Imported inputs and domestic product growth in India

Pinelopi Koujianou Goldberg Amit Khandelwal Nina Pavcnik

1 December 2008

One quarter of India's manufacturing output growth during the 1990s stemmed from products that were not manufactured prior to the reforms. This column shows that this expansion of new products was driven in large part by access of Indian firms to previously unavailable imported inputs. Access to new imported intermediates therefore played an important role in the overall growth of the Indian economy.

Public perception on globalisation often focuses on the costs domestic industries endure as they lose protection from foreign competition through lost revenue, lower wages, and lost jobs. What is often overlooked is that domestic firms also can, and do, benefit from lower tariffs through access to cheaper, more sophisticated, and new types of intermediate inputs from abroad (Rivera-Batiz & Romer 1991; Romer 1994).

Our recent research shows that the expansion in the number of products produced by Indian manufacturing firms has been in part a direct consequence of the large-scale trade liberalisation that India implemented in the early 1990s (Goldberg, Khandelwal, Pavcnik, Topalova 2008a).

Indian trade liberalisation

Twenty years ago, Indian firms operated in an environment with substantial government intervention. Draconian labour laws prevented firms above a certain size from releasing employees. The infamous "license raj" required firms to obtain official permission to expand into new product lines and upgrade capacity. While Indian firms enjoyed protection from foreign competition due to restrictions on FDI and a wall of tariff barriers, they remained further constrained by a byzantine system of import restrictions on intermediate and capital goods. Importing certain intermediate goods was outright banned under India's import substitution strategy, while imports of other intermediates were either restricted by import licenses. India's average tariff rate on intermediate goods (also known as "input tariffs") in 1985 was nearly 150%,

substantially higher than other economies at similar levels of economic development at the time, including the Philippines (22%), Pakistan (75%) and China (79%) (Economist, 1991).

In August 1991, the Gulf War accelerated a severe balance-of-payments crisis. Then finance minister (and current Prime Minister) Manmohan Singh turned to the IMF for support and embarked on a dramatic liberalisation of the economy. An important component of the reform was to abandon India's restrictive trade policies that had shielded firms from product market competition and prevented them from freely importing critical imports from abroad. Between 1991 and 1997, India slashed the average tariff rate from 90% to 30%, which contributed to imports of intermediate goods more than doubling between 1987 and 2000.

New imports and new products

Simply looking at the overall imports naively misses an important element of the reform. Two-thirds of this growth in intermediate imports occurred in products that India had not previously imported. Many of these new imports in the mid 1990s occurred in detailed product categories within machinery, mechanical appliances, and computers. Thus, the tariff reductions not only lowered prices and increased volumes of existing imports but also enabled firms to gain access to new types of intermediate products from the outside world.

The liberalisation dismantled many (but not all) of the economic shackles that had constrained Indian firms since Independence. The economy broke from its characteristically low growth rate, the so-called "Hindu" rate of growth, to achieve per capita GDP growth of 6% per year during the 1990s. Our analysis of medium and large Indian manufacturing firms suggests that manufacturing output increased by 200% between 1989-2003 (Goldberg, Khandelwal, Pavcnik, Topalova 2008b). Digging a bit deeper into the sources of this gain, we discovered that nearly a quarter of this manufacturing growth was driven by the introduction of new domestic products into the Indian economy. So, similar to the analysis of the intermediate imports, new products were an important component to the growth in India's manufacturing output during this reform period.

Our research demonstrates that the increase in firms' product scope, or number of products manufactured by the firm, can be explained, in part, by firms' access to new types of intermediate imports made possible by the 1991 trade liberalisation. Economists have longed hypothesised that economies could grow through this "variety in, variety out" model.

Here's how this model works.

When an economy liberalises its tariff regime, the gains from trade are captured through a lower import price index. The conventional story is that prices of goods previously imported fall as tariffs decline. However, Feenstra (1994) pointed out that the import price index can also fall because trade increases product variety and consumers (in our case firms that demand imported inputs) value different types of varieties. This new imported variety channel turns out to be quite important for India. Accounting for new imported varieties lowers the import price index by an additional 5% per year relative to conventional gains through lower prices of existing imports.

The lower price index of intermediate imports represents a boon for domestic firms since their manufacturing costs fall. Firms can use their cost savings to cover the fixed costs of entering new product lines, such as purchasing new equipment. Moreover, the access to higher quality intermediate inputs and capital equipment relaxes technological constraints. In other words, access to cheaper intermediate imports boosts a firm's productivity, enabling them to expand into new product lines. This mechanism leads to the "variety in, variety out" model of economic growth.

Just how important is access to new imported intermediates for the development of new goods? About 30% of the growth in new products is attributable to lower tariffs on intermediate imports. We decompose the sources of this growth into gains from cheaper existing imports and new intermediate imports. Our results indicate that firms' access to new varieties in the source of the growth in firms' increase in product scope: more varieties were manufactured ("variety out") because more (intermediate) varieties were allowed to enter into the economy ("variety in").

Conclusions

One quarter of India's manufacturing output growth during the 1990s came in products that were not manufactured prior to the reforms. And these new goods were a direct consequence of new imported intermediates in the economy. Access to imported intermediates therefore played an important role in the overall growth of the Indian economy.

The importance of access to foreign intermediate and capital goods for growth is likely not unique to India. This point was underscored by a recent visit to the Coca-Cola bottling factory outside downtown Shanghai, China. Coca-Cola's (virtually) automated bottling factory relies exclusively on German and Japanese machinery to maintain Coca-Cola's renowned quality. This machinery is also flexible enough to allow the plant to switch product types (from Coke to Sprite) quickly and efficiently. So, despite China's emergence of a manufacturing powerhouse that has the ability to produce everything from cotton shirts to hydraulic turbines, Coca-Cola still relies on imported capital

equipment from abroad for its production.

Indeed, more than half of China's exports today are processed exports. Firms operating in China assemble final products from intermediate inputs that were imported, often from nearby neighbouring East Asian economies. A laptop from China can therefore be seen as a box that simply contains thousands of subcomponents originally manufactured in other countries. Thus, an important policy implication that emerges from these anecdotes and recent research suggests that importing may be crucial for spurring domestic production and exporting.

On a more macro level, recent work by Estevadeordal and Taylor (2008) also emphasises the importance of imported intermediate and capital goods for differences in growth across countries. Using aggregate data for over 70 countries, they show that trade reforms implemented by countries during the past 30 years boosted GDP growth mainly through lower tariffs on intermediate and capital goods.

Given the current crisis, policy makers may be inclined to raise tariffs to weaken product market competition and combat downturns in domestic output. Our results point to an additional gain from trade that would be cut off by increased protectionism.

References

Economist (1991). "CAGED: Plain tales of the license raj." May 4 Issue.

Estevadeordal, A. and A. Taylor (2008). "Is the Washington Consensus Dead? Growth, Openness, and the Great Liberalization, 1970s and 2000s," NBER Working Paper 14264.

Feenstra, R.C. (1994). "New Product Varieties and the Measurement of International Prices". *American Economic Review,* 84(1): 157-177.

Goldberg, P.K., A. Khandelwal, N. Pavcnik and P. Topalova (2008a). "Imported Intermediate Inputs and Domestic Product Growth: Evidence from India," NBER Working Paper No. 14416.

Goldberg, P.K., A. Khandelwal, N. Pavcnik and P. Topalova (2008b). "Multi-product Firms and Product Turnover in the Developing World: Evidence from India," NBER Working Paper No. 14127.

Rivera-Batiz, L. and P. Romer (1991). "Economic Integration and Endogenous Growth". *Quarterly Journal of Economics*, pp. 531-555.

Romer, P. (1994). "New Goods, Old Theory, and the Welfare Costs of Trade Restrictions," *Journal of Development Economics,* 43, pp. 5-38.

Topics: International trade

Tags: India, imports, intermediate goods

Comments