

## Export Competitiveness

### Why Domestic Market Competition Matters

**This review of the empirical literature shows that industries with more intense domestic competition will export more. Competition law enforcement can be traced to export performance and is complementary to trade reforms. Pro-competition market regulation that reduces restrictions and promotes competition — where it is viable — is an important determinant for trade. The elimination of barriers to entry and rivalry and a level playing field in upstream sectors contribute to export competitiveness in downstream manufacturing sectors. In some sectors, effective competition policy can directly lower trade costs.**

*The adoption of competition policy is in many ways a natural complement to the reduction of trade, investment and services barriers.*

— World Trade Organization, 2011

Trade and competition are inextricably linked. As markets integrate, forming global value chains, and as trade patterns reflect more sophisticated production structures, countries' success in international markets increasingly benefits from well-functioning competitive domestic markets. This has been evidenced in trade agreements. In 2010, 30 percent of preferential trade agreements included provisions related to competition policy, as well as sector-specific provisions with pro-competitive effects on domestic markets.<sup>2</sup>

This review presents study findings regarding the impact of domestic market competition on trade performance in general, and on exports

in particular. Given the complexity of the relationship between trade and domestic competition, the selection reviewed is narrowed to academic studies analyzing linkages. Most of this empirical literature addresses one of these three questions: (i) What is the impact of the intensity of domestic competition on import and export growth? (ii) What is the impact of competition policy on import and export growth? (iii) What is the impact of pro-competition reforms on firms' export competitiveness in downstream sectors?<sup>3</sup>

#### **Domestic competition and export performance**

Empirical evidence reveals that industries with less market concentration, more market share instability, and more perceived competition export more. This suggests that firms that are exposed to more competition in domestic markets are more likely to succeed in international

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markets (See box 1). Indeed, by gaining market share at home and abroad, such firms contribute to an economy's export growth.

Some studies find that domestic markets with several equally sized firms rather than a few large ones tend to exhibit better export performance. Hollis (2003) compares 82 manufacturing industries in seven countries, and finds that relatively higher domestic concentration is associated with a smaller domestic share in world output and fewer net exports. Clougherty and Zhang (2008) review 433 specific airline routes between 1987 and 1992, as well as each airline's number of competitors in its home market and share of passengers on that route. They find that fewer domestic competitors lead to a decrease in an airline's market share on international routes. The number of Canadian carriers dropped from

five to two between 1989 and 1991. Based on their estimation results, this reduction in domestic competition triggered an annual loss in air transport services exports of \$6.5 million.

Kim and Marion (1997) find similar evidence for a positive relationship between domestic rivalry and export performance from the U.S. food manufacturing industries. The self-reported number of domestic competitors was also found to explain export intensity in six major emerging economies (the Arab Republic of Egypt, Hungary, India, Poland, South Africa, and Vietnam), as shown in Estrin and others (2008).

However, in itself, a large market share is not necessarily related to lower export performance (see an early review by Morgan 1999; and Iyer 2010). Whereas Zhao and Zou (2002)

#### Box Related findings about competition in the literature on trade and productivity

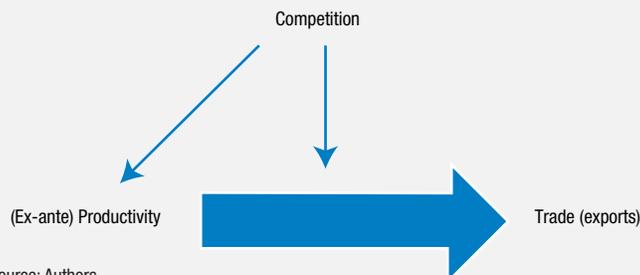
The trade literature finds a consistent stylized fact that the most productive firms of an economy are engaged in export activity. Causality could run both ways. First, firms enter the export market because they already have higher productivity levels—and often higher growth rates of productivity—before they start exporting. Second, firms become more productive as a result of exporting to other markets because of knowledge spillovers and foreign competition.

Empirical evidence has been found for both theories. However, literature reviews conclude that the first effect—the “self-selection” effect—dominates the second “learning-by-doing” effect (Wagner 2012). Greenaway and Kneller (2007) and Wagner (2007) find that firms are more productive before they start exporting compared to those that will not export. Furthermore, once firms start exporting, they typically continue exporting.

Seminal models by Melitz (2003) and Bernard and others (2003) have introduced effective competition in domestic markets as the mechanism through which more productive firms enter the markets, and through which the most productive competitors win additional market share. This contributes to an increase in aggregate productivity levels and higher exports.

Finally, the empirical literature shows that domestic competition is also an important driver of firm-level productivity—even before firms start exporting and importing (see figure below).<sup>a</sup>

#### Competition Drives Exports through Productivity



Source: Authors.

Sources: Wagner (2007, 2012), Greenway and Kneller (2007), Melitz (2003), Bernard and others (2008).

a. See Syverson (2011) for the literature review and Kitzzmuller and Licetti (2013) for literature from developing economies.

conclude that firms are less likely to engage in export activity among the 1,700 highly-concentrated Chinese manufacturing and service firms they surveyed, Guan and Ma (2003) find that among 213 Chinese industrial firms, a firm's individual domestic market share is not a good predictor of export performance. Moreover, markets with larger *variability* in market structure tend to export more.

In Japan, Ito and Pucik (1993) find that industry's largest companies—the market “leaders”—have lower export ratios than market followers. Sakakibara and Porter (2001) further measure the intensity of rivalry with market-share *instability*. They demonstrate that higher annual percentage *changes in market share* of the largest firms between 1973 and 1990 (as an indication of high competitive pressures) is significantly associated with higher world export shares of that industry in the early 1990s.

In short, the more competition firms perceive, the more they export. A study from Vietnam (Hiep, Nishijima 2009) builds on the World Bank Investment Climate Survey. Some 1,150 firms reported the degree of perceived domestic competition. The empirical results show that firms that reported facing some or intense competition, as opposed to no competition, have a higher share of direct exports in total sales.

### **Competition policy and trade**

The limited number of empirical studies about competition law enforcement and trade suggest that a country's export performance benefits from antitrust policy — in particular in combination with trade reforms. Moreover, the ample quantitative evidence regarding pro-competition market regulation reveals a sizeable positive impact on exports and imports. This points to the role of competition policy in driving individual firm productivity, as well as in ensuring efficiency-enhancing resources and market share reallocation toward more productive firms.

Enforcement of competition law aims at ensuring a market structure conducive to competition. It prevents and sanctions anticompetitive agreements among competitors. Mitschke

(2008) summarizes two theories with respect to the effect of competition law enforcement on international competitiveness: (i) a lenient merger control regime may allow for more concentrated market structures to achieve productive efficiency; and (ii) merger control and anti-cartel enforcement may safeguard competitive behavior and drive productivity and innovation, thereby achieving greater competitiveness.<sup>4</sup> A study in 1990 by Clark, Creswell, and Kaserman suggests that merger enforcement dampens exports, as it may unduly prevent efficiency-enhancing investments and resource allocations. By contrast, price-fixing enforcement has a positive effect on export shares. However, recent empirical evidence for either of these theories is scarce.

One study using data from 11 Organisation for Economic Co-operation and Development (OECD) countries between 1980 and 2003 shows that the introduction of competition law is significantly associated with growth in manufacturing exports (Babool 2007). In the case of Tanzania, Kahyarara (2004) presents results that suggest the introduction of competition policy in 1994 was associated with growth in exports of Tanzanian firms in the manufacturing sector. Furthermore, the common perception that Japan's high level of export competitiveness rests on weak antitrust enforcement, especially with respect to national champions, is debunked by the results from Sakakibara and Porter (2001) noted earlier.

Some studies also show that the introduction of competition law is an effective, and even necessary complement to pro-trade policies. Such results are in line with the theory that import competition induced by pro-trade policies, by itself, does not effectively discipline dominant firms in non-tradable sectors or sectors with natural monopolies. It also does not prevent anti-competitive firm behavior that can restrict market access to foreign competitors.

Marinov (2010) compares the pro-competitive effect of trade and competition policy on firm-level mark-up estimates for over 25,000 manufacturing firms in Bulgaria, the Czech Republic, Estonia, Hungary, Poland, the Slovak Republic, and Slovenia. Marinov focuses on

sector-level tariff protection, the number of final-instance decisions (relative to market size), and the European Bank for Reconstruction and Development index for antitrust enforcement. He finds that competition policy enforcement contributes more to lowering mark-ups than trade liberalization. Competition law enforcement may further eliminate certain conduct-related barriers to trade induced by domestic firms. Miroudot, Pinali, and Sauter (2007) show that across 82 countries, the volume of imports is positively associated with indicators of the strength of domestic competition law and policy enforcement.

Pro-competition regulation in domestic markets has been shown to be correlated with higher trade flows. Several studies employ the OECD's product market regulation (PMR) indicator that measures regulatory barriers to entry, as well as rivalry in segments of product markets in which competition is viable. The indicator transforms qualitative information on existing laws and regulation into a standardized score that captures the restrictiveness of sector-specific and economy-wide regulation to competition. For example, Nicoletti and others (2003) demonstrate that exports of goods and services are lower and grow more slowly in countries with more restrictive PMR levels.

The OECD (2005) simulated the effect of simultaneous structural reforms in bilateral tariffs, foreign direct investment restrictions, and the level of PMR restrictiveness. Pro-competitive regulation reforms were "by far the largest driver" of the predicted OECD export growth of 30 percent.

As information and communication technologies allow firms to outsource more tasks and further "unbundle" production stages, trade in services can be a prominent driver of export growth and efficiency gains (Baldwin 2011). However, exports of services are significantly stifled by legal barriers limiting the number of competitors in key services and infrastructure sectors—just as services imports are dampened by extensive licensing requirements. Kox and Nordas (2007) identify a strong impact of regulatory heterogeneity on trade, as measured by differences in the PMR scores. They estimate

that harmonizing regulatory standards could increase OECD services exports by 30 percent. Lennon, Mirza, and Nicoletti (2009) similarly demonstrate that barriers to entry in domestic markets limit trade in services. Schwellnus (2007) finds that based on estimation results, if France's stance on product market regulation would have been as liberal as the United Kingdom's in 1998, its services exports would have been twice as high.

#### **Input sector competition policy and downstream export competitiveness<sup>5</sup>**

The empirical literature finds that pro-competition regulation of input product and services markets contributes to export competitiveness of downstream sectors. Indeed, in some sectors, it contributes directly via the cost of trade. Further, it also benefits imports. At least one study shows that this holds true for antitrust enforcement as well. This suggests that well-functioning markets for services play a particular role in trade and competitiveness of other sectors in the economy. For instance, since services such as telecommunications or professional services are often direct inputs for manufacturing firms, low quality or high prices for such services limit the final product's competitiveness.

Whereas exports in sectors that rely heavily on services inputs have shown extraordinary export growth performance over the last decade, the annual export growth in OECD countries could be at least 1 percent larger if the services sectors were more open to competition (Barone and Cingano 2011). In the 1980s, India's energy, telecommunications, and transport services were provided by state-owned monopolies. Reforms allowed for private sector participation and introduced pro-competition regulation. The OECD's Electricity Communications and Transport indicator captures these reforms, and Bas (2014) studies their impact on India's exports. Bas notes that the change in services regulation between 1994 and 2004 increased the likelihood that an Indian manufacturing firm would export by 5 to 6 percent. The empirical estimates further imply that aligning services regulation to the average level observed in OECD countries would allow for an additional

increase in the likelihood of exporting by 2.25 percent per year.

Berulava (2012) shows that services liberalization — such as deep reforms and liberalization in service sectors including electric power supply, railways, roads, telecommunications, and water supply— positively and significantly influences the export intensity of downstream industries in 29 countries in the European and Central Asian region.

Francois and Wooton (2010) demonstrate how anti-competitive regulation in the distribution sector (road freight and retail market) in 22 OECD countries significantly reduces the volume of imports from 69 countries in 2001. The excessive involvement of professional associations, licensing requirements, and price controls in the road transport segments, as well as onerous registration and special regulations for large outlets in the retail sector, were found to impose significant restraints on imports. Similarly, excessive regulation in the distribution sector in developed countries is a particularly high barrier for trade flows from low-income and small countries. Pittman (2009), in turn, evaluates specific models of railway sector regulation and traces the influence of the competition policy choices on domestic rivalry in key transport industries, which in turn determines shipping costs and trade flows.

Anti-competitive firm behavior in upstream sectors dampens downstream exports. Allegra and others (2004) identify intermediate sectors in Italy with a higher number of sanctions or other interventions by antitrust authorities. They find that export sectors that are more dependent on such “problematic” sectors show lower levels of net exports and also lower growth in exports.

Moreover, the lack of competition in some services may directly affect the cost of trade, often disproportionately. Using evidence from Argentina and Uruguay, Volpe Martincus and others (2014) have derived that for every 1-percent increase in transport costs, a firm’s exports decline by 6.5 percent. The lack of effective enforcement of anti-competitive behavior is therefore particularly detrimental to trade.

Fink, Mattoo, and Neagu (2002) estimate that eliminating both public as well as private actions that restrict competition in the international maritime transport sector could significantly reduce trading costs, thereby boosting export performance. Restrictive practices, such as cargo reservation schemes, rate-binding or other price-fixing private carrier agreements increased the costs on goods carried to the United States alone by up to \$3 billion. Similarly, Geloso and Shepherd (2011) find that restrictions on freedom of pricing in air cargo transport have particularly strong negative effects on bilateral trade in parts and components.

Hummels and others (2009) find that developing countries are particularly affected by the lack of competition in transport services. In a study about the international shipping industry, they calculate the impact on trade volumes as a result of cargo carriers pricing above marginal cost. Their findings indicate that eliminating market power in shipping would boost trade volumes by 15.2 percent (for Latin America) compared to 5.9 percent (for the United States).

## Conclusion

Domestic competition promotes firm-specific productivity. It also generates efficiency-enhancing reallocation that increases industry-wide productivity. More intense competition in input products and services further benefits downstream producer productivity. Competition promotes export competitiveness through all of these channels.

This review of the relevant empirical literature has shown that the degree of competition in a domestic market is a key determinant of its export performance. In line with this result, competition policy enforcement and, in particular, pro-competition market regulation, has been found to promote export competitiveness. Finally, competition policy in the upstream markets plays an important role in providing downstream exporters with high quality and competitively priced input goods and services, thereby boosting their competitiveness.

## Notes

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2. The opening up of *domestic* markets through trade agreement provisions has been identified as a strategy to break domestic political gridlock and enhance market competition (Francois and Hoekman 2010).

3. See table 1 in the Annex, which summarizes estimates from studies that aim at quantifying the effect of some of these linkages.

4. Note that the first theory mainly refers to merger control policy rather than anti-cartel policy.

5. This section focuses on the effect of *domestic* competition and competition policy in upstream sector and downstream export performance. Related literature examines the relationship between pro-competition service sector liberalization and downstream sector productivity (for example, Arnold, Javorcik, and Mattoo, 2011), as well as *foreign* competition in services sector and downstream export performance (for example, Francois and Woerz 2008).

## Annex

Table Effect of competition policy on trade performance

Policy area and country	Study	Reform	Effect
<b>Product Market Regulation</b>			
OECD/Panel	Barone and Cingano 2011	Regulations on barriers to entry: Vertical integration and market conduct in professional services, telecommunications, transportation and energy sectors.	Increase in difference between export growth in downstream industries that use service intensively and those that do not by 0.7–1 percent compared to countries with tighter service regulation.
France	Crozet, Millet, Mirza 2012	Restrictions on entry (that is, licenses, administrative handling) and on ongoing operations (for example, price controls).	Expected rise in firm-level services exports by more than 15 percent following a 10-percent decrease in restrictiveness. A 5-percent lower likelihood to export to destinations that have a 10-percent more restrictive regulation than other destinations.
OECD/Panel	OECD 2005	State control, barriers to entrepreneurship, barriers to trade and investment.	Expected increase of total OECD exports by 30 percent following a reduction of inward-oriented product market regulation.
Panel	Kee, Nicita, Olarreaga 2009	Price controls, quantity restrictions, monopolistic measures, technical regulations.	Restrictions add an average of 87 percent to the level of trade restrictiveness imposed by tariffs. The countries with the highest ad valorem equivalent of core non-tariff measures are all low-income African countries (Algeria, Côte d'Ivoire, Morocco, Nigeria, Tanzania, and Sudan).
<b>Competition Policy Enforcement</b>			
Panel	Miroudot, Pinali, Sauter 2007	Competition law and policy (government intervention, price controls, antitrust law, administrative burden to entry).	A 20-percent growth in imports per a 1-percent decrease in domestic competition policy score (pro-competitive reform). Increase of imports from destination country by 12.3 percent following a drop of the destination country's index score by 1 percent.
Cross-section	Fink, Mattoo, Neagu 2002	Private carrier conferences and other price-fixing agreements.	Reduction in maritime transport charges by 32 percent expected from break-up of rate-binding and other price-fixing agreements.
Bulgaria, Czech Republic, Estonia, Hungary, Poland, Slovak Republic, Slovenia /Panel	Marinov 2010	Increase in antitrust enforcement and decline in tariff protection.	Reduction of firm-level mark-ups by 6 percentage points associated with competition policy. Decrease of less than 1 percentage point due to tariff liberalization.

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## viewpoint

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