

Comment

César Calderón: Diego Restuccia's paper addresses one of the key stylized facts of Latin America's development: over the last hundred years, relative income per capita in the region (with respect to the United States) has remained roughly flat. Some practitioners have dubbed this pattern the one hundred years of solitude, as the region has failed to converge to the living standards of higher-income countries.¹ In fact, the relative income per capita of the eight largest Latin American economies relative to the United States has fluctuated around 0.25 and 0.30 since 1900. This behavior is appalling when compared to the notable catch-up engineered by East Asia (which quadrupled over the last 60 years). The paper attributes the region's failure to catch up to institutions and policy distortions—and, more specifically, to policies and regulations that impede market contestability and an efficient reallocation of resources.

Growth Accounting: Measurement Issues

I agree with the author that Latin America's failure to catch up with the United States is likely to be attributed to systemic differences in total factor productivity (TFP). However, there are some measurement issues that the author should have discussed further. Although accounting for all these issues would not have changed his results qualitatively, they are worth mentioning as caveats as they may alter the productivity ranking among countries within the region.

Measuring TFP is not a trivial issue. The TFP component of growth is, by definition, a residual. It is typically computed as the difference between output growth and a weighted average of the growth in the quantity and quality of factors of production. As such, any measurement errors present in the variables used to measure labor and capital are mechanically imputed to TFP. For instance,

1. De la Torre (2011).

failure to account for improvements in the quality composition of capital stocks or the labor force will tend to overestimate the TFP component. Analogously, if the labor and capital actually used in production are considerably lower than their available stocks (or installed capacity), the resulting TFP estimates will be underestimated.² The following points should also be taken into account in the discussion.

—*The capital share.* In several papers that conduct growth accounting exercises, the share of capital (α) has been calculated using the labor income share in total income. This share tends to be overestimated, however, because it does not take into account the labor income of the self-employed and other proprietors.³ This is key in Latin America given the importance of informality.

—*Human capital.* There is a wide discussion on the contribution of human capital (and, more specifically, education) to growth. Pritchett argues that the returns to education may be overstated as a result of low educational quality and perverse incentives created by the institutional and governance environment.⁴

—*Independence between factor accumulation and TFP growth.* This is a crucial underlying assumption in the growth accounting literature, yet it can be invalidated on theoretical grounds. For instance, Klenow and Rodríguez-Clare point out that TFP growth can revive investment projects that were previously not profitable.⁵ In addition, technological innovations embodied in capital goods will render a significant relationship between TFP growth and the speed rate of capital accumulation.⁶

Explaining Latin America's Underdevelopment: What the Paper Omits

The paper fails to mention two major factors that may explain the lack of convergence of the Latin America region vis-à-vis advanced countries: namely, the instability of political institutions and macroeconomic instability. These

2. For instance, Loayza, Fajnzylber, and Calderón (2005) add controls for the rate of utilization or employment of capital and labor in the growth accounting analysis for Latin America. They adjust for the degree of utilization of the capital stock by using the rate of labor employment as a proxy. With regard to labor, they deduct from the working-age population the number of inactive and unemployed people and adjust for the number of hours actually worked.

3. Gollin (2002).

4. Pritchett (2001).

5. Klenow and Rodríguez-Clare (1997).

6. Hulten (1992).

two dimensions are important because they create the set of economic incentives that will determine agents' behavior and also condition agents' risk management practices and their ability to take risks in the economy.

With regard to political instability, economic institutions shape economic incentives and set constraints.⁷ These institutions are, in turn, determined by the political process—and, hence, by political institutions. In the case of Latin America, the history of the region has been plagued by heightened political instability.⁸ Some countries have had repressive, nondemocratic governments, while others have experienced episodes of civil conflict and war, terrorism and drug trafficking, and rampant crime and violence and inequality. All these events have generated a lot of political turmoil, which represents a major barrier to development in the region. As political turmoil increased, economic policy became more volatile and uncertain, leading economic agents to defer saving-investment decisions.

With regard to macroeconomic instability, economists and historians typically describe the dismal performance of Latin America in the 1980s as the Lost Decade. This decade was characterized by macroeconomic mismanagement that resulted in large macroeconomic imbalances, recurrent balance-of-payments crises, and high inflationary episodes. Inflation reached the three-digit level, and in some countries it even hit four digits (for instance, Argentina, Bolivia, Brazil, and Peru). Macroeconomic instability led to a massive outflow of capital. Government officials, in their attempt to control inflation and prevent a massive depreciation of the currency, conducted contractionary monetary and fiscal policies that ended up deepening the recessionary phase of the cycle.

This pervasive high inflation constituted a major barrier to development in the region. Several papers show that high inflation lowers growth, and the effect is transmitted through a reduction in business investment and a decrease in productivity.⁹ High inflation shortens the planning horizon of households and entrepreneurs. As inflation erodes the storage value of the domestic currency, it holds back the development of domestic financial intermediaries—for instance, savings dwindle, long-term contract markets disappear, and the economy engages in a process of dollarization.

7. See Acemoglu and Robinson (2012).

8. Easterly (2005) points out that the twelve major Latin American countries had 174 revolutions over 1950–2001.

9. Khan and Senhadji (2001); Andrés and Hernando (1999).

Conclusion

Living standards in Latin America have improved in recent years. Historically, however, we have been unable to catch up with advanced economies. To make matters worse, other dynamic emerging markets have taken off and managed to distance themselves from the region in terms of income per capita. An interpretation of the underdevelopment problem in the region should, to a large extent, rest on the inadequacies of the political process that shaped incentives toward cronyism. The inherent instability of this process led to uncertain and unsustainable policies that ended up generating high inflation, greater economic instability, and, hence, lower long-term growth.

References

- Acemoglu, Daron, and James A. Robinson. 2012. *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*. New York: Crown Publishers.
- Aghion, Philippe and Abhijit Banerjee. 2005. *Volatility and Growth*. Claredon Lectures in Economics. Oxford University Press.
- Alfaro, Laura, Andrew Charlton, and Fabio Kanczuk. 2009. "Firm-Size Distribution and Cross-Country Income Differences." In *NBER International Seminar on Macroeconomics 2008*, vol. 5, edited by Jeffrey A. Frankel and Christopher Pissarides, pp. 243–72. University of Chicago Press.
- Andrés, Javier, and Ignacio Hernando. 1999. "Does Inflation Harm Economic Growth? Evidence from the OECD." In *The Costs and Effects of Price Stability*, edited by Martin Feldstein, pp. 315–41. University of Chicago Press.
- Atkeson, Andrew, and Patrick J. Kehoe. 2005. "Modeling and Measuring Organizational Capital." *Journal of Political Economy* 113(5): 1026–53.
- Atkeson, Andrew, Aubhik Khan, and Lee Ohanian. 1996. "Are Data on Industry Evolution and Gross Job Turnover Relevant for Macroeconomics?" *Carnegie-Rochester Conference Series on Public Policy* 44(1): 215–39.
- Barro, Robert J., and Jong-Wha Lee. 2010. "A New Data Set of Educational Attainment in the World, 1950–2010." Working Paper 15902. Cambridge, Mass.: National Bureau of Economic Research.
- Barseghyan, Levon, and Riccardo DiCecio. 2011. "Entry Costs, Industry Structure, and Cross-Country Income and TFP Differences." *Journal of Economic Theory* 146(5): 1828–51.
- Bartelsman, Eric, John Haltiwanger, and Stefano Scarpetta. 2013. "Cross-Country Differences in Productivity: The Role of Allocation and Selection." *American Economic Review* 103(1): 305–34.
- Basu, Susanto, and John G. Fernald. 1997. "Returns to Scale in U.S. Production: Estimates and Implications." *Journal of Political Economy* 105(2): 249–83.
- Bello, Omar D., Juan S. Blyde, and Diego Restuccia. 2011. "Venezuela's Growth Experience." *Latin American Journal of Economics* 48(2): 199–226.
- Bergoing, Raphael, Norman Loayza, and Andrea Repetto. 2004. "Slow Recoveries." *Journal of Development Economics* 75(2): 473–506.
- Bergoing, Raphael, and others. 2002. "A Decade Lost and Found: Mexico and Chile in the 1980s." *Review of Economic Dynamics* 5(1): 166–205.
- Bils, Mark, and Peter J. Klenow. 2000. "Does Schooling Cause Growth?" *American Economic Review* 90(5): 1160–83.
- Burstein, Ariel, and Alexander Monge-Naranjo. 2009. "Foreign Know-How, Firm Control, and the Income of Developing Countries." *Quarterly Journal of Economics* 124(1): 149–95.
- Cole, Harold L., and others. 2005. "Latin America in the Rearview Mirror." *Journal of Monetary Economics* 52(1): 69–107.

- Conference Board and Groningen Growth and Development Centre. 2010. Total Economy Database (January). New York.
- Cooley, Thomas F., and Edward C. Prescott. 1995. "Economic Growth and Business Cycles." In *Frontiers of Business Cycle Research*, edited by T. Cooley. Princeton University Press.
- Davis, Steven J., John C. Haltiwanger, and Scott Schuh. 1996. *Job Creation and Destruction*. MIT Press.
- De la Torre, Augusto. 2011. "Latin America and the Caribbean's Long-Term Growth: Made in China?" Washington: World Bank.
- De Soto, Hernando. 1986. *El otro sendero*. Editorial Sudamericana.
- Djankov, Simeon, and others. 2002. "The Regulation of Entry." *Quarterly Journal of Economics* 67(1): 1–37.
- Duarte, Margarida, and Diego Restuccia. 2006. "The Productivity of Nations." *Economic Quarterly* 92(3): 195–224. Federal Reserve Bank of Richmond.
- . 2010. "The Role of the Structural Transformation in Aggregate Productivity." *Quarterly Journal of Economics* 125(1): 129–73.
- Easterly, William R. 2005. Comment on "Latin America in the Rear View Mirror." *Journal of Monetary Economics* 52(1): 109–12.
- Elias, Victor J. 1992. *Sources of Growth: A Study of Seven Latin American Economies*. San Francisco: ICS Press.
- Erosa, Andrés, Tatyana Koreshkova, and Diego Restuccia. 2010. "How Important is Human Capital? A Quantitative Theory Assessment of World Income Inequality." *Review of Economic Studies* 77(4): 1421–49.
- Fantoni, Roberto M. 2007. "Checking Latin America's Vital Signs." *McKinsey Quarterly* (March, special edition).
- Galindo, Arturo, Fabio Schiantarelli, and Andrew Weiss. 2007. "Does Financial Liberalization Improve the Allocation of Investment? Micro-Evidence from Developing Countries." *Journal of Development Economics* 83(2): 562–87.
- Gollin, Douglas. 2002. "Getting Income Shares Right." *Journal of Political Economy* 110(2): 458–74.
- Greenwood, Jeremy, Juan M. Sánchez, and Cheng Wang. 2010. "Financing Development: The Role of Information Costs." *American Economic Review* 100(4): 1875–91.
- Guner, Nezih, Gustavo Ventura, and Yi Xu. 2008. "Macroeconomic Implications of Size-Dependent Policies." *Review of Economic Dynamics* 11(4): 721–44.
- Hendricks, Lutz. 2002. "How Important Is Human Capital for Development? Evidence from Immigrant Earnings." *American Economic Review* 92(1): 198–219.
- Heston, Alan, Robert Summers, and Bettina Atten. 2009. Penn World Tables Version 6.3. Center for International Comparisons at the University of Pennsylvania (CICUP).
- Hnatkovska, Viktoria, and Norman Loayza. 2005. "Volatility and Growth." In *Managing Economic Volatility and Crises: A Practitioner's Guide*, edited by Joshua Aizenman and Brian Pinto, pp. 65–100. Cambridge University Press.

- Hopenhayn, Hugo A. 1992. "Entry, Exit, and Firm Dynamics in Long Run Equilibrium." *Econometrica* 60(5): 1127–50.
- Hsieh, Chang-Tai, and Peter J. Klenow. 2009. "Misallocation and Manufacturing TFP in China and India." *Quarterly Journal of Economics* 124(4): 1403–48.
- Hulten, Charles R. 1992. "Growth Accounting When Technical Change Is Embodied in Capital." *American Economic Review* 82(4): 964–80.
- Khan, Mohsin S., and Abdelhak S. Senhadji. 2001. "Threshold Effects in the Relationship between Inflation and Growth." *IMF Staff Papers* 48(1): 1–21.
- Klenow, Peter J., and Andrés Rodríguez-Clare. 1997. "The Neoclassical Revival in Growth Economics: Has It Gone too Far?" *NBER Macroeconomics Annual 1997*, vol. 12, edited by Ben S. Bernanke and Julio J. Rotemberg, pp. 93–103. MIT Press.
- Kydland, Finn E., and Carlos E. J. M. Zarazaga. 2002. "Argentina's Lost Decade." *Review of Economic Dynamics* 5(1): pp 152–65.
- Leal, Julio C. 2010. "Informal Sector, Productivity, and Tax Collection." MPRA Paper 26058. University Library of Munich.
- Loayza, Norman V., Pablo Fajnzylber, and César Calderón. 2005. *Economic Growth in Latin America and the Caribbean: Stylized Facts, Explanations, and Forecasts*. Washington: World Bank.
- Loayza, Norman V., Ana María Oviedo, and Luis Servén. 2007. "Regulation and Macroeconomic Performance." Policy Research Working Paper 3469. Washington: World Bank.
- Manuelli, Rodolfo E. and Ananth Seshadri. 2005. "Human Capital and the Wealth of Nations." 2005 Meeting Paper 56. St. Louis, Mo.: Society for Economic Dynamics.
- Mincer, Jacob A. 1974. *Schooling, Experience, and Earnings*. Columbia University Press.
- Moscato Boedo, Hernán J., and Toshihiko Mukoyama. 2011. "Evaluating the Effects of Entry Regulations and Firing Costs on International Income Differences." *Journal of Economic Growth* 17(2): 143–70.
- Nehru, Vikram, and Ashok Dhareshwar. 1993. "A New Database on Physical Capital Stock: Sources, Methodology, and Results." *Revista de Análisis Económico* 8(1): 37–59.
- Oberfield, Ezra. 2013. "Productivity and Misallocation during a Crisis: Evidence from the Chilean Crisis of 1982." *Review of Economic Dynamics* 16(1): 100–19.
- Pagés, Carmen, ed. 2010. *The Age of Productivity: Transforming Economies from the Bottom Up*. New York: Palgrave Macmillan.
- Perry, Guillermo, and others. 2007. *Informality: Exit and Exclusion*. Washington: World Bank.
- Poschke, Markus. 2010. "The Regulation of Entry and Aggregate Productivity." *Economic Journal* 120 (549): 1175–200.
- Pritchett, Lant. 2001. "Where Has All the Education Gone?" *World Bank Economic Review* 15(3): 367–91.

- Ramey, Garey, and Valerie A. Ramey. 1995. "Cross-Country Evidence on the Link between Volatility and Growth." *American Economic Review* 85(5): 1138–51.
- Ranasinghe, Ashantha. 2011. "Property Rights, Extortion, and the Misallocation of Talent." University of Toronto.
- Restuccia, Diego. 2011. "Recent Developments in Economic Growth." *Economic Quarterly* 97(3): 329–57. Federal Reserve Bank of Richmond.
- Restuccia, Diego, and Richard Rogerson. 2008. "Policy Distortions and Aggregate Productivity with Heterogeneous Establishments." *Review of Economic Dynamics* 11(4): 707–20.
- . 2013. "Misallocation and Productivity." *Review of Economic Dynamics* 16(1) 1–10.
- Restuccia, Diego, and Carlos Urrutia. 2001. "Relative Prices and Investment Rates." *Journal of Monetary Economics* 47(1): 93–121.
- Restuccia, Diego, and Guillaume Vandenbroucke. 2012. "Explaining Educational Attainment across Countries and over Time." University of Toronto.
- Schoellman, Todd. 2012. "Education Quality and Development Accounting." *Review of Economic Studies* 79(1): 388–417.
- Solimano, Andrés, and Raimundo Soto. 2006. "Economic Growth in Latin America in the Late Twentieth Century: Evidence and Interpretation." In *Vanishing Growth in Latin America: The Late Twentieth Century Experience*, edited by Andrés Solimano, pp. 11–45. Northampton, Mass.: Edward Elgar Publishing.
- Tybout, James. 2000. "Manufacturing Firms in Developing Countries: How Well Do They Do and Why?" *Journal of Economic Literature* 38(1): 11–44.
- U.S. Census Bureau. 1997. *Census of Manufactures*. Washington: U.S. Department of Commerce.
- Veracierta, Marcelo. 2001. "Employment Flows, Capital Mobility, and Policy Analysis." *International Economic Review* 42(3): 571–95.
- World Bank. 2012. *Doing Business 2012: Doing Business in a More Transparent World*. Washington: World Bank and International Finance Corporation.