

# ERSA Research Brief

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## The J-Curve Phenomenon: Evidence from Commodity Trade Between South Africa and the United States

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Across the world, efforts by countries to gain international competitiveness and boost export levels has generated renewed interest on the response of trade balances to exchange rate devaluations or depreciations. The trade literature posits that the existence of adjustment lags delays improvements in a country's trade balance following a currency devaluation or depreciation. Instead, such currency devaluations or depreciations tend to worsen trade balance in the short-run before realization of lags cause an improvement in the long-run. The different patterns of short and long-run responses of trade balance to currency devaluation or depreciation describes the J-curve hypothesis.

Almost all previous research examining the J-curve phenomenon in South Africa's balance with its trading partners have either utilised aggregate trade flows between South Africa and the rest of the world or bilateral, aggregate trade flows between South Africa and its major trading partners. The very limited number of studies that have employed disaggregated trade flows have only considered manufacturing, mining and agricultural sectors in their analysis of the J-curve phenomenon. In this paper, we use the bounds testing approach to cointegration to re-examine the J-curve hypothesis in the context of disaggregated data of bilateral trade flows of 19 industries that trade between South Africa and one of its key trading partners – the US.

Under the Harmonized System (HS) for recording merchandise trade statistics, the 19 industries represent those industries for which we were able to compile continuous quarterly trade (exports and imports) data over the period 1991:Q4–2016Q3. Combined, these 19 industries account for over 98% of trade between both countries.

The empirical results show that J-curve effects hold in 8 industries that account for 16% of total trade between South Africa and the US. Favourable long-run effects of currency depreciation was observed in the trade balance model for trade in machinery which accounts for over 22% of bilateral trade flows between the two countries. In addition, income in South Africa and the US is found to have significant long-run effects, indicating that growth in both countries is an important determinant of bilateral trade flows. Growth in US income is found to have significant and positive long-run effect on the trade balance of 11 cases including three of the five largest industries - precious metals, iron and steel and machinery, that collectively account for almost half of all bilateral trade flows between both countries. On the other hand, economic growth in South Africa will tend to raise levels of imports by industries that account for 44% of South Africa – US trade flows.

An important implication that can be derived from our empirical results is the varied responses of aggregated data and disaggregated bilateral trade flow data to currency depreciation. Following realisation of adjustment lags, industries that account for a relatively small share (16%) of total South Africa–US bilateral trade, benefit from a weakening of the rand against the US dollar. Hence, efforts to boost trade balance via improvements in industry-specific exports will require broader strategies beyond currency depreciation. Such strategies could include building competitiveness, particularly of small and medium exporting firms, through initiatives that aim to foster adoption of new technology and diversification towards products that require value-added inputs.