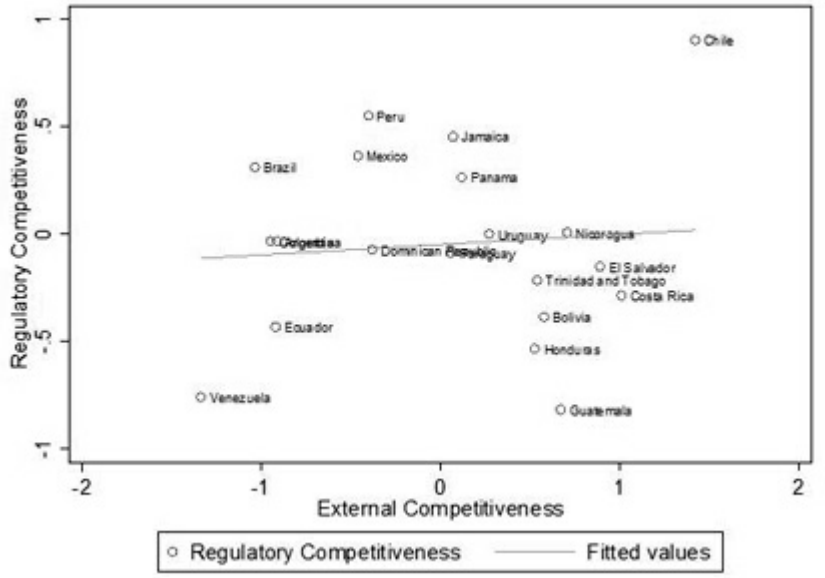
Table 3. Correlation Matrix

	External Competitiveness	Regulatory Competitiveness	Public Investment Competitiveness
External Competitiveness	1		
Regulatory Competitiveness	0.0852	1	
Public Investment Competitiveness	0.4718	0.3915	1

Column 2 of table 2 displays the regulatory competitiveness scores. With the exception of Chile, a clear leader in this category as well, the highly competitive countries in terms of regulatory policy are not the same as those scoring high on the external dimension. Indeed, as reported in table 3, the correlation coefficient between these two dimensions is just .085. As evidenced by the graph in figure 2, there is no clear relationship between external and regulatory competitiveness. Leaders in the regulatory policy category, including Peru, Mexico, and Brazil are in the bottom 50th percentile on the external dimension.

In contrast to the negative relationship between GDP and external openness, the scatterplot in figure 3 suggests that countries with larger economies tend to have a more competitive domestic regulatory struc-

Figure 2. Regulatory Competitiveness and External Competitiveness

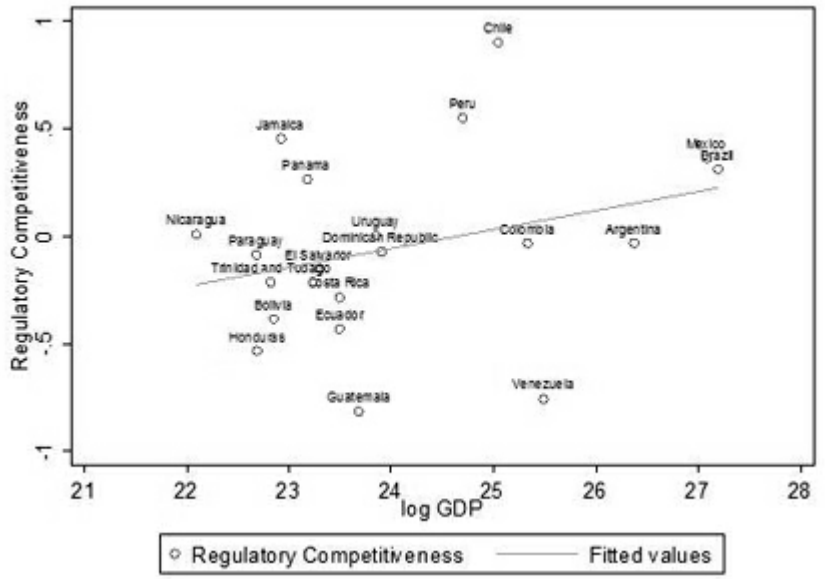


ture. However, several exceptions to this pattern exist. Countries such as Chile, Jamaica, and Peru score higher than predicted, given the size of their economies. Underperformers include Guatemala and Venezuela, which both score much lower than GDP would predict.

The final column of table 2 reports the public investment competitiveness scores. Again, Chile is at the top of this category, which measures the positive investments made by governments to increase private sector productivity. Other standouts include the small economies of Costa Rica, Uruguay, and Trinidad and Tobago. These countries are small, but relatively wealthy in terms of GDP per capita. Indeed, we note from the scatterplots in figures 4 and 5 that while the size of the economy (GDP) is not a particularly good predictor of public investment competitiveness (figure 4), there is a very strong relationship between country wealth (GDP per capita) and public investment competitiveness (figure 5). This evidence is in line with the view that richer countries are better able to fund investments not only in infrastructure and education, but also in the rule of law.

Although the public investment and external dimensions of competitiveness correlate relatively highly (.471), it is worthwhile to note that just two countries (Chile and Costa Rica) are in the top five of both categories. Furthermore, many of the larger economies that score low on the external dimension (e.g., Colombia, Brazil, Mexico) fare relatively well on the public investment index (ranks of 7, 9, and 10, respec-

Figure 3. Regulatory Competitiveness and GDP



tively). Other outliers include Uruguay, which ranks third on the public investment dimension but is not particularly externally competitive, and Bolivia, which is marginally more externally competitive than Uruguay, while scoring 19 of 20 in terms of public investment competitiveness.

Similarly, the relationship between public investment and regulatory competiveness yields no consistent pattern. Note that aside from Chile, which scores remarkably high in both categories, only one other country (Jamaica) reaches the top five in both categories. Of the small country standouts on the public investment dimension, Costa Rica, Uruguay, and Trinidad and Tobago, only Uruguay reaches the top half (number 8) in terms of regulatory competitiveness.

A further consideration is how the size of the economy and the level of economic development influence the measures of competitiveness. In particular, our findings thus far suggest that the size of the economy (measured by the log of GDP) is negatively correlated with external competitiveness and positively associated with regulatory competitiveness. While economic size has no discernible impact on the third dimension, public investment competitiveness, the level of country wealth (as measured by the log of GDP per capita) is strongly predictive.

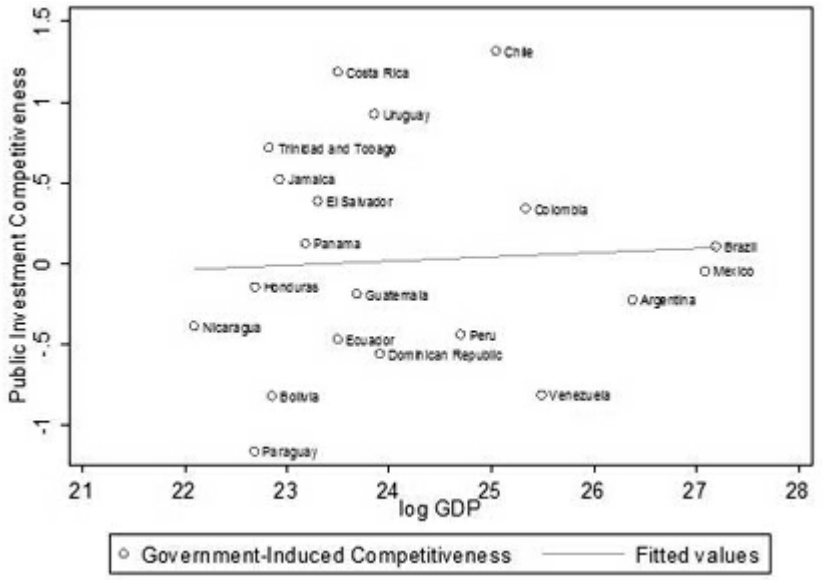
We adjust our three competitiveness measures to account for country size and wealth, and report the rankings in table 4. The adjusted values are the simple residuals from an OLS model in which we regress each competitiveness index against country size or wealth. In particular,

Table 4. Adjusted External, Regulatory, and Public Investment Competitiveness in Latin America

Rank	Country	External (adjusted)	Rank	Country	Regulatory (adjusted)	Rank	Country	Public Investment (adjusted)
1	Chile	1.670	1	Chile	0.868	1	Chile	0.996
2	Costa Rica	0.791	2	Jamaica	0.607	2	Costa Rica	0.967
3	El Salvador	0.611	3	Peru	0.547	3	El Salvador	0.491
4	Guatemala	0.516	4	Panama	0.395	4	Uruguay	0.419
5	Mexico	0.432	5	Nicaragua	0.232	5	Jamaica	0.386
6	Bolivia	0.159	6	Mexico	0.149	6	Colombia	0.375
7	Uruguay	0.157	7	Brazil	0.088	7	Honduras	0.316
8	Trinidad and Tobago	0.116	8	Paraguay	0.086	8	Nicaragua	0.282
9	Honduras	0.068	9	Uruguay	0.070	9	Trinidad and Tobago	0.265
10	Nicaragua	0.061	10	Dominican Republic	–0.007	10	Guatemala	0.054
11	Brazil	–0.100	11	El Salvador	–0.033	11	Brazil	–0.067
12	Panama	–0.187	12	Trinidad and Tobago	–0.055	12	Ecuador	–0.076
13	Argentina	–0.232	13	Colombia	–0.095	13	Panama	–0.081
14	Peru	–0.240	14	Costa Rica	–0.183	14	Peru	–0.292
15	Jamaica	–0.314	15	Argentina	–0.186	15	Bolivia	–0.296
16	Paraguay	–0.413	16	Bolivia	–0.229	16	Mexico	–0.472
17	Dominican Republic	–0.458	17	Ecuador	–0.329	17	Dominican Republic	–0.567
18	Colombia	–0.589	18	Honduras	–0.362	18	Paraguay	–0.780
19	Venezuela	–0.924	19	Guatemala	–0.731	19	Argentina	–0.791
20	Ecuador	–1.125	20	Venezuela	–0.832	20	Venezuela	–1.129

Note: The external and regulatory indexes are adjusted for the size of the economy (GDP). Public investment competitiveness index is adjusted for country wealth (GDP/capita). The adjusted index values represent the deviations from the predicted values derived from a linear regression model in which the competitiveness index is regressed on the economic variable (GDP or GDP/capita). See figures 1, 3, and 5.

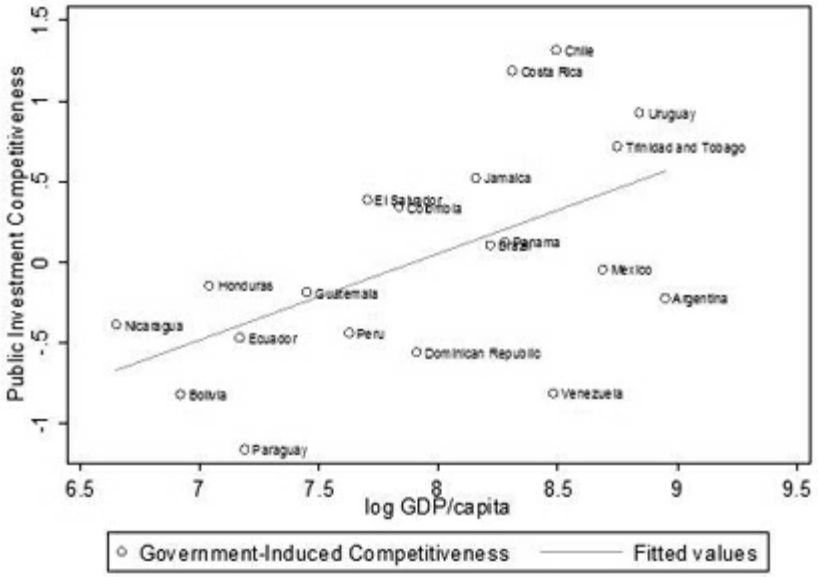
Figure 4. Public Investment Competitiveness and GDP



we model external competitiveness and regulatory competitiveness as a function of the log of GDP. Since country wealth is a better predictor of public investment competitiveness, we model this index as a function of the log of GDP per capita.[8] The residuals represent the country-specific deviations from the regression line.

The adjusted values provide insights into which governments outperform or underperform on each dimension of competitiveness relative to what particular economic constraints would predict. Chile is noted to be remarkably externally competitive, given the size of the economy; Ecuador, despite being a relatively small economy, is quite closed. Countries with strong commitments to regulatory competitiveness include Peru, Chile, and Jamaica, while Guatemala and Venezuela underperform on the regulatory dimension. Perhaps the most interesting findings relate to public investment competitiveness. Wealthy countries, as expected, score higher in this dimension. However, net of wealth, the governments of Costa Rica, Chile, El Salvador, and Uruguay are particularly committed to public investment competitiveness. By contrast, adjusting for capacity, Argentina, Venezuela, and Paraguay reflect a relatively weak commitment to the public goods dimension of competitiveness.

Figure 5. Public Investment Competitiveness and Country Wealth (GDP/capita)



CONCLUSIONS

This study has introduced distinct theoretical variants of the concept of national competitiveness and has noted that the determinants of productivity growth cluster along three dimensions: openness to international trade and investment (external), a regulatory environment that promotes competition (regulatory), and government investments in human capital, security, and infrastructure (public investment). We have shown that these concepts are not only theoretically but also empirically distinct by comparing the scores along these indicators across a sample of Latin American countries.

This analysis suggests that scholars and practitioners should be more precise in their application of the term *competitiveness*, especially when making statements about overall levels of the national competitiveness, where the institutional environment (or "quality") of one country is compared to others. By clarifying the particular concept, we avoid inherent imprecision in the identification of cases that score well on one dimension but not on others. Furthermore, we have shown that country size and wealth are not particularly good proxies for the "quality" of the institutional environment, as the relationship between these variables and competitiveness appears to depend crucially on the particular conceptualization of competitiveness.

It is interesting to note that "competitiveness" measures are not necessarily biased toward less government. Effective regulatory regimes require strong institutional frameworks, and public investment competitiveness requires a smart and active public sector. While Chile is associated with market-friendly policies, it also scores well on public investment competitiveness. Policy-oriented studies that exclusively equate competitiveness with the free market do us a disservice. In the real world, we encounter hybrid regimes, policy tradeoffs, and varieties of institutional choices.

NOTES

1. For example, President Barack Obama made U.S. international competitiveness a centerpiece of his January 25, 2011 State of the Union Address.

2. The Trade Freedom Index is averaged over the period 2000–2006. The index is downloaded from the Quality of Governance dataset (Teorell et al. 2009).

3. Our standardization procedure generates variables with means of zero and standard deviations of one.

4. The fundamental assumption motivating the Doing Business Project is that economic activity requires good rules, including "rules that establish and clarify property rights and reduce the costs of resolving disputes, rules that increase the predictability of economic interactions and rules that provide contractual partners with core protections against abuse" (World Bank 2009). Yearly coverage begins in 2004 and includes up to ten indicators.

5. The measure captures the number of calendar days from the moment the plaintiff files a commercial dispute until the actual payment.

6. The index represents the average response among businesspeople to the following question: "To what extent does antimonopoly policy promote competition in your country? [1 = does not promote competition; 7 = effectively promotes competition]" (Schwab 2009, 406).

7. Primary school enrollment data are averaged over the period 2000–2008. Data come from UNESCO and are downloaded from the World Bank World Development Indicators.

8. The models estimate robust standard errors.

REFERENCES

Acemoglu, Daron, and Simon Johnson, 2005. Unbundling Institutions. *Journal of Political Economy* 113, 5 (October): 949–95.

Aschauer, David A. 1989. Is Public Expenditure Productive? *Journal of Monetary Economics* 23, 2: 117–200.

Barro, Robert. 1991. Economic Growth in a Cross Section of Countries. *Quarterly Journal of Economics* 106 (May): 407–43.

Beck, Thorsten, Demirgüç-Kunt, Asli, and Ross Levine. 2005. Law and Firms' Access to Finance. *American Law and Economics Review* 7: 211–52.

Becker, Gary. S. 1993. *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. 3rd ed. Chicago: University of Chicago Press.

Bhagwati, Jagdish. 1988. Export-Promoting Trade Strategy: Issues and Evidence. *World Bank Research Observer* 3: 27–57.

Demirgüç-Kunt, Asli, and Ross Levine. 2008. Finance, Financial Sector Policies, and Long-Run Growth. Policy Research Working Paper Series 4469. Washington, DC: World Bank.

Demirgüç-Kunt, Asli, and Vojislav Maksimovic. 1998. Law, Finance, and Firm Growth. *Journal of Finance* 53: 2107–37.

De Soto, Hernando. 1989. *The Other Path: The Invisible Revolution in the Third World*. New York: Harper and Row.

Dixit, Avinash. 2004. *Lawlessness and Economics: Alternative Modes of Governance*. Oxford: Oxford University Press.

Djankov, Simeon, Rafael La Porta, Florencio López de Silanes, and Andrei Shleifer. 2002. The Regulation of Entry. *Quarterly Journal of Economics* 117, 1 (February): 1–37.

Easterly, William. 2002. *The Elusive Quest for Growth*. Cambridge: MIT Press.

Edwards, Sebastian. 1989. Openness, Outward Orientation, Trade Liberalization, and Economic Performance in Developing Countries. Policy Research Working Paper 191. Washington, DC: World Bank.

Eicher, Theo S. 1999. Trade, Development, and Converging Growth Rates: Dynamic Gains from Trade Reconsidered. *Journal of Development Economics* 48, 1: 179–98.

Fox, Eleanor M. 2007. Economic Development, Poverty and Antitrust: The Other Path. *Southwestern Journal of Law and Trade in Americas* 211.

Gramlich, Edward M. 1994. Infrastructure Investment: A Review Essay. *Journal of Economic Literature* 32, 3: 1176–96.

Grossman, Herschel, and Minseong Kim. 1995. Swords or Plowshares? A Theory of the Security of Claims to Property. *Journal of Political Economy* 103: 1275–88.

Haggard, Stephan, Andrew MacIntyre, and Lydia Tiede. 2008. The Rule of Law and Economic Development. *Annual Review of Political Science* 11: 205–34.

Heritage Foundation. 2009. *Trade Freedom Index*. www.heritage.org/index/trade-freedom.

Holmes, S. 2003. Lineages of the Rule of Law. In *Democracy and the Rule of Law*, ed. M. Maravall and Adam Przeworski. Cambridge: Cambridge University Press. 19–61.

Kee, Hiau L., and Bernard Hoekman. 2007. Imports, Entry, and Competition Law as Market Disciplines. *European Economic Review* 51, 4: 831–58.

King, Robert G., and Ross Levine. 1993. Finance and Growth: Schumpeter Might Be Right. *Quarterly Journal of Economics* 108, 3 (August): 717–37.

Knack, Stephen, and Philip. Keefer. 1995. Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures. *Economics and Politics* 7: 207–28.

Kruger, Anne. 1980. Trade Policy as an Input to Development. *American Economic Review* 70: 288–92.

Krugman, Paul. 1994. Competitiveness: A Dangerous Obsession. *Foreign Affairs* 73, 2: 28–44.

Lall, Sanjaya, 2001. Competitiveness Indices and Developing Countries: An Economic Evaluation of the Global Competitiveness Report. *World Development* 29, 9 (September): 1501–25.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny. 1997. Legal Determinants of External Finance. *Journal of Finance* 52, 3 (July): 1131–50.

Lee, Jong-Wha. 1993. International Trade, Distortions, and Long-Run Economic Growth. *IMF Staff Papers* 40, 2 (June): 299–328.

Levine, Ross. 1991. Stock Markets, Growth, and Tax Policy. *Journal of Finance* 46: 1445–65.

———. 1998. The Legal Environment, Banks, and Long-Run Economic Growth. *Journal of Money, Credit, and Banking* 30: 596–613.

———. 2005. Finance and Growth: Theory and Evidence. In *Handbook of Economic Growth*, ed. Philippe Aghion and Steven Durlauf. Amsterdam: Elsevier. 865–934.

Levine, Ross, and Sara Zervos. 1998. Stock Markets, Banks, and Economic Growth. *American Economic Review* 88: 537–58.

Levine, Ross, Norman Loayza, and Thorsten Beck. 2000. Financial Intermediation and Growth: Causality and Causes. *Journal of Monetary Economics* 46: 31–77.

Lucas, Robert. E. 1988. On the Mechanics of Economic Development. *Journal of Monetary Economics* 22, 1: 3–42.

Mankiw, Gregory, David Romer, and David N. Weil. 1992. A Contribution to the Empirics of Economic Growth. *Quarterly Journal of Economics* 107 (May): 407–38.

Mauro, Paolo. 1995. Corruption and Growth. *Quarterly Journal of Economics* 110, 3 (August): 681–712.

North, Douglas. 1990. *Institutions, Institutional Change and Economic Performance: Political Economy of Institutions and Decisions*. Cambridge: Cambridge University Press.

Porter, Michael. 1990. *The Competitive Advantage of Nations*. New York: Free Press.

———. 2004. Building the Microeconomic Foundations of Prosperity: Findings from the Business Competitiveness Index. In *Global Competitiveness Report* 2003–2004. World Economic Forum. 29–56.

Rajan, Raghuram G., and Luigi Zingales. 1998. Financial Dependence and Growth. *American Economic Review* 88: 559–86.

Sachs, Jeffrey D., and Andrew Warner. 1995. Economic Reform and the Process of Global Integration. Brookings Papers on Economic Activity 26, 1: 1–118.

Schultz, Theodore. W. 1961. Investment in Human Capital. *American Economic Review* 1, 2: 1–17.

Schwab, Klaus. 2009. *The Competitiveness Report, 2009–2010*. Geneva: World Economic Forum.

Summers, Lawrence 1994. *Investing in All the People: Educating Women in Developing Countries*. Washington, DC: World Bank.

Teorell, Jan, Nicholas Charron, Marcus Samanni, Soren Holmberg, and Bo Rothstein. 2009. The Quality of Government Dataset. www.qog.pol.gu.se

Young, Alwyn. 1991. Learning by Doing and the Dynamic Effects of International Trade. *Quarterly Journal of Economics*. 106, 2 (May): 369–405.

Wacziarg, Romain, and Karen Horn Welch. 2008. Trade Liberalization and Growth: New Evidence. *World Bank Economic Review* 22, 2 (June): 187–231.

World Bank. 2009. *Doing Business 2010: Reforming Through Difficult Times*. Washington, DC: World Bank.

World Trade Organization (WTO). n.d. International Trade and Tariff Data. Database. www.wto.org/english/res_e/statis_e/statis_e.htm.