Impact of Oil Prices on the Trade Balance

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Brazilian imports of oil and its by-products, net of exports, dropped significantly over the course of the last two decades, thanks to the increase in oil domestic production and the substitution of consumption of by-products for alternative sources of energy. As a consequence, the trade balance became less sensitive to oil prices swings. Based on data for 2003, it is estimated that a hypothetical increase of 20% in international oil prices would reduce the Brazilian trade balance surplus by US$0.4 billion.

In 2003, Brazilian net imports of oil and its by-products totaled US$2.1 billion, slightly above 0.4% of GDP. As shown in Graph 1, this was the lowest deficit in the oil trade balance in the last 25 years, not only in nominal terms (left scale) but also as a share of the GDP (right scale). In comparative terms, net imports of oil and its by-products stood close to US$10 billion or 4% of the GDP in the beginning of the 80s.

Graph 1

Net Imports of Oil and Its By-Products
(US$ billion and % of the GDP)

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substantial contraction in net imports in the first half of the 80s, caused by the adjustment in demand following the second OPEC oil shock. From 1985 to 1997, the net volume of imports increased moderately. Since then, there is a new downward trend in net imports, as intense as the one verified in the early 80s.

Graph 2
Net Imports of Oil and Its By-Products at 2003 Prices
(US$ billion)

The main reason for the gradual reduction in the volume of net imports is the increase in the domestic oil production, from 200 thousand barrels/day in early 80s to more than 1,500 thousand barrels/day, on average, in 2003. As shown in Graph 3, this movement was particularly sharp in the first half of the 80s – when oil output grew at annual rates higher than 20% - and after 1997. These two periods correspond exactly to those when the volume of net imports dropped significantly, as marked in Graph 2.

With respect to demand, the final consumption of oil by-products fluctuated over the last 25 years due not only to economic cycles, but also to the behavior of relative prices for consumers and the policy mechanisms to foster new sources of energy (for instance, the fuel alcohol). Limiting the analysis to recent years, the demand for oil by-products has been continuously decreasing since 1997, a trend strongly influenced by the price factor – gasoline prices, for example, increased 180% between 1997 and 2003, compared to a 63% change in the IPCA inflation.
Graph 3

*Oil Production and By-Products Consumption*
*(thousands of barrels/day)*

Graph 4 shows the estimates for the impact, on the trade balance-to-GDP ratio, of a hypothetical increase of 20% in oil prices. This increase roughly corresponds to the current price of oil compared to the effective average price of imported oil in 2003 (US$30.6/barrel, according to the National Petroleum Agency - ANP). The Brazilian economy is currently much more prepared to face an increase of this magnitude in oil prices than in the past, a clear consequence of the increase in the domestic production and the decrease of net imported volume. In the beginning of the 80s, the cost of a 20% increase in oil prices to the trade balance result – i.e., the additional transfer of foreign funds to net exporters of oil – would correspond to approximately 0.8% of the GDP. In 2003, this impact decreased to less than 0.1% of the GDP, or US$0.4 billion.
As a conclusion, the impact of an increase in oil prices on the trade balance result should not be overestimated. Extrapolating to Brazil of 2004 the same effects observed in the second oil crisis in early 80s would be a mistake. The Brazilian economy presents currently a low level of dependence in relation to oil imports, as opposed to what occurred in the past. As a consequence, oil and its by-products became relatively less important in the Brazilian external trade. In practice, the effect of an increase in oil prices on the trade balance result is smaller than the effect of a similar decrease in the international price of soy.