

Comments

José de Gregorio: This is a very interesting paper, an insightful contribution to the research on external adjustment. Most of the existing literature focuses on two issues, namely, current account reversals and currency crises. This paper looks at capital account reversals, or sudden stops according to Calvo's taxonomy, from a new angle. More concretely, this paper analyzes the consequences of sudden stops on growth and examines policy and structural preconditions that may ameliorate the costs of sudden stops. In addition, the ensuing current account reversals that often, but not always, follow a sudden stop are evaluated in terms of export expansion versus import compression.

The paper is full of interesting and thought-provoking evidence. Instead of summarizing it, I discuss the issues and questions that are raised and left open to discussion.

Sudden Stop, Current Account Reversal, or Both?

In principle, the central issue is what triggers a reversal in the current account or in the capital account—in other words, whether a sudden stop of capital inflows leads to a current account adjustment or the other way round. The authors focus on sudden stops that may induce a current account reversal. The paper starts by defining a sudden stop as an episode in which there is a significant decline in the capital account, defined as a contraction that exceeds one standard deviation with respect to its mean and that amounts to at least 5 percent of GDP. A sample of about 3,600 yearly observations yields 313 episodes of sudden stops. In the full sample of sudden stops, only forty-eight (15 percent) did not require current account adjustment.

It is not clear to me what the authors mean by whether the sudden stop did or did not require current account adjustment. In my view, they are generally part of the same phenomenon, but the authors are implicitly

assuming that causality runs from sudden stop to current account contraction. I am not convinced that the definition used in the paper is sufficient to argue that the cause of the adjustment derives from the sudden stop. I would agree that the paper cautiously leaves open the conclusion that current account reversals could be caused by sudden stops, but the focus is ultimately on sudden stops as the key cause of adjustment.

In a flexible exchange rate regime, changes in the capital account must be offset by changes in the current account, and vice versa. Inferring causality sets up an identification problem. Although one can argue that there are additional mechanisms through which it is possible to observe differences in the timing of the evolution of the current account and the capital account, this is not enough. The first, and most obvious, way to unlink the timing of the current and the capital accounts is a change in reserves. This allows the adjustment to the sudden stop to smooth the adjustment of the current account. The second would be to consider only private inflows, with the current account smoothed through official flows such as support from the International Monetary Fund (IMF); this is not the definition considered in the paper, however. Finally, the unlinking could be done through transfers, which could be relevant in small, poor countries. I therefore do not think that a capital account reversal happening at the same time or before a current account adjustment is definite evidence that this is a sudden stop.

An interesting case is the 15 percent of the sample that has a sudden stop without a contemporaneous current account adjustment. I suspect that in many instances this may be a problem of timing. For example, there are two cases in Latin America in which a sharp reversal in the current account came a year later. Argentina experienced a sharp sudden stop in 2001, but the huge 11 percent change in the current account deficit came in 2002. The domestic adjustment is not properly observed when one looks at simultaneous yearly data. Something similar happened in Ecuador. A sudden stop occurred in 2000, but the change in the current account with respect to 2000, which also reached 11 percent of GDP, came in 2001. Both cases could have been classified as “sudden stop that required domestic adjustment” according to the authors’ jargon, although the timing convention leads them to consider these two cases as sudden stops without current account contraction. In none of these cases is it clear which came first from an economic point of view. Perhaps both adjusted

to a severe misalignment. I suspect that official support or outright default often made it possible to accommodate a change in the capital account, thereby postponing the current account reversal.

In the sample of countries without domestic adjustment, the current account deficit increased by almost 5 percent of GDP, on average, in most countries that faced sudden stops. I have no explanation, and this finding requires further research and rationalization.

Overall, current account and capital account reversals are the result of the same phenomenon. The timing depends on the availability of other sources for funding the deficit in the current account. I reiterate, without further discussion, that the paper presents a very interesting finding, which is the increase in the current account deficit in countries that do not present a domestic adjustment.

From an analytical point of view, a country may need to adjust the current account from deficit to surplus for three main reasons. First, from an intertemporal perspective, a transitory terms-of-trade or productivity gain may increase output more than expenditure. Second, the current account deficit may be unsustainable, owing, for example, to a misaligned exchange rate. Third, external causes may reduce capital inflows and precipitate an adjustment. The real exchange rate would depreciate in all three cases, while output would increase in the first case and decrease in the other two. These differences could be used to identify the source of adjustment in different episodes.

Empirical Evidence on Sudden Stops

Having clarified my skepticism on the definition of sudden stops, I now discuss the empirical findings and their interpretation. I focus on a few issues that may complement the interesting results reported in the paper. In particular, the authors persuasively demonstrate the advantages of having a flexible exchange rate regime, having low levels of liability dollarization, and being an open economy as factors that help to reduce the output costs of the sudden stop. This allows the adjustment to concentrate on export expansion rather than import contraction.

A first issue that I would like to explore and encourage the authors to examine closely in subsequent research is the difference between sudden stops with and without domestic adjustment. A binomial model could be set up to distinguish factors that explain the difference in the two samples.

After this first step, one could focus on the sample of countries that went through a current account adjustment, as the paper actually does in most of the empirical sections.

This is the first time I have seen a detailed empirical investigation on adjustment via export expansion versus import compression—and the former is preferred to the latter since it involves lower output costs. But, what is the right indicator for examining the quality of the adjustment? Output and employment are the variables of interest, so I would propose a new measure similar to the sacrifice ratio used to evaluate stabilization policies. A better measure for the efficiency of the adjustment would be the change in the current account per unit of lower output growth; one could then correlate this measure with different policy and structural factors, as well as initial conditions. Possibilities include the following: initial conditions (such as overvaluation, fiscal stance, initial current account, degree of dollarization, and financial depth); structural factors (in particular, openness); and macroeconomic policy responses (including fiscal and monetary policies and the exchange rate regime). This is the route followed by Freund, the IMF, and De Gregorio and Lee, among others.¹

A number of other findings deserve further discussion since they challenge conventional wisdom. At first glance, one is tempted to think that liability dollarization is a proxy for financial crisis, and countries suffering a currency crisis are known to have greater output costs when this crisis also occurs with a banking crisis.² The evidence reported in this paper, however, shows that it is liability dollarization and not the banking crisis that matters for growth performance after a sudden stop. A possible explanation for this finding is that liability dollarization is a better proxy for financial distress and its magnitude than simply a dummy variable for banking crises.

The paper shows that countries that postpone, or avoid, a current account reversal when they face a sudden stop have low output costs. I would thus have expected the initial level of reserves to be an important determinant of the output cost of sudden stops.

Another puzzling result is that the magnitude of the sudden stop does not affect the growth effect. This means that whether the adjustment is 5 percent or 20 percent of GDP does not affect the output costs of the sud-

1. Freund (2000); IMF (2002); De Gregorio and Lee (2003).

2. De Gregorio and Lee (2003).

den stop after controlling for other variables. Perhaps a table with the simple correlation between the dependent variable and each of the independent variables could help to identify whether this and other results can stand up or are influenced by problems of multicollinearity.

Finally, as a central banker I would also like to see the inflationary consequences of sudden stops. It would be useful to analyze inflationary costs in the same way the authors look at output costs in terms of output. Are successful adjusters in terms of output also successful in terms of inflation? Inflation after the sudden stop could be a summary statistic of the quality of pre- and post-macroeconomic policies.

This paper belongs to the rich literature on external adjustment. Its virtue is that it shifts the focus to sudden stops. The authors open interesting new avenues of research and thus raise many issues that are still not convincingly resolved. Overall, however, the authors are very successful in making one think about the interpretation of external adjustment and the role of policies in a coherent and persuasive way.

Ilan Goldfajn: This nice paper by Guidotti, Sturzenegger, and Villar provides evidence of how and why countries cope differently with abrupt and sudden declines in capital flows (or sudden stops).¹ It also demonstrates how differently the world international financial system works from what the profession used to think.

Not a long time ago, economists tended to analyze capital flows as a means of smoothing shocks to current accounts. For example, if an economy suffered a (temporary) negative income shock (say, a large terms-of-trade shock), traditional finance literature would suggest that the current account should worsen and the economy absorb capital inflows to finance this worsening. In this setting, the implicit assumption is that capital flows are available to fulfill this financing role. In effect, one could think of this assumption as assuming a dominance of the current account over the capital account.

This is not what typically occurs, however, especially in emerging markets, where the capital flows available for adjusting to the desired current account path are potentially limited. In these economies, current account

1. The term *sudden stops* was adapted by Rudiger Dornbusch to represent the abrupt changes in net capital inflows that tend to occur in currency crises and collapses (see Dornbusch, Goldfajn, and Valdés, 1995.).

behavior is molded by the availability of capital flows. In times of plenty of access to capital flows, liquidity and borrowing constraints are less binding, and current account deficits are more common. In times of restricted liquidity, certain intertemporal paths are not available to the country, and current accounts have to adjust to capital account restrictions. This is an environment of capital account dominance.

Sudden stops are the extreme events in an environment of capital account dominance. The paper by Guidotti, Sturzenegger, and Villar provides evidence that several economies live in this environment for quite some time. The authors find that sudden stops have been fairly common events since the late 1970s, affecting both small, poor countries and medium-sized economies (measured by income per capita). They also find that sudden stops are not restricted to the crisis-prone economies, but also include countries like Chile, Oman, and Singapore, which rank high on the list of countries experiencing sudden stops. In general, sudden stops occur in 4–8 percent of the broad sample they analyze and may even reach a proportion of one out of seven in peak years.

Sudden stops are thus broad, frequent events. But, one might ask, are they relevant to us? The answer is a definite yes. Sudden stops in net capital inflows are large events that require severe, painful adjustments in the current account, especially if there are no reserves or assistance from an international organization to smooth the adjustment.

The costs of adjustments are high in an environment of capital account dominance. The reason is that goods and labor markets tend to adjust more slowly than capital markets. With sudden stops, the need for rapid adjustments in the current account is maximized, and thus the adjustment costs are even higher.

The paper shows that, indeed, these events are large and costly. The decline in capital flows reaches anywhere from 6 to 20 percent of GDP, with an average of 13 percent. Current account reversals need to be large and fast, too, with current account improving 10 percent on average, mainly in the first year. In sum, the paper makes a good case that sudden stops (and, I would add, an environment of capital account dominance) represent an important phenomenon for investigation.

Why don't countries avoid the consequences of a sudden stop? When a sudden stop occurs, very few options are available to the country. One of them is to use reserves or financial assistance from international organizations. In this case, if the sudden stop is temporary, it should not induce

major changes in the current account. If reserves and assistance are not available in sufficient amounts, the country has no alternative but to adjust the current account, even for temporary shocks, as painful as it may be.

Given that the adjustment may be necessary, it is very important to analyze which countries (and what characteristics) have fared better in the aftermath of a sudden stop. This is the main objective of the paper. As the authors write, “If sudden stops remain a recurrent feature of emerging market economies in years to come, the issue of how to ensure a quick return of growth in the aftermath of a crisis will require attention. Policy recommendations focused on improving such *ex post* performance should go hand in hand with traditional prevention measures designed to avoid the crises.”²

The authors investigate the effect of openness, exchange regime, and liability dollarization on the consequences of a sudden stop. The largest effect comes from the exchange rate variable. A floating exchange regime seems to contribute to a better output performance. This is natural. If the current account needs to change by a large magnitude, the adjustment will not need to rely solely on output contraction if prices are allowed to fall in foreign currency. Depreciation spares the country from further output losses. When current account adjustments are needed, a floating exchange regime contributes from 6 to 8 percentage points (or 4 to 6 percentage points in the first year) toward better output performance.

Policymakers could, in principle, devalue the currency in a fixed exchange regime when faced by a sudden stop. They would need to find the appropriate magnitude and timing of the devaluation, however, to minimize output costs. In addition, credibility and incentive issues (like inducing further liability dollarization) tend to increase the output costs, even if the magnitude and timing of devaluation are chosen properly.

Openness and liability dollarization are also relevant variables for explaining the output costs of sudden stops. Openness has a positive and significant effect in the initial three years, and liability dollarization has a negative and statistically significant effect, although the magnitude reduces the economic significance.³ Overall, the impact of the main vari-

2. The paper does not intend to study an alternative and important question of how to avoid sudden stops in the first place. See Calvo and others (2003).

3. I still have doubts about the proxy used for liability dollarization in the paper (and also in most of the empirical papers on the subject)—namely, foreign liabilities of the banking system over the amount of money. This variable does not measure currency mismatch

ables on output growth is large: the authors estimate that the main East Asian countries could grow, relative to trend, 9.6 percentage points more than the main Latin American economies in the aftermath of a sudden stop.

The paper entices further work. First, the authors have done a good job at evaluating the effect of sudden stops in countries that potentially could avoid current account adjustment (probably through the use of reserves or financial assistance). This is a topic that is worth pursuing. How much reserves are worth accumulating to avoid the consequences of sudden stops? When should reserves be used? Are sudden stops mainly a temporary phenomenon or partially permanent? Second, as the authors mention, it could be interesting to explore the effects of sudden stops (and of the other variables) on consumption and investment. Export growth could sustain output growth as a consequence of currency depreciation, but not necessarily support consumption and investment, especially in the short run. Analyzing the effect on consumption and investment could measure more closely the costs to domestic agents of the sudden decline of capital flows.

in the corporate and household sectors, and it does not even properly measure currency mismatch in the banking system, since the variable does not include either domestic liabilities or domestic assets in foreign currency.

References

- Ades, Alberto, Rumi Masi, and Daniel Tenengauzer. 1998. "GS Watch: A New Framework for Predicting Financial Crises in Emerging Markets." New York: Goldman Sachs, Economic Research Group.
- Alesina, Alberto, and Alexander Wagner. 2003. "Choosing (and Reneging on) Exchange Rate Regimes." Working paper 9809. Cambridge, Mass.: National Bureau of Economic Research.
- Arteta, Carlos. 2003. "Are Financially Dollarized Countries More Prone to Costly Crises?" International finance discussion papers 763. New York: Board of Governors of the Federal Reserve System.
- Calvo, Guillermo A. 1998. "Capital Flows and Capital-Market Crises: The Simple Economics of Sudden Stops." *Journal of Applied Economics* 1(1): 35–54.
- . 2001. "Capital Markets and the Exchange Rate, with Special Reference to the Dollarization Debate in Latin America." *Journal of Money, Credit, and Banking* 33 (May, part 2): 312–34.
- . 2002. "Contagion in Emerging Markets: When Wall Street Is a Carrier." In *Proceedings from the International Economic Association Congress*, vol. 3. Buenos Aires.
- Calvo, Guillermo A., Alejandro Izquierdo, and Luis-Fernando Mejía. 2003. "On the Empirics of Sudden Stops." Working paper. Washington: Inter-American Development Bank.
- Calvo, Guillermo A., and Enrique G. Mendoza. 2000. "Rational Contagion and the Globalization of Securities Markets." *Journal of International Economics* 51(1): 79–113.
- Calvo, Guillermo A., and Carmen M. Reinhart. 2000. "When Capital Flows Come to a Sudden Stop: Consequences and Policy." In *Reforming the International Monetary and Financial System*, edited by Peter B. Kenen and Alexander K. Swoboda. Washington: International Monetary Fund.
- . 2002. "Fear of Floating" *Quarterly Journal of Economics* 117(2): 379–408.
- Calvo, Guillermo A., and Carlos A. Végh. 1999. "Inflation Stabilization and BOP Crises in Developing Countries." In *Handbook of Macroeconomics*, edited by John B. Taylor and Michael Woodford, 1531–614. Amsterdam: North-Holland.
- Caprio, Gerard, and Daniela Klingebiel. 2003. "Episodes of Systemic and Borderline Financial Crises." Working paper. World Bank.
- De Gregorio, José, and Jong-Wha Lee. 2003. "Growth and Adjustment in East Asia and Latin America." Working paper 245. Santiago: Central Bank of Chile.
- Dornbusch, Rudiger, Ilan Goldfajn, and Rodrigo Valdés. 1995. "Currency Crises and Collapses." *Brookings Papers on Economic Activity* 2: 1995, 219–93.
- Edwards, Sebastian. 1996. "The Determinants of the Choice between Fixed and Flexible Exchange-Rate Regimes." Working paper 5756. Cambridge, Mass.: National Bureau of Economic Research.

- . 2002. “Does the Current Account Matter?” In *Preventing Currency Crises in Emerging Markets*, edited by Sebastian Edwards and Jeffrey Frankel. University of Chicago Press.
- . 2003. “Current Account Imbalances: History, Trends and Adjustment Mechanism.” Paper presented as the Mundell-Fleming Lecture at the Fourth Annual IMF Research Conference. International Monetary Fund, Washington, November 6.
- Edwards, Sebastian, and Jeffrey Frankel, eds. 2002. *Preventing Currency Crises in Emerging Markets*. University of Chicago Press.
- Eichengreen, Barry, and Andrew K. Rose. 1999. “The Empirics of Currency and Banking Crises.” *NBER Reporter* (Winter).
- Eichengreen, Barry, Andrew K. Rose, and Charles Wyplosz. 1995a. “Exchange Market Mayhem: The Antecedents and Aftermath of Speculative Attacks.” *Economic Policy* 21 (October): 249–312.
- . 1995b. “Speculative Attacks on Pegged Exchange Rates: An Empirical Exploration with Special Reference to the European Monetary System.” Working paper in applied economic theory 95-04. Federal Reserve Bank of San Francisco.
- . 1996. “Contagious Currency Crises.” Working paper 5681. Cambridge, Mass.: National Bureau of Economic Research.
- Frankel, Jeffrey, and Andrew K. Rose. 1996. “Currency Crashes in Emerging Markets: Empirical Indicators.” Working Paper 5437. Cambridge, Mass.: National Bureau of Economic Research.
- Freund, Caroline. 2000. “Current Account Adjustment in Industrialized Countries.” International finance discussion paper 692. Washington: Board of Governors of the Federal Reserve System.
- Galbraith, John Kenneth. 1977. *The Age of Uncertainty*. Boston: Houghton Mifflin.
- Glick, Reuven, and Michael M. Hutchison. 2001. “Banking and Currency Crises: How Common Are Twins?” In *Financial Crises in Emerging Markets*, edited by Reuven Glick, Ramon Morena, and Mark M. Spiegel. Cambridge University Press.
- Glick, Reuven, and Andrew K. Rose. 1998. “Contagion and Trade: Why Are Currency Crises Regional?” Working paper 6806. Cambridge, Mass.: National Bureau of Economic Research.
- Guidotti, Pablo E. 1999. “On Debt Management and Collective Action Clauses.” In *Reforming the International Monetary and Financial System*, edited by Peter B. Kenen and Alexander K. Swoboda, 265–276. Washington: International Monetary Fund.
- . 2003. “Toward a Liquidity Management Strategy for Emerging Market Economies.” In *Latin American Macroeconomic Reform: The Second Stage*, edited by José A. González and others, 293–323. University of Chicago Press.

- IMF (International Monetary Fund). 1998. "Financial Crises: Characteristics and Indicators of Vulnerability." *World Economic Outlook. Financial Crises: Causes and Indicators*, chap. 4, 74–97. Washington.
- . 2002. *World Economic Outlook*. Washington.
- Kaminsky, Graciela L., and Carmen M. Reinhart. 1999. "The Twin Crises: The Causes of Banking and Balance-of-Payments Problems." *American Economic Review* 89(3): 473–500.
- Levy Yeyati, Eduardo, and Federico Sturzenegger. 2003a. "A de Facto Classification of Exchange Rate Regimes: A Methodological Note." Posted at <http://www.aeaweb.org/aer/contents/> of *American Economic Review* 93(4).
- . 2003b. "To Float or to Fix: Evidence on the Impact of Exchange Rate Regimes." *American Economic Review* 93(4): 1173–93.
- . Forthcoming. "Deeds vs. Words: Classifying Exchange Rate Regimes." *European Economic Review*.
- Milesi-Ferretti, Gian Maria, and Assaf Razin. 1998. "Sharp Reductions in Current Account Deficits: An Empirical Analysis." *European Economic Review* 42: 897–908.
- . 2000. "Current Account Reversals and Currency Crises: Empirical Regularities." In *Currency Crises*, edited by Paul Krugman. University of Chicago Press.