

The Doha Development Round: Reaching Beyond Trade Liberalization

Sven W. Arndt
Lowe Institute of Political Economy
Claremont McKenna College

1. Introduction

The Doha Round of multilateral trade negotiations inherits from its predecessors a legacy of immense progress, but it also faces unprecedented challenges. Its task is to improve still further a trading system that is already much more open, with national markets much more closely linked and with goods, services, and assets flowing much more freely among a much larger number of participants than when this series began.

But there is also more dissonance than ever before, the most visible expression of which are the street demonstrations against “globalization.” The negotiations themselves reveal increased resistance to further liberalization and market opening among both developed and developing countries. This is not surprising, inasmuch as more difficult and intractable issues such as agriculture have been repeatedly shelved and must now be finally addressed.

The agenda is further complicated by the desire to give development greater prominence. It is not at all clear to what extent further trade liberalization and market opening can stimulate development in the neediest countries without help from domestic policy reforms.¹

Ironically, resistance to further trade liberalization in advanced countries is testimony to the success of this process. While development is still lagging in many countries, others have clearly “emerged” or are in the process of doing so. They have become effective competitors in world markets and are threatening established interests in more mature economies.

It is important to keep in mind that multilateral trade liberalization is not the only source of globalization. Regional and other preferential trade arrangements have also made significant contributions. Furthermore, beyond such coordinated official acts of market opening, major advances in communications and transportation technologies have reduced the costs of doing business internationally. One result has been the spread of cross-border fragmentation of goods and services production and the rise of production networks.

This paper explores the growth and development opportunities inherent in production networks and the role of regional cooperation in promoting such networks. Traditional forms of discriminatory regional trade liberalization may not always be appropriate, in view of excessive costs of trade diversion especially where rules of origin are involved. An alternative may be available in a more “open” regionalism which fosters regional cooperation without discriminating against key trading partners outside the region. The option considered here involves regional production platforms (via clustering and agglomeration) that operate within larger production networks.

The rest of the paper proceeds as follows. Section 2 reviews pertinent developments in the world economy, with a focus on the growth of intra-regional trade and the rising share of components trade and of production networks. Section 3 considers the analytics of cross-border production fragmentation and production sharing, while Section 4 explores the implications of these types of trade arrangements for economic development. Section 5 concludes.

2. Recent Developments in the Trading System

A succession of trade rounds, unilateral market opening and regional economic integration, has linked national markets at all levels - goods, services, assets, and factors of

production. Although trade has grown rapidly in recent years, regional trade has risen relative to world trade in many parts of the globe, as Charts 1-4 show. In East Asia (EA), for example, both exports and imports have grown faster within the region than with the world. For the countries in the North American Free Trade Area (NAFTA), intra-regional exports in the manufacturing sector have shown robust growth, while imports have changed much less dramatically, and have actually been falling back in the most recent past. This development is to some extent a reflection of the strength of competition from East Asia.

Charts 1-4 about here

In Mercosur, the role of intra-regional trade has been much smaller, compared to the other regions. The ratio of intra-Mercosur trade relative to trade with Latin America is very high, on the other hand, reflecting the well-known limitations that regional trade offers in Latin America relative to other regions. Section 4 assesses the relative merits of discriminatory versus open regionalism in Latin America and elsewhere.

In some parts of the world, these developments have been facilitated by regional free trade agreements. In others, notably East Asia, market integration has occurred in the absence of overarching policy frameworks. The recent spate of bilateral trade agreements with partners both in the region and beyond has yet to be fully implemented and thus has little to do with the evidence. Indeed, as argued below, these agreements may turn out to be welfare-reducing.

During this period of regional trade expansion, trade in parts and components has risen relative to total trade. This development is closely linked to the spread of cross-border fragmentation of production and the rise of multi-country production networks. This new form of cross-border cooperation works well among countries at different stages of development - between developed and developing countries, for example, or among emerging economies

characterized by different stages of economic development. It offers opportunities for groups of developing countries within a region to cooperate in production networks with economies.

Charts 5-9 offer a selection of perspectives on this evolving feature of international trade, with a particular focus on its role in regional trade patterns. In some regions and some industries, component trade has been important for some time. In others, there has been significant expansion recently of components trade relative to earlier periods. The growth of components trade is manifest in both intra- and extra-regional trade. In Mercosur, for example, components trade with the United States has been of considerable importance in some industries.

Charts 5-9 about here

This raises a key question about the possible contribution membership in production networks might make to growth and industrialization in developing countries. Conceptually, production partnerships with other countries allow nations which do not possess comparative advantage in the making of an entire product, to concentrate on those constituent activities in which they have a competitive advantage. All that is required is that technology and resource requirements vary across the various phases of a production process and that the nations participating in these arrangements are differentially endowed with technical knowledge and productive resources.

In a Ricardian framework, for example, intra-product specialization takes advantage of differences in technologies; in a Heckscher-Ohlin world, cross-country differences in factor endowments and cross-component variations in factor intensities determine the distribution across countries in comparative advantage at the level of parts, components and product assembly.²

There is increasing evidence that these conditions are easily met across a broad range of industries. Examples of cross-border production networks include those involving the U.S. and Mexican automobile industries, as well as electronics, furniture and textiles and apparel producers. In East Asia, Japanese multinationals have been active in developing component-sourcing networks in a number of countries.³ More recently, production sharing between China and a number of East Asian nations has expanded rapidly. It is also growing in Europe, between the more advanced nations of the region and the eastern transition economies.

Implementation of production networks requires not only trade liberalization, but flows of foreign direct investment (FDI), installation of productive capacity and enactment of accommodating regulatory, tax and related policies. Furthermore, dispersal of the constituent activities of a productive process requires a network of service links to support communication and the movement of parts and components among participating locations.⁴

3. The Simple Analytics of Production Networks

If the parts and components contained in a product vary in terms of their factor intensities and technological requirements and if production of the commodity is capable of being “fragmented” into separate stages and activities that need not occur simultaneously or take place in the same location, then the activities may be dispersed across countries in accordance with considerations of comparative advantage. The expected result is increased efficiency and reduced production costs, as each activity is shifted to the least-cost location. At the same time, however, communication, transportation and related service costs are expected to increase. Hence, cross-border fragmentation will occur only if the former benefits exceed the latter costs.

That said, standard methods for assessing welfare effects for trade in final goods may be applied to production sharing and trade in parts and components.⁵

The welfare effects, however, depend on the trade-policy regime. Under conditions of free trade, production sharing can be shown to increase welfare in terms of the traditional trade model. It does so, for the same reasons that specialization at the level of end products raises welfare, namely, by improving the efficiency with which productive resources are utilized. It causes activities in which a country is at a comparative disadvantage to be terminated and outsourced, while domestic productive resources are re-directed into activities in which the country has a competitive edge. In other words, some jobs are destroyed, while new, presumably superior, jobs are created.

Production sharing is welfare enhancing as well, when it occurs in a preferential trade agreement. However, if a preferential trade agreement is introduced into a setting in which production sharing takes place initially under MFN conditions, then the rules of origin that typically accompany such agreements will lead to welfare losses. When production sharing is newly introduced during formation of a free trade area, it may be instrumental in ensuring that the agreement is trade-creating rather than trade-diverting in the overall sense.⁶

The implications of production sharing become less clear-cut and more ambiguous when it is implemented in the presence of MFN tariffs on end products in the import sector. If the tariff is sufficiently onerous and distortion of resource utilization is pervasive, then introduction of production sharing will reduce welfare, bringing about a situation that is inferior to specialization that is limited to the level of products. This suggests that countries entering into production networks are well-advised to remove or adjust existing tariffs on imports of end

products. On this basis alone, therefore, there may be grounds for tariff cuts in many developing countries independent of concessions from negotiating partners in the Doha Round.

The essential argument is illustrated in Figure 1 with the aid of a standard general equilibrium trade diagram. Curve TT is the production-possibility curve in a 2x2x2 model of trade. Goods Y and X are end products, respectively representing the country's exports and imports. Initial equilibrium is located at points Q_0 and C_0 for production and consumption, respectively. The world price is given by P_w and the tariff-inclusive domestic price is P_d . The angle between the two price lines represents the magnitude of the tariff on imports of the final good, X.

Introduction of offshore sourcing of components by the country's import-competing industry shifts out the production possibility block along the horizontal axis from TT to TT'. This shift results from the fact that the effect of offshore sourcing of components is similar to that associated with technical change.⁷

Figure 1 about here

For a developing country, the import good, X, would typically be the capital-intensive product.⁸ Component sourcing in a production network would then lead to imports of parts and components that are capital-, skill-, and technology-intensive. The outward shift of the production-possibility curve depends on the extent to which foreign sourcing of components reduces costs measured in terms of domestic productive resources. The effect in this instance is equivalent to capital-saving technological progress in the import sector.

Note that introduction of production-sharing in the export sector, Y, does not create this type of problem. There, the production possibility curve shifts out along the Y-axis and welfare is enhanced.

The advanced country, which has comparative advantage in capital-, skill-, and technology-intensive products and components may also benefit from participation in a production network in which high-cost, domestically-produced, labor-intensive components are replaced by imports from the labor-abundant trading partner. In that event, the advanced country's production possibility curve also shifts out along its X axis, reflecting the greater productivity of domestic resources in this industry.

We assume in Figure 1 that our country is small, so that this shift in the production possibility curve has no effect on the world price and hence no effect on the domestic, tariff-inclusive price. The change causes production and consumption to move to points Q_1 and C_1 , respectively. Output of the import-competing good expands, while that of the export good falls.⁹

In the new equilibrium as drawn, welfare declines as consumption shifts to the lower indifference curve through point C_1 . While this outcome is not inevitable, it becomes the more likely as the price angle created by the tariff widens and the slope of the Rybczynki line (RR) becomes steeper in relation to the world price ratio. Welfare increases when the Rybczynki line is flatter than the world price ratio. This ratio is an expression of the degree of distortion introduced into the system by the tariff on the finished good.

The solution to avoiding such welfare losses is to reduce or eliminate the tariff on the end product X. This is an argument for unilateral tariff cutting, based on the notion that in the import sector tariffs on end products may undermine the positive welfare effects of production sharing. Any tariffs on imported components should also be removed for full exploitation of the benefits of production sharing. Such tariffs cause trade-diversion, much like the rules of origin discussed above.

While the focus has been on trade in goods, the foregoing considerations apply with equal force to offshore sourcing of services, like ticketing operations, call and information centers, financial, accounting and software services, and so on. In the presence of production networks, there are two types of services: those used directly in the production of parts, components and assembly, and those needed to sustain the production networks. The latter include telecommunication, transportation and other coordination services.¹⁰

The spread of production sharing provides new opportunities for multinational enterprises (MNE). When the original MNEs went into Europe in the fifties and sixties, a key purpose was to jump discriminatory tariffs associated with regional integration projects (EEC and EFTA) and to establish production facilities (often of finished products like automobiles, television, computers, and so on) which supplied the local market. A significant share of multinationals operating in Latin America and other regions still displays this characteristic.

The production-networking multinational, on the other hand, sets up production facilities for the manufacture of components, which may be shipped back home for incorporation into final products. It establishes assembly operations abroad which receive components from home to be incorporated into final goods to be sold at home or in third markets. In still another variant, components may be produced in one host country for inclusion in a downstream component or final good manufactured in a second host country. This is the emerging picture in East Asia, where Japanese multinationals have been building increasingly elaborate regional production platforms.¹¹ As we have seen, trade in components has grown rapidly relative to overall trade in the region.

Multinationals move factors of production among countries, especially skilled workers and professionals. Hence, in the presence of production networking, a country's domestic factor

endowment may not represent its effective resource constraint, if engineers, technicians, managers, and other skilled personnel can be moved across borders at low cost and short notice. Any such inflow of factors of production shifts out the production possibility curve only along the relevant industry axis whenever the incoming resources are strictly industry-specific. There may, however, be an economy-wide effect, in which case the curve will shift out along both axes, albeit to different degrees.

4. Implications for the Doha Round and the WTO

The preceding discussion suggests a possible approach to strengthening the development aspects of the Doha Round. It is based on regional cooperation in the creation of production-sharing clusters, designed to not only improve competitiveness directly, but to encourage policy reforms. This type of regionalism abandons discrimination as a source of competitive advantage in favor of cooperation. Instead of gaining competitiveness by discriminating against more efficient producers, competitiveness is gained from exploitation of regional complementarities.

Creating such regional clusters would require a variety of reforms aimed at creation of a regional base for production sharing. They would include infra-structure development, particularly in the areas of communication and transportation linkages among members and between the cluster and the rest of the world. They would also address harmonization of rules and regulatory policies that affect the flow of goods, investment, finance and persons within the region and between the region and the rest of the world. They would seek to develop education, training and information facilities. If carried out at the regional level, many of these activities would be subject to important scale economies. With respect to the types of reforms needed and

how to implement them, Europe's experience with reforms associated with creation of the Internal Market provides some important lessons.

This approach to regionalism would have the immediate benefit of reducing the kinds of tension and conflict that arise between traditional regionalism and the MFN non-discrimination principle. The traditional model of regional integration pursues the benefits of trade liberalization through discrimination. As is well-known, the static welfare benefits depend on the relative magnitudes of trade creation and trade diversion. In many regions, the case for the traditional regionalism is not easy to make on purely economic grounds. It often takes non-economic objectives, such as those that existed in Europe, to overcome economic conditions that are net trade-diverting and thus welfare-reducing. Suitable non-economic incentives are scarce in Asia, Latin America and Africa.

The traditional approach focuses on protecting production within the region from outside competition. This is why rules of origin play such an important role in free trade areas. But this approach makes less and less sense as production becomes more and more suited to cross-border fragmentation under falling communication and transportation costs and as a result of the market opening that has already been achieved.

As noted, under these emerging circumstances, rules of origin are impediments to full exploitation of the benefits of production sharing. This is a weakness in any discriminatory arrangement, but one which can become especially costly in the context of overlapping bilateral trade discrimination. In this context, the current fad of mini-agreements in East Asia makes little sense, especially in a region in which production sharing is already an important source of comparative advantage and welfare.¹²

Regional cooperation in production clusters may offer particularly attractive opportunities for smaller countries, each of which may be too small to take full advantage of membership in a production network. Inability to exploit scale economies may be one barrier, not only scale economies in production, but scale economies in services associated with production networks. Distance is another: production sharing in a cluster of economies reduces distance related to component activities.

Furthermore, a group of smaller countries operating in a regional production cluster attached to a global production network would have a broader resource endowment than any single member. Access to FDI would also be expected to improve in the context of a production-sharing cluster of countries. Overall, the benefits known to be associated with agglomeration apply here.

Not to be overlooked, moreover, is the possibility that regional cooperation, in which all members agree to undertake certain reforms and incur certain outlays may be easier to sell at home politically than unilateral approaches. As noted before, it may also be easier to attract foreign financing and on superior terms.

Finally, regionalism built on cooperation, network clustering and agglomeration offers a way of achieving the “open regionalism” the nations of Pacific Asia have long contemplated. It is probably true, as Baldwin (2006) argues, that “open regionalism” is an oxymoron when that regionalism is based on preferences and discrimination. The regionalism described in this section not only escapes that criticism, but removes many of the actual and potential problems associated with the current proliferation in East Asia of overlapping and conflicting discriminatory trade arrangements.

5. Concluding Remarks

The Doha Round trade negotiations are at a critical juncture. The issues needing resolution have been repeatedly shelved in earlier rounds for reasons of intractability. They are now at the top of the agenda at a time of widespread popular resistance to “globalization.” This agenda is further complicated by the round’s focus on development in the world’s poorest countries.

It is unlikely that the tough issues - including agriculture and services trade - will be resolved and it is not clear to what extent further trade liberalization, even if highly biased in favor of the poorest countries, can kick up growth and development there. The main point of the foregoing discussion has been to explore opportunities inherent in a new form of regionalism, based on production sharing.

The evidence suggests that regional trade has grown more rapidly than trade in general and that within regions trade in parts and components has grown relative to trade in end products. This tendency has been strongest in regions with the greatest success in industrialization. Rather than the traditional discriminatory regionalism, this variant discussed in these pages stresses cooperation among nations in a region in production-sharing clusters embedded in global production networks. In this set-up, “open regionalism” can work.

Acknowledgments

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Endnotes

1. For a critical assessment of the growth effects of trade and the importance of domestic policies, see Rodrik (1997, 2005). See also Chang, Kaltani and Loayza (2005).
2. See Arndt (1998), Deardorff (2001) and Jones and Kierzkowski (2001) for analytical treatments.
3. See Kimura and Ando (2003).
4. See Jones and Kierzkowski (1990) for a detailed discussion of the role of service links in production networks.
5. These basic propositions have been examined by Arndt (1997, 1998), Deardorff (2001), and Jones and Kierzkowski (2001) in the context of standard trade models. See also Grossman and Helpman (2001). For empirical explorations, see Feenstra and Hanson (1996), Egger and Egger (2001), and Hummels, Rapoport and Yi (1998).
6. See Arndt (2004).
7. See Arndt (1997, 1998). The roots of this analysis go back to Rybczynski (1955) and to the work of Johnson (1971) and Samuelson (1962).
8. In the age of production sharing, this assumption is not necessarily valid. A developing country may be exporting capital-, skill- and technology-intensive end products, in which domestic value-added consists mainly of labor-intensive assembly. The country is an exporter of labor-intensive assembly, an importer of capital-, skill-, and technology-intensive parts and components, and a re-exporter of those parts and components.
9. In the advanced country, the effect of the outward shift of that country's production possibility curve is to also increase X-output. Hence, total X-output rises as a result of the introduction of production sharing. If the two countries are together large enough to influence

world prices, then the price of X is likely to fall. This will be welfare-reducing for the advanced country, whose export price is falling and welfare-increasing for the developing country whose import price is falling.

Note that production of components in each country will typically rise in this process. If component production is subject to scale economies, each country may gain additional competitive and welfare benefits from the exploitation of scale economies. One of the possible advantages of production sharing in the presence of scale economies at the level of components is that the rise in production makes scale effects more accessible than when each country operates on its own.

10. See Jones and Kierzkowski (1990).

11. See Kimura and Ando (2003).

12. See Baldwin (2006) for an assessment of Asian regionalism.

References

- Arndt, S. W. (1997), "Globalization and the Open Economy," North American Journal of Economics and Finance, 8, 1.
- ____ (1998), "Super-Specialization and the Gains from Trade," Contemporary Economic Policy, XVI
- ____ (2004) "Global Production Networks and Regional Integration" in M. G. Plummer (ed.), Empirical Methods in International Trade (Northampton: Edward Elgar)
- Baldwin, R. (2006), "Managing the Noodle Bowl: The Fragility of East Asian Regionalism." (London: CEPR: Discussion Paper No. 5561, March)
- Chang, R., L. Kaltani and N. Loayza, (2005), "Openness Can Be Good For Growth: The Role of Policy Complementarities," (World Bank Policy Research Working Paper 3763, November)
- Deardorff, A.V. (2001), "Fragmentation in Simple Trade Models," North American Journal of Economics and Finance, 12, 2 (July)
- Egger, H. and P. Egger (2001), "Cross-border Sourcing and Outward Processing in EU Manufacturing," North American Journal of Economics and Finance, 12, 3 (December)
- Feenstra, R.C. and G. Hanson (1996), "Foreign Investment, Outsourcing, and Relative Wages," in R.C. Feenstra, G.M. Grossman and D. Irwin (eds.), The Political Economy of Trade Policy (Cambridge, MA: MIT Press)
- Hummels, D., D. Rapoport and K.-M. Yi (1998), "Vertical Specialization and the Changing Nature of World Trade," Economic Policy Review (New York Fed, June)
- Johnson, H.G. (1971), The Two-Sector Model of General Equilibrium, (Chicago: Aldine/Atherton).

- Jones, R.W. and H. Kierzkowski (1990), "The Role of Services in Production and International Trade: A Theoretical Framework," in R.W. Jones and A.O. Krueger (eds.), The Political Economy of International Trade (Oxford: Blackwell)
- _____ (2001), "A Framework for Fragmentation," in S. W. Arndt and H. Kierzkowski (eds.), Fragmentation: New Production Patterns in the World Economy (New York: Oxford University Press)
- Kimura, F. And M. Ando (2003), "Fragmentation and Agglomeration Matter: Japanese Multinationals in Latin America and East Asia," North American Journal of Economics and Finance, 14, 3 (December)
- Rodrik, D. (2005), "The Global Governance of Trade as if Development Really Mattered" in P. King and S. King (eds.), International Economics and International Economic Policy (New York: McGraw-Hill/Irwin)
- _____ (1997), Has Globalization Gone Too Far? (Washington, D.C.: Institute for International Economics)
- Rybczynski, T.N. (1955), "Factor Endowments and Relative Factor Prices," Economica, 22, pp. 336-341.
- Samuelson, P. A. (1962), "The Gains from International Trade Once Again," Economic Journal, 72, pp. 820-829.
- Swenson, D.L. (2004), "Entry Costs and Outsourcing Decisions: Evidence from the U.S. Overseas Assembly Provision," North American Journal of Economics and Finance, 15, 3 (December)

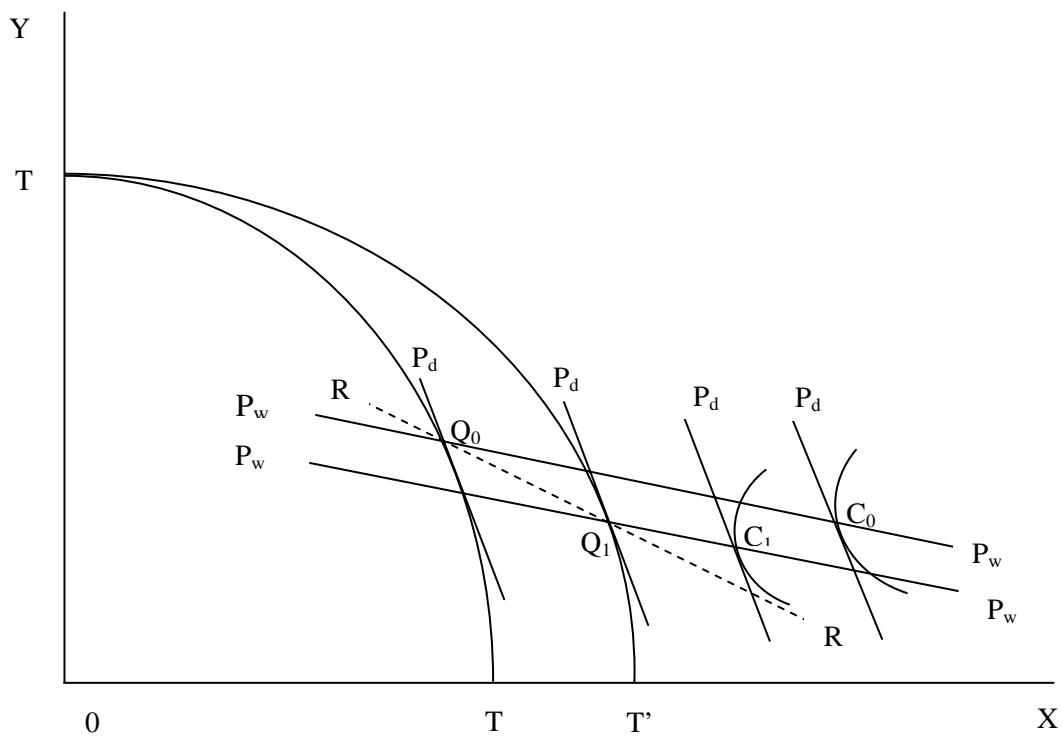


Figure 1

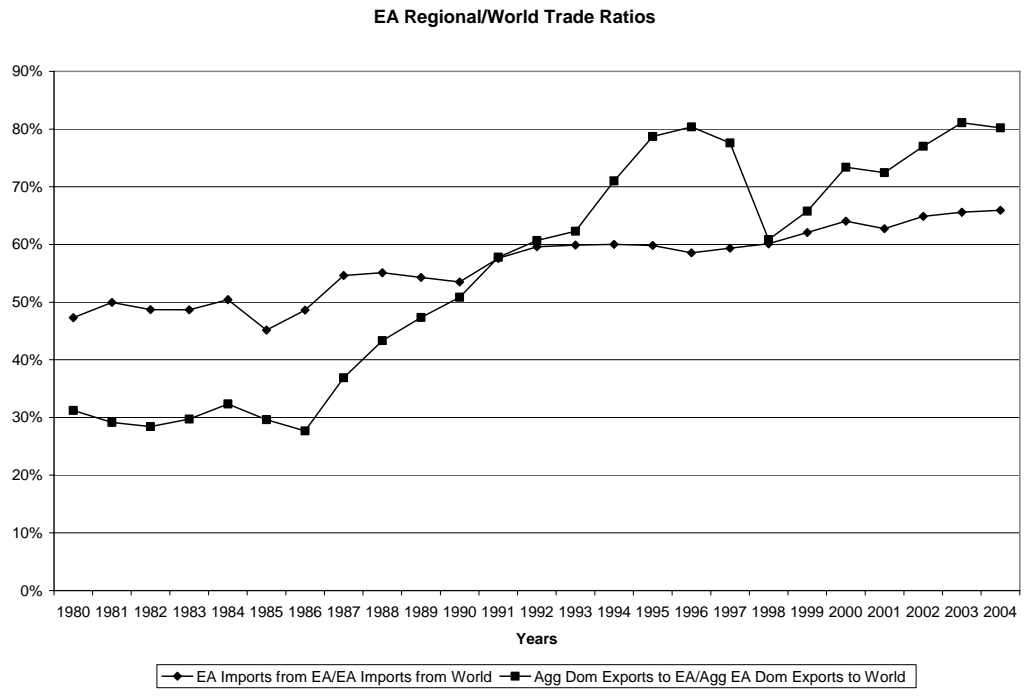


Chart 1

Source: UN Comtrade

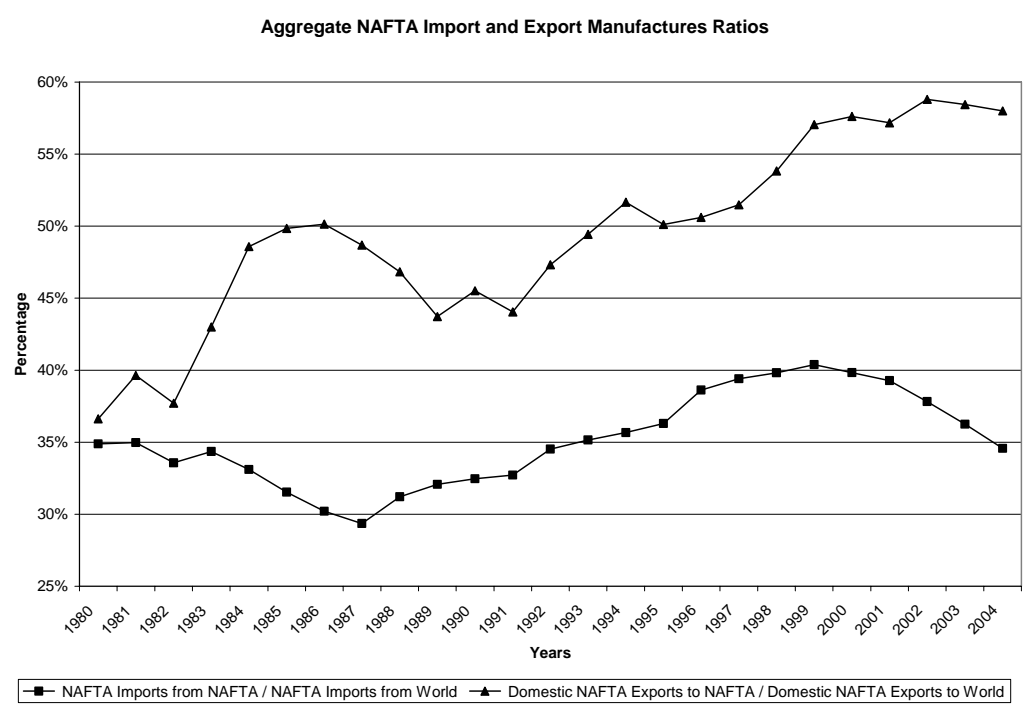


Chart 2

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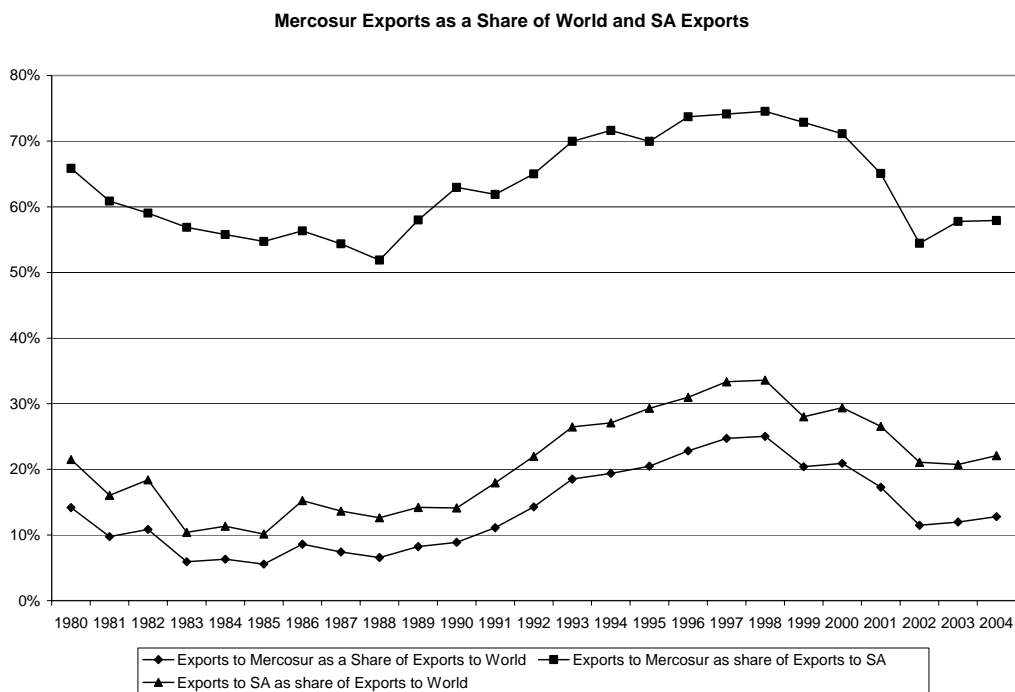


Chart 3

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Chart 4

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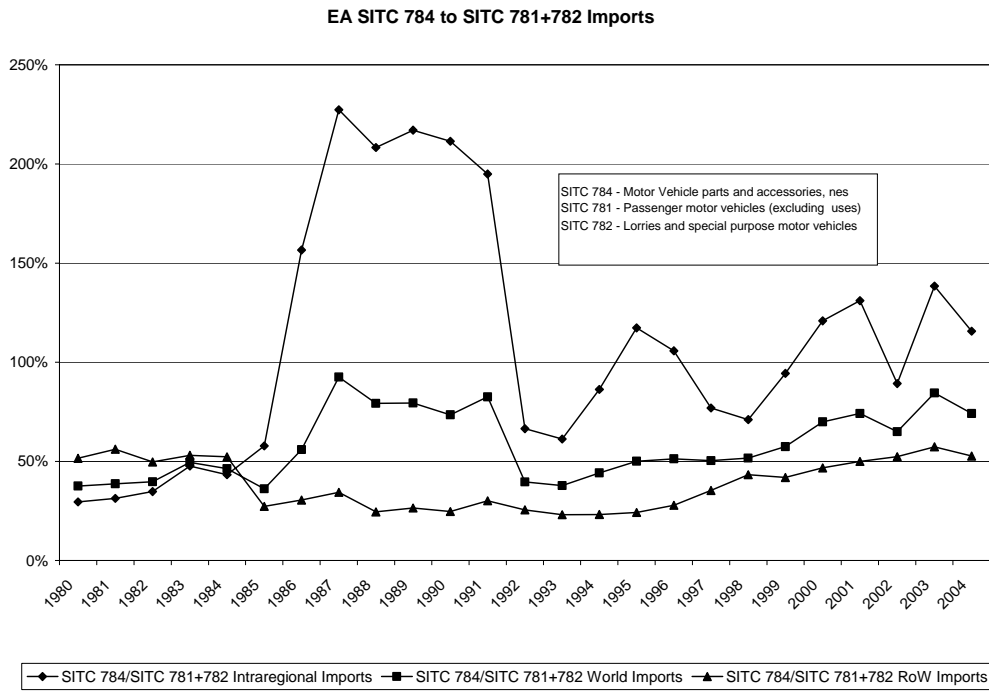


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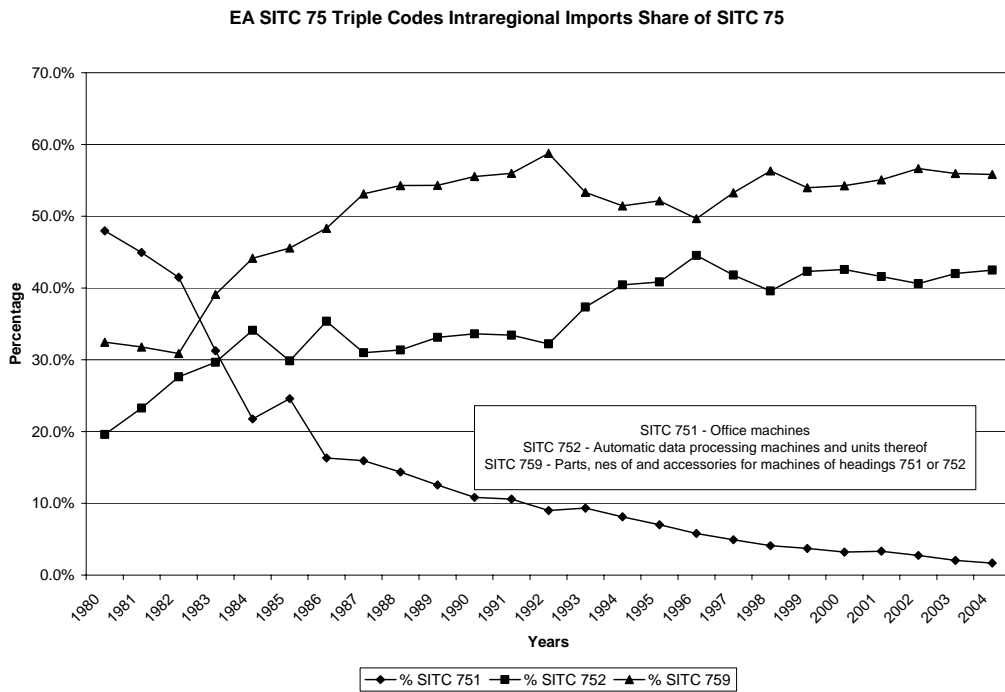


Chart 6

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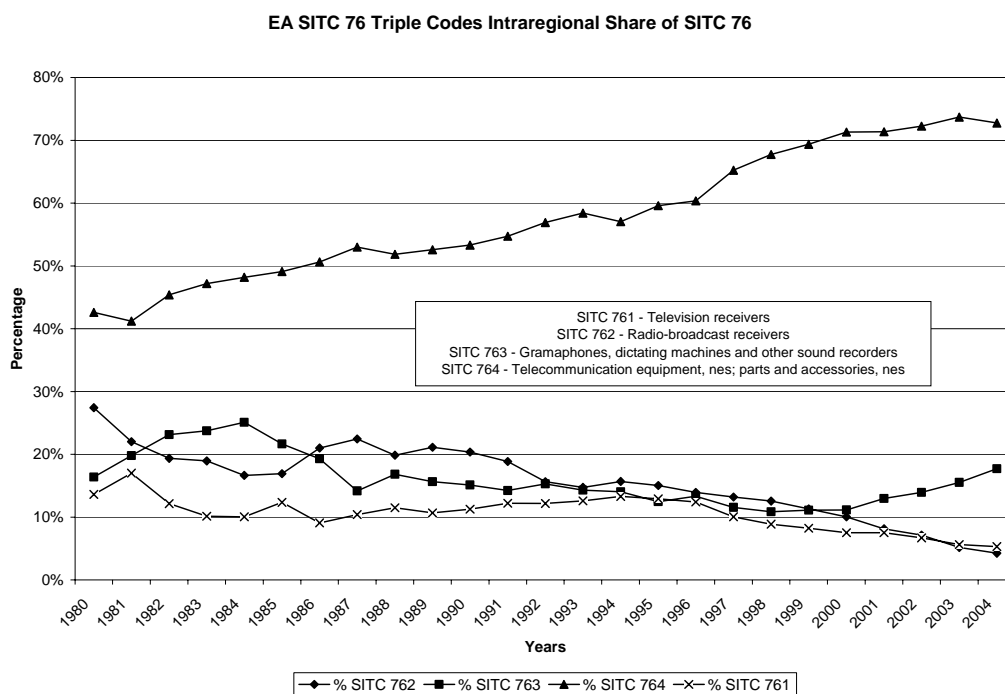


Chart 7

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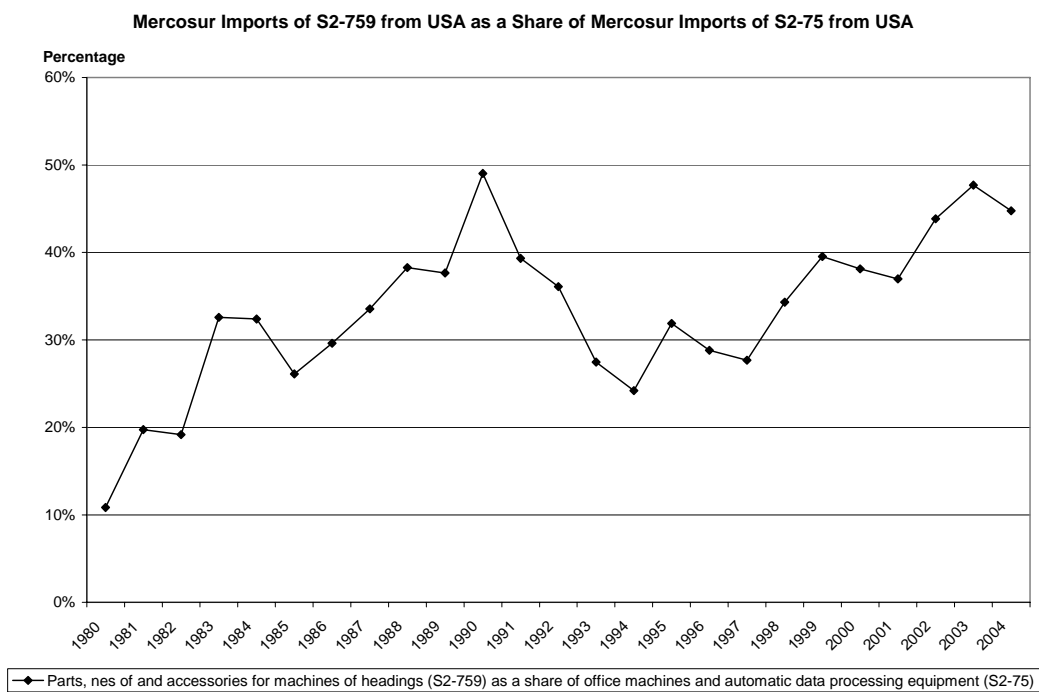


Chart 8

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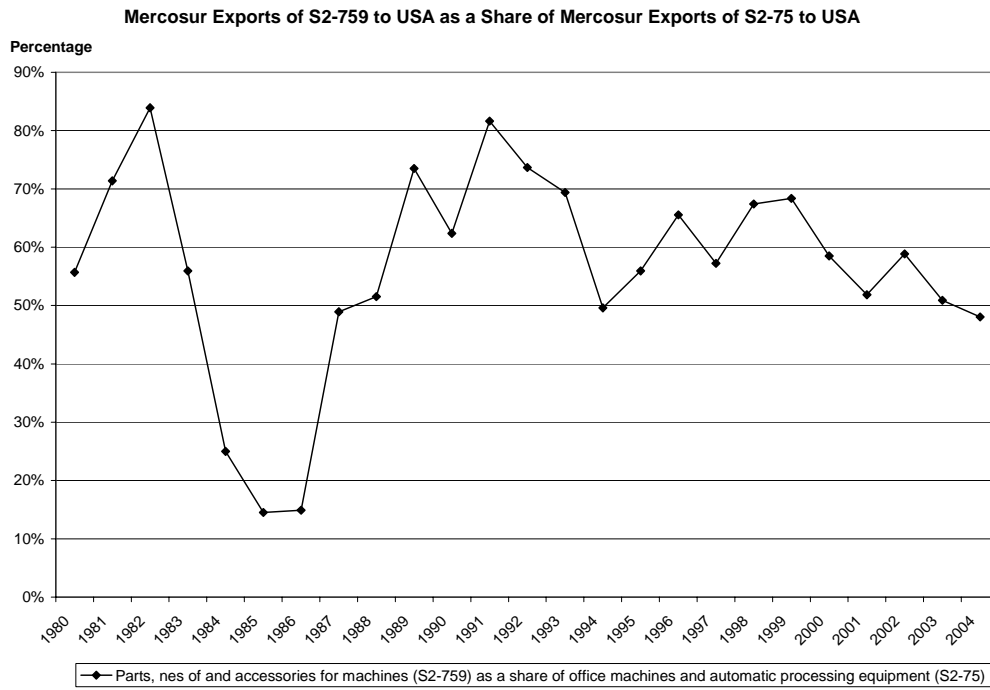


Chart 9

Source: UN Comtrade