VOL. 7, NO. 4
MAY 2012

EconomicLetter

Insights from the
FEDERAL RESERVE BANK OF DALLAS

Default and Lost Opportunities: A Message from Argentina for Euro-Zone Countries

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Argentina's experience suggests that default will be accompanied by costs that may be missed by looking only at output growth.

Persistent euro-zone turmoil has kept the world economy on edge. Doubts about the ability of many countries in the single-currency region to service their sovereign debt are rising along with the interest rates the affected nations must pay to roll over maturing obligations.

The once unthinkable scenario of a large-scale sovereign debt crisis in the region is prompting a heated debate concerning the costs and benefits of different ways to reduce unsustainable levels of government indebtedness. Euro-zone member Greece recently implemented a restructuring of its sovereign obligations, perhaps because its citizens decided that the benefits of that painful decision outweighed the costs.

Quick prosperity likely wasn't among the anticipated benefits. Still, many observers (including eventually some Greek citizens) might come to expect such a result after reviewing the often-cited experience of Argentina, a country whose output growth rates soared for many years after its 2001 debt default, one of the largest in the history of emerging markets.

Such a benevolent assessment is not borne out by a closer inspection of the economic performance of Argentina after 2001 and its prior default in 1983. If anything, Argentina's experience suggests that default will be accompanied by costs that may be missed by looking only at output growth.

Output Growth After Default

Evidence typically invoked in support of the view that default can put previously stagnated economies on a path to prosperity is shown in Chart 1.[1] It plots the natural logarithm of real GDP per working-age person (15 to 64 years old) in Argentina from 1951 to 2009, multiplied by 100.

The downward tilt to the capital-output ratio hints at the possibility that the 1983 episode inflicted lasting damage to capital accumulation, which the 2001 default did little to repair.

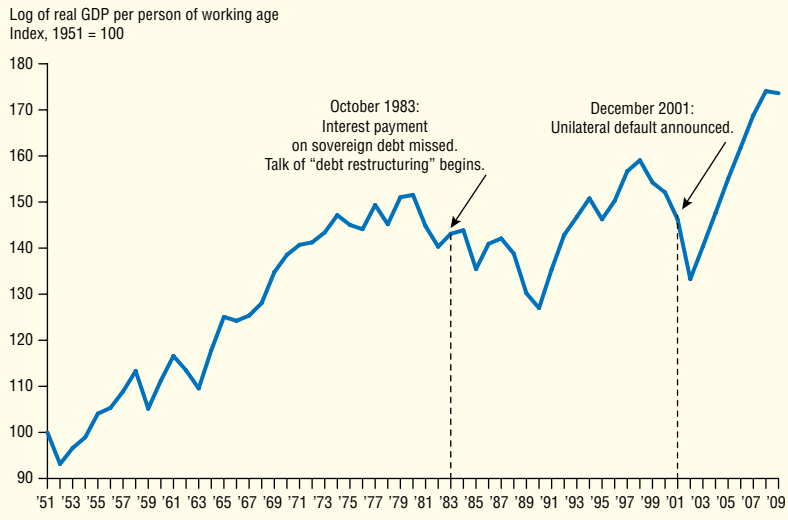
This logarithmic transformation is convenient because it permits approximation of the percentage difference between any two points of the series by subtracting the values associated with them (shown on the vertical axis). Thus, the chart documents that Argentina's output plummeted by about 13 percent in the year or so after the 2001 default.

Seven years of uninterrupted expansion followed, as GDP per working-age individual grew at a 7 percent average annual rate. This performance was not as impressive as it appears because a good part of it was a natural rebound from the previous severe contraction. Nevertheless, the turnaround is oftentimes taken as evidence of the economic growth benefits of default.

If that were true, the opposite conclusion would apply to Argentina's earlier default, in 1983. As Chart 1 also shows, the 1983 default was followed by years of economic decline, the so-called lost decade—hardly evidence that defaults cause growth.

That leaves unresolved how Argentina's economy managed to recover so well from the catastrophic events leading to the 2001 default. In reality, it is far from clear that it did recover.

Chart 1
Argentina's Output Declined Sharply After Defaults



SOURCES: Author's calculations based on National Income Accounts and Demographics data published by Argentina's Instituto Nacional de Estadísticas y Censos.

Capital Stock: Long-Lasting Effects

The evolution of capital stock per working-age person in Argentina, also from 1951 to 2009, is depicted two ways in Chart 2—expressed as a natural logarithm multiplied by 100 and relative to output per working-age person, the capital-output ratio.[2]

Strikingly, the level of the capital stock in Argentina was approximately the same in 2009 as it was about 27 years earlier, right before the 1983 default. That is not quite the performance expected from healthy emerging-market economies, in which the capital stock should grow at or above the pace of output.

In other words, the ratio of the capital stock to output—the capital-output ratio—should be either stable or rising over time. By that standard, Argentina's capital-output ratio should resemble that of a solid performer among emerging market economies—South Korea. That country's capital-output ratio has risen steadily since the 1960s, from about 0.9 to 2.8, where it appears to have settled.[3] Incidentally, that level is in the same order of magnitude as the capital-output ratio consistent with long-run growth features of the United States economy.

Argentina's capital-output ratio behaved much as South Korea's did, but only until the 1983 default. After that, the ratio declined sharply, a worrisome symptom of abnormally low investment rates that cannot be detected by simply looking at output growth. The downward tilt to the capital-output ratio hints at the possibility that the 1983 episode inflicted lasting damage to capital accumulation, which the 2001 default did little to repair. In fact, capital accumulation during the expansion following the 2001 default was considerably weaker than it should have been, given the high

output growth rates observed during the period.[4]

That subpar performance suggests that the subsequent output growth would have been much less impressive if the country hadn't soon started benefitting from booming global commodities prices for items—such as soybean and its byproducts—representing a sizable share of exports. In other words, it may well have been the case that Argentina's economic growth after the 2001 default resulted more from luck than the wisdom of the government's decision.

Keeping Defaulters on a Short Leash

The flatness of the capital stock and the decline in the capital-output ratio after the 1983 default are consistent with patterns that theory predicts should be observed in countries perceived as "opportunistic defaulters."

It postulates that policymakers of countries prone to default constantly weigh the costs and benefits to the citizenry of not repaying the government debt foreigners own. Typically, there will be a threshold for the level of capital stock above which the benefits of a default outweigh the costs. Aware of that, investors stop risking their savings in the country as soon as the capital stock reaches that threshold.[5]

Notice that in the case of Argentina, the latest two defaults occurred when capital stock per working-age person was at about the same level—in both instances close to its historical peak. That might have persuaded investors that this is the maximum level of capital stock that Argentina can tolerate without falling into the temptation of an opportunistic default. As if to validate this perception, in late 2011, when the capital stock again reached levels seen immediately prior to the 1983 and 2001 defaults, Argentina reimposed capital and exchange-rate controls that limited the ability of foreign corporations' subsidiaries to repatriate dividends.

Investors' desire to avoid countries prone to opportunistic default suggests that those episodes' costs may take the form of lost opportunities that can go undetected when looking at the subsequent performance of output alone. In such cases, the proper measure of those costs is the difference between the output actually seen and what would have been observed if incentives to invest hadn't been distorted by the imposition of an implicit upper bound for capital stock accumulation, designed to preempt strategic defaults.

Cost of Defaults: Missed Prosperity

This theoretical insight readily suggests some back-of-the-envelope calculations to estimate the cost of Argentina's defaults. Two pieces of information can be exploited to that end. First, the 2007 study of Argentina by Finn E. Kydland and this author suggests that increasing the capital-output ratio by a factor of x increases output per working-age person by a factor of $x^{2/3}$.

Second, this analysis suggests that if capital accumulation in that country

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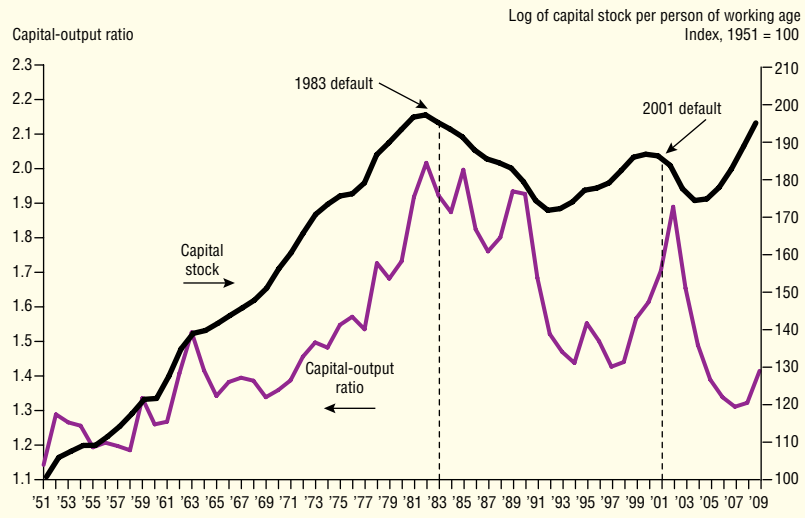
Chart 2

Argentina's Capital Accumulation Performance Hit by Defaults



SOURCES: Author's calculations based on National Income Accounts and Demographics data published by Argentina's Instituto Nacional de Estadísticas y Censos.

had proceeded at the same pace it had prior to the 1983 and 2001 defaults, the capital-output ratio in 2009 should have been closer to the 2–2.8 range, that is, higher by a factor of anywhere from 1.4 to 2. The lower limit of this range corresponds to the capital-output ratio observed in Argentina immediately before the 1983 default. The upper limit is the level to which that ratio seems to have converged over time in South Korea's emerging market economy.

Accordingly, output per working-age individual in 2009 should have been greater by a factor of between 1.3 and 1.6—that is, 30–60 percent larger. That would have represented a tremendous improvement in Argentina's standard of living. The sheer magnitude of this lost opportunity suggests that the cost of defaults may have taken the subtle form of the prosperity that never was, hidden behind circumstantially high output growth rates that may have conveyed the false sensation of an imminent catch-up with the income levels of the world's most prosperous nations.

It seems fair to conclude that countries considering a default should make sure that the benefits of that option are at least as large as the costs of the subsequent missed opportunities, gauged perhaps with more sophisticated versions of the capital-output ratio calculation. Even then, the evidence suggests that unless those countries become as lucky as Argentina, the subsequent output growth performance might more resemble the lost decade that followed Argentina's 1983 default than the terms-of-trade-driven expansion after its 2001 default.

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Notes

[1] See, for example, Joseph E. Stiglitz's account of Argentina's default experience in "New Year's Hope Against Hope," *Project Syndicate*, Jan. 2, 2011, available online at www.project-syndicate.org/commentary/stiglitz134.

[2] The capital stock was constructed from investment flows with the perpetual inventory method, with the procedure and data explained in more detail in "Argentina's Lost Decade and the Subsequent Recovery Puzzle," by Finn E. Kydland and Carlos E.J.M. Zarazaga, in *Great Depressions of the Twentieth Century*, Timothy J. Kehoe and Edward C. Prescott, ed., Minneapolis: Federal Reserve Bank of Minneapolis, 2007, pp. 191–216.

[3] See "Transition Dynamics in the Neoclassical Growth Model: The Case of South Korea," by Yongsung Chang and Andreas Hornstein, Federal Reserve Bank of Richmond Working Paper no. 11-04, August 2011.

[4] See "Argentina's Feeble Recovery: Insights from a Real Business Cycle Approach," by Carlos E.J.M. Zarazaga, *Journal of Policy Reform*, vol. 9, no. 3, 2006, pp. 219–34.

[5] A rigorous presentation of this theory can be found in the article "Competitive Equilibria with Limited Enforcement," by Patrick J. Kehoe and Fabrizio Perri, *Journal of Economic Theory*, vol. 119, no. 1, 2004, pp. 184–206.

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