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Managing Openness and Volatility: The Role of Export Diversification

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As developing countries look to embrace an outward-oriented growth strategy, some may be concerned about the possibility that increased openness will be accompanied by increased volatility. However, although a more open economy may face increased volatility in its terms of trade, openness confers diversification benefits. In this note, we argue that export diversification is a key mitigating factor for the total effect of openness on volatility. More specifically, we show that most developing countries fall on the “good” side of a diversification threshold, where they are likely to experience less volatility as they pursue a strategy of greater openness.

Outward-oriented growth can have many important benefits for developing countries. Access to foreign technology and high-quality intermediate inputs enables productivity upgrading. The pro-competitive effects of openness can shrink margins, improve quality, and provide consumers with access to a wider range of goods at lower prices. There are also the traditional gains from trade: specialization by comparative advantage enables a country to allocate scarce economic resources more efficiently.

Like any development strategy, outward orientation also comes with a certain number of risks that policy makers need to manage. One of the most important risks is volatility. By opening itself to the benefits of international trade, a country also makes itself more sensitive to demand shocks from overseas. Trade becomes one way in which economic problems in one country can propagate around the world and, in particular, from the major import markets of the North to Southern producers. At no time has this mechanism been more relevant than now, in the wake of the global financial crisis and the sharpest trade contraction in recorded history.

Does the potential for increased volatility mean that countries should rethink their outward-oriented growth strategies? This note argues that it is rather a question of risk management. Policy makers need to identify and implement strategies for managing the risks that come with the benefits of openness. One way of doing so is through export diversification.

What Are the Links between Outward Orientation and Volatility?

A number of distinct economic mechanisms are at play in the relationship between outward orientation and volatility. Some are suggestive of a positive association, but others tend to work in the opposite direction. The overall effect is ambiguous, and needs to be identified empirically.

The first important mechanism is transmission of terms-of-trade volatility to output. As export earnings become a more important source of national income, the terms of trade can directly affect output and growth in a major way. Falling demand overseas not only reduces export shipments

and harms producer revenues, but also can lead to price falls and worsening terms of trade.

A second mechanism works in the opposite direction. As a country's export sector starts to operate more closely in tune with overseas market conditions, it necessarily becomes less strongly correlated with home market conditions. Because demand shocks at home and overseas are only imperfectly correlated, this force tends to reduce overall volatility in output.

The third mechanism is international diversification: outward orientation means that a country is more likely to export more products to more markets. A country's exports can be thought of as akin to an investment portfolio. Exporting one product to one foreign market is a very risky endeavor because the exporting country is completely dependent on demand conditions in that one importing country. Exporting multiple products to a range of foreign markets reduces this risk through a diversification effect. Because demand shocks usually are not perfectly correlated among products and foreign markets, there is scope for positive shocks in some areas to offset—at least in part—negative shocks in others. Diversification is like a kind of insurance: it offers a way of “buying” the benefits of openness while managing the downside risks. Of course, diversification does not allow hedging in the event of a global crisis.

The final mechanism relates to the traditional gains from trade, which operate through specialization by comparative advantage. There is a tension between international diversification from outward orientation and the specialization that trade induces. Evidence suggests that specialization does not dominate until countries are well into the high-income group.

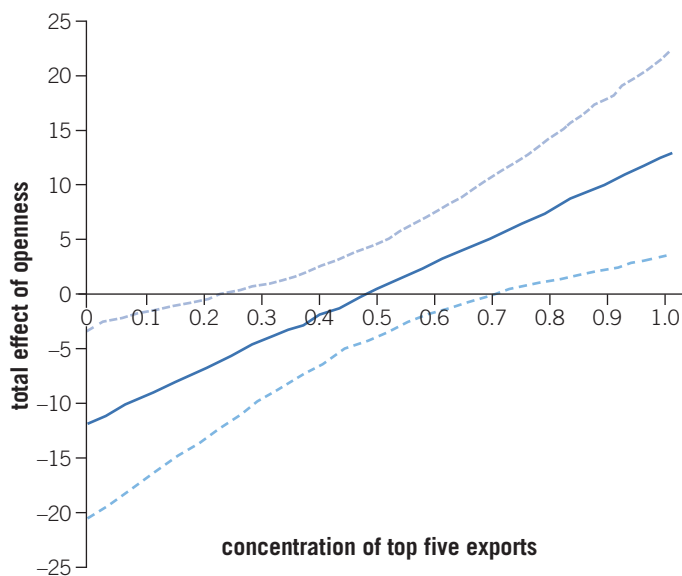
Export Diversification Weakens the Volatility Effects of Openness

This note provides new evidence on the links between outward orientation and growth volatility. The innovation of the work presented here (based on Haddad, Lim, and Saborowski 2010) is that it examines an important mediating factor in the relationship between openness and volatility: export diversification.

Diversification is a way of managing the risks associated with outward orientation. Assuming that the other mechanisms result in a predominantly positive relationship between openness and volatility, it should still be true that the relationship is weaker—and may even become negative—in more diversified economies.

An empirical model using data for 77 developing and developed countries over the period 1976–2005 lends some support to this contention. Ignoring all other factors, there is some evidence of a positive association between openness and growth volatility, and a negative one between export product diversification and volatility.

Figure 1. Relationship between Openness and Growth Volatility for Different Five-Product Export Shares



Source: Authors' calculations.

Note: Presented here are shares of the top five exports in the total export bundle. A higher export share indicates a higher degree of concentration, and thus a lower degree of diversification.

The primary point of interest, however, lies in the interaction between these two forces. The model strongly suggests that it is negative: a higher level of product diversification weakens the link between openness and growth volatility and allows it to become negative for a majority of countries in our sample. Export diversification acts as a stabilizing force, and can indeed be an effective way to manage the risks associated with outward orientation.

More outward-oriented economies are more stable, so long as they are relatively diversified. Figure 1 shows the overall effect of openness on growth volatility (vertical axis) for different levels of export concentration (horizontal axis). The far-left-hand corner of the graph shows that for countries with a relatively high level of diversification, the net effect of openness is negative. Between five-product export concentration ratios of about 0.30 and 0.65, there is no statistically significant association between openness and volatility. The link only becomes positive for countries with relatively concentrated export bundles (to the right of the intersection between the horizontal axis and the lower dashed line in the figure).

Most Countries Do Not Experience Significantly More Volatility from Outward Orientation

There is a turning point in the relationship between openness and growth volatility: countries that are relatively diversified

experience either less volatility as they become more open, or no effect at all; countries with relatively concentrated export bundles, however, tend to experience more volatility. Where does the turning point lie? Which countries are on the “wrong side” of it, in the sense of experiencing a positive association between openness and growth volatility?

Figure 2 shows that the majority of the 77 developing and developed countries in this sample fall on the “good side” of the diversification threshold: openness either has no significant effect on growth volatility or has a negative one. Two groups of countries are in the opposite situation, in that their export bundles are so concentrated that additional outward orientation leads to greater volatility. The first group comprises resource-dependent economies in Latin America and the Caribbean and in Sub-Saharan Africa. The second group is closely related: oil-exporting countries. Even Norway, with one of the highest per capita incomes in the world, tends to become more volatile as it becomes more open, because of its dependence on oil exports.

Moving Forward on Risk Management through Export Diversification

How can countries use export diversification to help maximize the cost-benefit ratio of outward-oriented development? The econometric model used suggests one important part of the answer. The evidence in favor of export product diversification acting as an effective stabilizer is noticeably more consistent than that for export market diversification. This finding suggests that developing-country policy makers should emphasize measures that help broaden their countries’ manufacturing base and expand the range of exportable products.

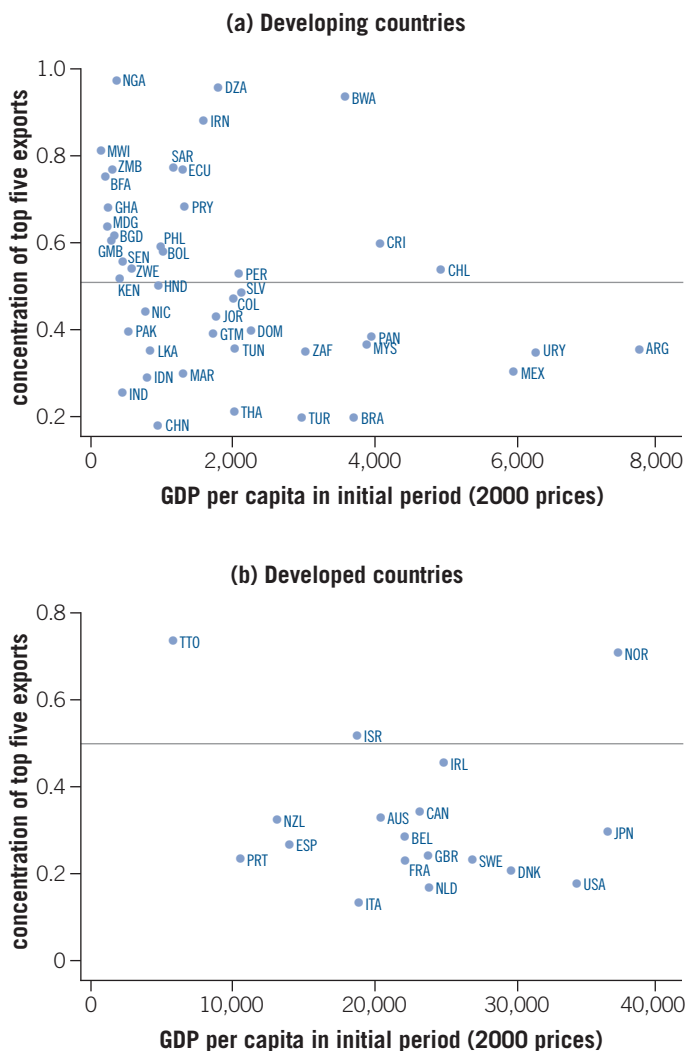
Progress on export diversification clearly takes time, because it requires major private sector investment as well as effective government action to put in place a strong enabling environment. Nonetheless, a number of developing countries have successfully moved forward on export diversification in recent years. Figure 3 shows some examples of countries that succeeded in moving from one side of the export diversification threshold to the other over the 1981–2005 period. They are from diverse regions, such as Latin America and the Caribbean, the Middle East and North Africa, and Sub-Saharan Africa. In all cases, these countries are now sufficiently diversified that additional outward orientation is unlikely to lead to higher growth volatility.

There is now an emerging body of evidence on the types of policies that can be used to promote export product diversification. These policies can assist economies in moving from one side of the threshold to the other, as for the examples in the previous paragraph.

Improving market access abroad is obviously key: it is difficult to export more products to a wider range of markets

if foreign consumers are protected by high levels of tariff and nontariff protection. Locking in better and more secure market access through conclusion of the Doha Round, as

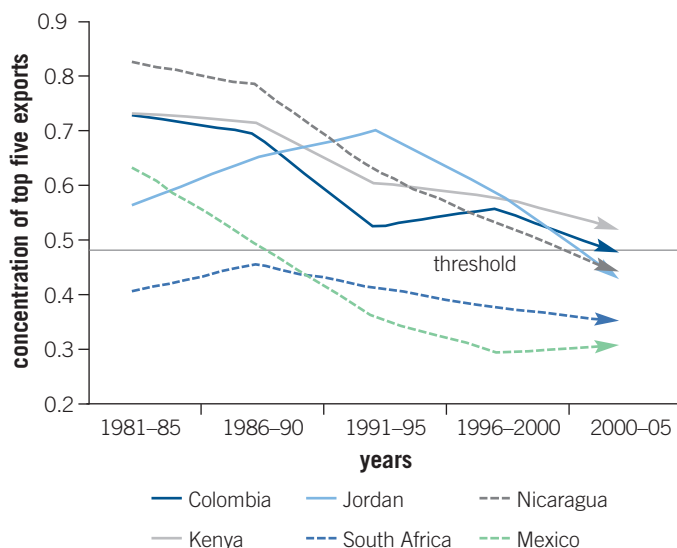
Figure 2. Volatility Has No Significant Effect on Growth for Most Developing Countries



Source: Authors’ calculations.

Note: The figure presents the five-product export shares versus GDP per capita. In each chart, the grey line indicates the “turning point” of the effect of openness on volatility. ARG = Argentina; AUS = Australia; BEL = Belgium; BFA = Burkina Faso; BGD = Bangladesh; BOL = Bolivia; BRA = Brazil; BWA = Botswana; CAN = Canada; CHL = Chile; CHN = China; COL = Colombia; CRI = Costa Rica; DNK = Denmark; DOM = Dominican Republic; DZA = Algeria; ECU = Ecuador; ESP = Spain; FRA = France; GBR = United Kingdom; GHA = Ghana; GMB = Gambia; GTM = Guatemala; HND = Honduras; IDN = Indonesia; IND = India; IRL = Ireland; IRN = Iran, Islamic Rep.; ISR = Israel; ITA = Italy; JOR = Jordan; JPN = Japan; KEN = Kenya; LKA = Sri Lanka; MAR = Morocco; MDG = Madagascar; MEX = Mexico; MWI = Malawi; MYS = Malaysia; NGA = Nigeria; NIC = Nicaragua; NLD = Netherlands; NOR = Norway; NZL = New Zealand; PAK = Pakistan; PAN = Panama; PER = Peru; PHL = Philippines; PRT = Portugal; PRY = Paraguay; SAR = Syrian Arab Republic; SEN = Senegal; SLV = El Salvador; SWE = Sweden; THA = Thailand; TTO = Trinidad and Tobago; TUN = Tunisia; TUR = Turkey; URY = Uruguay; USA = United States; ZAF = South Africa; ZMB = Zambia; ZWE = Zimbabwe.

Figure 3. Developing Countries That Succeeded at Diversifying Exports over a Short Period of Time



Source: Authors' calculations.

Note: The figure presents the evolution over time of the concentration of the top five exports in selected countries, 1981–2005. A larger export share of the top five exports indicates a higher degree of concentration, and thus a lower degree of diversification.

well as appropriate regional and preferential liberalization, can be an important way to move forward.

There are also a number of steps that governments can take domestically to help the private sector diversify its export base. Rather than protecting domestic producers with “infant-industry” tariffs—a classic inward-oriented strategy—

policy makers can remove barriers to domestic market entry, and thereby encourage innovation and development of new markets by companies at home. There is also strong evidence that better trade facilitation (that is, reducing the fixed and variable costs of moving goods across borders) can be highly effective in promoting export diversification. Focusing on removal of red tape affecting exports and imports, and developing trade-related infrastructure and services sectors, can make a major contribution to diversifying exports and helping manage outward orientation.

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Note

1. Editorial assistance for this report was provided by Benjamin Shepherd.

Reference

Haddad, Mona, Jamus Jerome Lim, and Christian Saborowski. 2010. “Trade Openness Reduces Growth Volatility When Countries Are Well Diversified.” Policy Research Working Paper 5222, World Bank, Washington, DC.