

Sudden Stops

International Macroeconomics

Professor: César Salinas

Teaching Assistant: Francisco Arizola*

“It is not speed that kills, it is the sudden stop.” — Dornbusch, Goldfajn, and Valdés (1995)

A **sudden stop** refers to a sharp and unexpected halt in foreign capital inflows to an economy. Typically triggered by a spike in international borrowing costs or by a collapse in investor confidence, sudden stops are characterized by three hallmark macroeconomic consequences:

- (a) a **reversal in the current account**, from deficit to surplus;
- (b) a **contraction in aggregate demand**, especially tradable goods consumption;
- (c) a **real exchange rate depreciation**, making the domestic economy cheaper relative to the rest of the world.

These features can be captured within the TNT model as an increase in the world interest rate r^* . We now analyze the mechanisms through which such a shock operates.

1. The TNT Model and Sudden Stops

In the TNT framework, a sudden stop is modeled as an unanticipated increase in the world interest rate r^* . This change affects household intertemporal decisions and the relative price of nontradables, ultimately shifting consumption and production allocations across time and sectors.

Tradable consumption. As derived earlier, tradable consumption in period 1 is a decreasing function of the interest rate:

$$C_1^T = C^T(r^*, Q_1^T, Q_2^T).$$

An increase in r^* encourages saving, which reduces current tradable consumption C_1^T as households postpone expenditure to benefit from higher returns in period 2.

* Author of these lecture notes, you can contact me through my Email: fa.arizolab@up.edu.pe

Current account. The current account is given by:

$$CA_1 = Q_1^T - C_1^T.$$

A reduction in C_1^T following a sudden stop leads to an increase in CA_1 , potentially turning a deficit into a surplus. This abrupt shift is referred to as a **current account reversal**.

Relative price of nontradables. Using the market-clearing condition $C_1^N = Q_1^N$ and the optimal demand:

$$C_1^N = \frac{1 - \gamma}{\gamma} \cdot \frac{C_1^T}{p_1},$$

we solve for the equilibrium relative price:

$$p_1 = \frac{1 - \gamma}{\gamma} \cdot \frac{C_1^T}{Q_1^N}.$$

Since C_1^T falls due to the increase in r^* , the relative price p_1 also declines. This decline in the price of nontradables implies a **real exchange rate depreciation**:

$$e_1 = \frac{\phi^*(1, p_1^*)}{\phi(1, p_1)}.$$

Expenditure switching. Nontradables are not internationally traded. Hence, to ensure market clearing, a fall in their demand must be matched by a fall in their relative price. This shifts demand away from tradables (which can be exported) toward cheaper nontradables—a classic *expenditure switching* mechanism.

1.1. The Argentine Sudden Stop of 2001

Argentina's crisis in 2001 offers another textbook example of a sudden stop and illustrates many of the predictions of the TNT model. In 1991, Argentina implemented an exchange-rate-based inflation stabilization plan to put an end to a period of hyperinflation. The plan established a one-to-one parity between the Argentine peso and the U.S. dollar, embedded into law through the *Convertibility Law*. This fixed exchange rate regime successfully brought down inflation and anchored macroeconomic expectations for nearly a decade.

However, in 2001 the country entered a deep macroeconomic and financial crisis. The collapse of confidence in Argentina's ability to repay its external debt culminated in a sovereign default and the abandonment of the currency peg. This triggered a full-blown sudden stop, cutting the economy off from international financial markets.

Between 1994 and 2000, Argentine sovereign bond spreads over U.S. Treasuries hovered around 700 basis points, a level comparable to other emerging markets. However, in the second half of 2001, spreads increased rapidly, reaching over 5,000 basis points by December. The explosion in spreads was specific to Argentina and did not reflect a general deterioration in global financial conditions, indicating a loss of market access specific to Argentina. The increase in borrowing costs effectively shut off capital inflows—a defining feature of a sudden stop.

Current account reversal. Prior to the crisis, Argentina consistently ran current account deficits averaging 3 % of GDP throughout the 1990s. With the sudden stop in 2001, the country was no longer able to finance its external imbalances. In 2002, the current account swung sharply to a surplus of 8 % of GDP. This large and abrupt reversal is exactly the kind of adjustment the TNT model predicts when international credit dries up.

Real exchange rate depreciation. The abandonment of the currency peg led to a massive devaluation of the peso. The nominal exchange rate moved from 1 peso per dollar to 3.5 pesos per dollar in a matter of months. Inflation in Argentina reached 41 % in 2002, while U.S. inflation remained low at 2.5 %. As a result, the peso depreciated in real terms by approximately 154 %. The real exchange rate depreciation made Argentine goods and services significantly cheaper in global terms—again, consistent with the TNT model’s prediction of a fall in the relative price of nontradables.

Output collapse. The consequences for aggregate activity were severe. Real GDP per capita declined by 12.5 % in 2002. Underemployment and unemployment rose dramatically, affecting 35 % of the labor force.

In summary, Argentina’s 2001 crisis illustrates how a sudden stop, driven by country-specific solvency concerns, can lead to a sharp external adjustment, a deep recession, and a large real depreciation. These are precisely the dynamics predicted by the TNT model under a rise in the interest rate or the disappearance of external credit access.

1.2. Sudden Stops Beyond Emerging Markets: The Case of Iceland

Sudden stops are not exclusive to emerging economies. The global financial crisis of 2007–2009 led to sudden stops in several highly indebted high- and middle-income countries in Europe. We now analyze the case of Iceland, whose experience illustrates all the key features of a sudden stop within the TNT framework.

Between 2000 and 2008, Iceland ran persistent current account deficits, accumulating external debt exceeding 50 % of GDP. At the center of the crisis was the banking sector: on the eve of the crisis, the balance sheets of Iceland’s main banks were more than 10 times GDP.

In September 2008, global financial turmoil triggered a sudden increase in Iceland’s credit default swap (CDS) spreads:

- September 1, 2008: CDS = 200 basis points.
- Mid-October 2008: CDS > 1400 basis points.

This signaled a massive increase in perceived default risk and effectively cut Iceland off from international capital markets.

Current account reversal. The current account swung sharply:

$$2008: CA/GDP = -17\%, \quad 2009: CA/GDP = +8\%.$$

This mirrors the TNT prediction that a contraction in tradable absorption leads to improved external balances.

Real exchange rate depreciation. Between January 2008 and January 2009, the real exchange rate (krona–euro) depreciated by 45 %, making Iceland significantly cheaper relative to the eurozone. This depreciation helped redirect resources toward tradable production.

Output contraction. Real GDP fell substantially:

$$2005\text{--}2007: \text{GDP growth} = 5\% \text{ per year}, \quad 2008\text{--}2011: \text{GDP growth} = -2\% \text{ per year}.$$

The sudden stop caused a drop in demand and income consistent with the TNT framework.

2. Concluding Remarks on Sudden Stops

A sudden stop is fundamentally a liquidity crisis, not necessarily a solvency problem. The abrupt rise in external borrowing costs leads to:

- A contraction in current consumption (especially tradables).
- A current account reversal through expenditure compression.
- A depreciation of the real exchange rate due to falling nontradable prices.

The TNT model provides a parsimonious yet powerful framework to understand these dynamics. Real-world episodes, such as Iceland 2008 or Argentina 2001, validate the predictions and emphasize the macroeconomic importance of sudden stops for both emerging and advanced economies.