

## **Comparative Advantage, or Competitive Advantage in Explaining Agricultural Trade?**

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### **Abstract**

Comparative advantage is perhaps one of the most celebrated concept/theory in the history of economics since its birth in the late 18<sup>th</sup> century. It has dominated the field of international trade not only in academics but also in economic/development policy circles. International trade in agriculture, however, has been a notable exception. Agricultural protectionism disallowed the theory of comparative advantage to be valid in explaining agricultural trade. This paper attempts to shed light on the role of the state in determining international competitiveness of agricultural commodities. Farmers are neither the ones who make decisions whether or not to enter international markets nor are the ones who invest in R&D and develop new technologies with the goal of enhancing international competitiveness. Liberalizing trade is likely to send signals first to trading corporations, grain handlers, and governments and transmitted to farmers indirectly. Freer trade would initiate the process of specialization of production across the world, generating benefits in terms of greater production and lower prices, but offering little additional incentive for individual farm producers to reduce costs or adopt new technologies for the purpose of enhancing export opportunities (hence, lacking the creative destruction processes like in the manufacturing sector in which firm level strategies would determine international competitiveness). However, states may compete with each other to expand their exports or to decrease their dependence on food imports with strategic investments in agricultural infrastructure. The point is that state level strategies are likely to determine the pattern of agricultural trade in the long run.

**Key Words:** Agricultural Trade, Comparative Advantage, Competitive Advantage, the Role of the State

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### **Introduction**

Agriculture accounts for less than 3 percent of the value of global outputs and agricultural trade represents about 6 percent of today's total merchandise trade compared to around 10 – 12 percent in the 1990s and about 18 percent in the 1970s (figures 1 and 2).<sup>1</sup> The decline in the share of agricultural trade can be attributed to (1) increases in the share of global consumers' expenditure on goods and services from the manufacturing and service sectors, and (2) the persistence of trade barriers (high tariffs and nontariff barriers) in the agricultural sector compared to the considerable reductions in trade barriers for the manufacturing sector. The increase in the share of global consumers' expenditure on manufacturing goods and services is a structural, inevitable feature that arises as economies undergo transformations from agriculture-driven economies to manufacturing and service-dominated economies, while the high barriers to trade in agriculture represents an artificial feature associated with agricultural protectionism in the 20<sup>th</sup> century and the failure of the WTO Doha Round in reducing it.

Indeed, agriculture has garnered special support in particular from industrialized countries during the second half of the 20<sup>th</sup> century. Today, agriculture is an important sector for different reasons across industrialized, developing, and least developed countries (LDCs). As noted by Pingali (2010), agriculture is the primary engine of economic growth for LDCs; for emerging economies, the agricultural sector requires government efforts to sustain productivity gains; for

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<sup>1</sup> Within the agricultural sector, the share of the trade of bulk commodities has diminished from over 60 percent in the 1960s to about 35 percent in the 2000s, whereas the share of the trade of processed food products has increased proportionally over the same period of time (figures 3 and 4).

industrialized countries, it is important to promote agriculture's multifunctional roles such as rural amenities and ecosystem services. Similarly, Hayami and Godo (2005) point to drastically different nature of agricultural problems across countries and view the disequilibrium of the world agriculture from three perspectives: (i) the food shortage problem in low-income countries, (ii) the protection problem in high-income countries, and (iii) the disparity problem between farm and nonfarm sectors in middle-income countries. The point is that agriculture is important in every country for reasons varying in accordance with the country's developmental stage and there are divergent rationales for government intervention in agricultural production and markets depending on the country's developmental stage. Such divergence in agricultural problems and varying needs for government involvement and resulting conflicts of agricultural interests across countries underlie the difficulty for WTO member countries to agree on future trade rules.

As such, agricultural trade has been one of the most contentious issues in international economic relations. Apart from WTO member countries' divergent positions on trade rules, there are proponents and opponents in academic communities regarding agricultural trade liberalization. Proponents argue that trade liberalization in agriculture would benefit the global economy by stimulating specialization of agricultural production across the world and results in substantial increases in national incomes and welfare for all countries involved. Opponents counter that international markets in agriculture are already distorted due to agricultural protection in the postwar period, strengthening their agricultural sector and turning many of them into agricultural exporters and liberalizing is likely to fixate such distortions and deprive food insecure developing countries of the opportunities to advance their agricultural development. Proponents argue that states should stay out of the international flow of agricultural products,

while opponents believing that states should play an important role in developing/managing the agricultural sector, especially in developing and least developed countries.

The theory of comparative advantage provides economic rationale for the proponents of agricultural trade liberalization. The theory rests on differences in production costs and factor prices that may arise due to differences in the endowments of natural resources and production factors. The theory is valid in explaining international trade so far as the state does not intervene in the market beyond providing basic regulations and rules of the game required for the efficient operation of the market. When the state intervenes either in input or output markets and distorts their relative prices, comparative advantage loses its explanatory and predictive ability as a trade theory. Given that massive government protection of the agricultural sector by industrialized countries during the 20<sup>th</sup> century (along with many developing countries' taxing the agricultural sector) has substantially altered relative prices of agricultural outputs/inputs and played an immensely important role in determining the magnitude and pattern of agricultural trade over the last century, it is imperative to consider the role of the state in explaining agricultural trade.

The purpose of the paper is to compare the traditional theory of comparative advantage with alternative theories (e.g., New/Strategic Trade Theory, Porter's Competitive Advantage of Nations, and Developmental State) and use the comparison to illuminate on the theoretical and practical role of the state in determining the patterns of agricultural trade. Further, the paper probes the role of the state by comparing the manufacturing and agricultural sectors and discusses the implications of the differences between the two sectors in terms of the types of benefits realized from trade.

### **Agricultural Protection in Developed Countries**

Since the Corn Laws and Navigations Acts were repealed in the late 1840s, the British along with others such as Denmark and Netherlands have been progressing toward free trade in agriculture, although other parts of the Europe (France and Germany) keeping protectionist position all along (McCalla, 1969). Yet, when agricultural depression set in with greatly expanded production of wheat and livestock from the New World (American, Australia, and Canada) being put in European markets in the 1860s, the British turned around and started to protect its agricultural interests again. After the First World War, the pursuit of agricultural self-sufficiency in Europe further depressed agricultural commodity prices. Such depression in commodity prices and accompanying decrease in farmers' income directly underlie the birth of today's agricultural protectionism. Especially, during the Great Depression era, the governments in the U.S. and Europe needed to protect the one-fourth of the population engaged in farming and to reduce the disparity in incomes between the farm and non-farm sectors. The Great Depression of 1929 exacerbated depressions in farm prices and income, considerably expanding protectionist policies in agriculture.<sup>2</sup> France, Germany, and eventually UK adopted the old version of today's farm policies by the 1930s. For example, UK instituted a set of laws (Wheat Act of 1932; Agricultural Act of 1937; Livestock Industry Act of 1937) to place agriculture under a system of price support and import management. In the US, Agricultural Adjustment Act (AAA) was enacted in 1933 as the first purely domestic as opposed to trade policy for agriculture. The AAA initiated the concept of supply management with two primary instruments: price supports and

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<sup>2</sup> In general, the Great Depression has instigated the spread of economic nationalism across the world and caused a sharp decline in international commerce, awakening post-war world leaders to recognize the importance of reducing trade barriers in envisioning international economic order after the Second World War.

production controls. Farmers were required to restrict their production of certain crops in order to be eligible for price supports setting artificially high prices.

The Bretton Woods system created in 1945 was given the mission of fostering growth and stability through the progressive liberalization of international economic relations. Nevertheless, agriculture was excluded from such a process of constructing a liberal economic order. The US is accountable for the exclusion: with the severe farm problems during the Great Depression era vivid in memory, the U.S. Congress sought international rules that would be compatible with domestic farm support programs, hoping to maintain as much sovereign rights as possible in determining farm policies (Josling et al, 1990; Friedman, 1993). Specifically, agriculture was excluded from the rules concerning export subsidies (article XVI) and quantitative import restrictions (article XI). The major consequence of the US-led exceptionalization of agriculture was the intensification of government intervention across the developed world making use of various policy instruments such as supply management, export subsidies, market price guarantees, income-boosting subsidies, and border protection to farmers.<sup>3</sup>

For the next four decades, agricultural protectionism has grown in size and become increasingly sophisticated both in the U.S. through the legislation of farm bills every five/six years and in Europe through the initiation of the Common Agricultural Policy (CAP) in 1962. The growth in agricultural protectionism was barely questioned prior to the Uruguay Round in 1986 that produced Agreement on Agriculture (AoA) giving rise to the box system integrating market disciplines and mechanisms to incorporate public demand for social, environmental, and rural development functions of agriculture. The AoA prompted developed countries to shift

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<sup>3</sup> While agricultural protectionist policies became prevalent across the developed world, the US took advantage of the exceptional rules for agriculture and emerged as a dominant agricultural exporter in the world market (Friedmann, 1993).

increasing portion of their subsidies to green box policies that are expected to be no or minimally impacting production decisions. The Food and Agricultural Improvement and Reform (FAIR) Act of 1996 in the US eliminated target-price deficiency payment and annual land-idling programs, embarking on a bold move toward more production flexibility and fewer direct production incentives and seemingly bolstering the trend toward less government intervention in line with the URAA (Sumner, 2005).<sup>4</sup> However, the Farm Security and Rural Investment Act of 2002 reversed such a trend and introduced larger production incentives such as counter-cyclical payments and deficiency payments for dairy products (Sumner, 2003). The CAP has undergone several notable reforms to date including the Manshold Plan in 1971, Mac Sharry reform in 1992, and the Fischler reform in 2003. In particular, the MacSharry reform substantially reduced support prices for cereals, while the 2003 reform introduced the Single Farm Payment (SFP) as income-boosting policies decoupled from production. In general, farm policy reforms in the US and EU are intended to decouple farm support/subsidies from price and production decisions, thereby attempting to reduce their trade-distorting effects. Cross-compliance is increasingly required for the recipients of farm subsidies.

*Decoupled Subsidies are minimally trade-distorting?*

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<sup>4</sup> Paarlberg and Orden (1996) argue that the legislation of the 1996 farm bill was not an attempt to follow the trend of deregulation in agriculture kicked off by the URAA but a coincident that can be explained by changing party control from Democrats to Republicans (Democrats are more comfortable providing benefits to smaller, high-cost farmers while Republicans prefer to benefit larger-sized competitive farmers and input industries) and market conditions (commodity prices peaked in 1996). In fact, when market prices collapsed in 1998 for major commodities, the US Congress was quick to introduce ad hoc legislations to supplement incomes for farmers participating in crop programs.

Since the late 1980s, the OECD Secretariat has been measuring government support with Producer Support Estimate (PSE).<sup>5</sup> The total PSE increased in the OECD from \$ 239 billion in 1986-1988 to \$253 billion in 2009. Nearly half of the total PSE in 2009 is attributed to the EU (\$121 billion), followed by Japan (\$47 billion), the US (\$31 billion), Turkey (\$23 billion), and Korea (\$18 billion). The %PSE declined on average among OECD countries from 37 % in 1986 and 30 % in 2000 to 22 % in 2009.<sup>6</sup> This indicates that the level of government support relative to the gross farm receipts has been declining modestly (OECD, 2010). Except for Turkey, every OECD country experienced a decline in %PSE between 1986-1988 and 2007-2009 (figures 5, 6, 7, and 8). The %PSE varies widely across OECD countries; the highest in Norway (60%), followed by Switzerland (58 %), Korea (51%), Japan (48%), the EU (22%), and the US (10%).

The composition of government support has changed in most OECD countries: i.e., the share of support based on commodity output relative to other criteria that may not require production as a condition of eligibility declined from 85 % of all support in 1986-1988 to about half of the PSE in 2007-2009, indicating that government support in the OECD countries is becoming increasingly decoupled from production decisions (OECD, 2010). Nevertheless, there have been considerable suspicions about the notion that decoupled policies would be minimally trade-distorting (Baffes and Gorter, 2005). Indeed, Josling (2004) argues that decoupled subsidies do exert substantive impacts on producers' decisions through three channels: (i) any

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<sup>5</sup> The PSE is the monetary value of policy transfers from consumers and taxpayers to producers expressed as a percentage of gross farm receipts. The PSE encompasses both market price supports from border measures (policy measures that maintain domestic prices at levels higher than those at the country's border) and budgetary transfers (policy measures that provide payments to farmers based on criteria such as the quantity of a commodity produced, the amounts of inputs used, the number of animals kept, the area farmed, or the revenue or income received by farmers: payments to input suppliers to compensate them for charging lower prices to farmers; or to subsidise the provision of on-farm services) (OECD, 2009).

<sup>6</sup> The %PSE represents the share of PSE out of gross farm receipts.

payment can encourage production if it relieves income constraints on investment, (ii) even when payments are based on historical acres and yields, expectations of the eventual reassessment of those bases can cause farmers to retain land in production of particular crops, and (iii) safety-net policies that reduce the downside risk of fluctuations in income clearly can have an effect of keeping resources in farming. These possibilities led some researchers to argue that the box system is a device intended to allow developed countries to continue to subsidize their agriculture while forcing developing countries to reduce their border measures including tariff and nontariff quantitative protection (Stringer, 2000; Gonzalez, 2002; Gonzalez, 2004).

### **Comparative Advantage and Competing Theories**

As described above, agricultural protectionism has been pervasive in developed countries, distorting the patterns of international trade in agriculture. Simply saying, free trade or *laissez faire* policies have been absent in agriculture. This section reviews theories relevant to international trade and discusses the role of the state associated with such theories and development experiences during the postwar period in practice.

The classical theory of comparative advantage shows that trade generates gains for both exporting and importing countries even when the exporting (importing) country has absolute (dis) advantages in all the goods traded. Comparative advantage for an industry would arise whenever there are differences in production technology (e.g., labor productivity) among countries. Heckscher and Ohlin (1935) refined the classical theory of trade by underscoring the role of the differences in production factor endowments in determining the pattern of trade. The Heckscher-Ohlin theory suggests that nations would benefit from specializing in the production of goods using their most abundant factor of production. The benefits of freeing trade are

realized *via* two mechanisms: (i) gains from specialization and (ii) enhancement in production efficiency. Gains from specialization arise when countries allocate scarce resources to sectors with comparative advantage, and the literature demonstrates that such gains exist under fairly general circumstances except for cases involving risky economies without markets for risks (Dixit and Norman, 1980; Acemoglu and Ventura, 2002; Bernhofen and Brown, 2005).<sup>7</sup>

Production efficiency is measured by total factor productivity (TFP) and increases in TFP have been shown to come from technology diffusion, competition promotion, and increases in R&D investment (Easterly and Levine, 2001; Hall and Jones, 1999; Keller, 2000, 2004, Kim, 2000; Ferreira and Rossi, 2003; Grossman and Helpman, 1991; Aghion et al., 2001). The benefits of the two mechanisms would manifest in various forms such as lower prices, larger quantities, and greater varieties to consumers around the world and expansion of the global economy as far as the sustainability of environmental and ecological resources (external diseconomies) is ensured by national or global rules. Trade policies following comparative advantage are expected to allow countries to achieve an efficient allocation of scarce resources at the national level. Overall, the classical theory of trade depicts a harmonious global economy coordinated by the invisible hand at the global level.

The first challenge to the theory of comparative advantage was the notion of infant industry protection. Alexander Hamilton, the Secretary of Treasury of the United States formulated trade policies in 1791 to protect US industries in their infancy against imports from advanced British manufacturers. In his book entitled *The National System of Political Economy* published in 1841, Friedrich List advanced infant industry protection as a logical argument why

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<sup>7</sup> For example, see Krugman (1981) for intra-industry specialization, Markusen (1981) for imperfect competition, Markusen (1984) for multinationals and multi-point economies, and Dixit and Norman (1984) for trade without lump-sum compensation.

late-industrializing German businesses should be protected against competition from more advanced British manufacturers. Analytically more elaborate critics on the mainstream thinking of trade emerged from within itself in the 1970s. Despite the prediction of the classical theory that there would be large trade flows across countries with different technologies and factor endowments and small trade flows between similar countries, empirical trade data shows that trade volume between countries with similar technologies and factor endowments is also large and the majority of trade flows is not across industries but within industries (Grubel and Lloyd, 1975). This disparity between the classical trade theory and the real world observations gave birth to the new trade theory, which identified features like increasing returns of scale, imperfectly competitive industries, product differentiation, and externalities as potential causes of international trade in addition to differences in technology, factor endowments, and tastes (Krugman, 1979, 1980; Helpman and Krugman, 1985). The new trade theory establishes that the presence of such features presents an opportunity for a country to use intervention policies (import restrictions or export subsidies) and increase its welfare level, thereby contradicting the preaching of the classical trade theory that any kind of trade interventions is welfare-reducing.

While not very well accepted by economists as a theory explaining international trade, the theory of the “Competitive Advantage of Nations” by Porter (1990) has received a great deal of attention from the management/strategy science. Dissatisfied with the existing theories of international trade in explaining why nations succeed internationally in some particular industries, Porter intended to develop a new paradigm that can better explain trade and investment patterns across countries and the role of a nation’s economic environment, institutions, and policies in international competition of firms. Porter’s theory of competitive advantage identifies four types of national attributes underlying the determination of the

competitive advantage of a nation: (1) factor conditions (human resources, physical resources, knowledge resources, capital resources, and infrastructure); (2) demand conditions (the size of the home demand and the sophistication of home country buyers as determinants of the international competitiveness of countries); (3) firm strategy, structure, and rivalry (systematic differences in the national environment determining strategies and structures of firms across countries); and (4) related and support industries (i.e., specialization causing immovable location advantages arising from the existence of external economies due to local clustering). In addition to the four sets of attributes, Porter poses government policies as another factor of importance exerting influences on the international competitiveness of firms.

Some researchers argue that the theory of the competitive advantage of nations is a framework that helps us better understand the international competitiveness of firms, yet it does not amount to a new trade theory given that it does not explain why all countries benefit from trade and it is not about the international competitiveness of nations but of individual firms (e.g., Smit, 2010; Warr, 1994). They contend that Porter's theory should be considered as a tool useful for management practitioners in identifying country sources of competitive advantage and making informed managerial decisions. Overall, Porter's theory is not positioned to replace comparative advantage as a theory of trade. Nevertheless, it is of value in the sense that it identifies a number of factors (the importance of firm strategies, related and support industries (clustering), and government policies) that would contribute to determining the international competitiveness of firms and particular industries in addition to the traditional factors associated with the theory of comparative advantage such as production costs, factor endowments, economies of scale, and market structure.

## **The Role of the State in Theories and Practices**

The role of the state in shaping an economy is a topic of perennial controversy in economics and other social sciences. In neoclassical economics, the state is supposed to provide an institutional framework for protecting private property rights and correct market failures (externalities, public goods, and imperfect competition). Neoclassical economics renders the market the most prominent institution in charge of allocating scarce resources in an economy with the state and the firm playing a supporting role. The efficiency of an economy would be maximized in neoclassical economics when the state does little else, given that the market has a self-regulating mechanism. In general, the liberal theory posits that the state is an unprejudiced organization coordinating conflicts across diverse interest groups guided by impersonal market forces and able to achieve harmonious results. The libertarian theory (public choice school) posits that the state consists of politicians and bureaucrats who have agendas in support of their own interests rather than the interests of voters or national interests. The Marxists postulates that the state serves the interests of the capitalists. In development theories, the state may be an authoritarian developmental state dedicated to accelerating industrialization and modernization in a developing country so as to catch up with advanced economies. Positive political economy poses the state as an organization designed to coordinate conflicts among various interest groups given constitutions and laws within the state. According to this view, the state may or may not have its own agenda or autonomy, but it is an organic entity influenced by various forces within its political/economic system. Differing from the liberal view, the positive political economy approach clearly recognizes conflictual (rather than harmonious) relationships among various groups, which may not be easily coordinated by market forces therefore creating room for political forces to weigh in.

When it comes to the role of the state in international economic relations, the field of International Political Economy (IPE) present diverse theories (world views) such as economic liberalism, neo-Marxism, statism, nationalism, mercantilism, and realism. The various theories permit divergent interpretations of the state in international relations. While the individual consumer/firm is the unit of analysis for inquiries in the liberal tradition (classical economics, neoclassical economics, neoliberalism, positive political economy), the state is the formal unit of analysis in other IPE theories, hence playing a key role in determining interstate economic relations. For example, the realists view interstate economic relations as conflictual and neo-Marxists view the world as consisting of core (industrialized) and peripheral countries with the former exploiting the latter.

#### *The Washington Consensus vs. The Post-Washington Consensus*

The divergence in thinking about the roles of the state and free trade in economic development between the mainstream and dissenting schools is well illustrated in the controversy surrounding the so called “Washington consensus.” The Washington consensus refers to a set of guidelines for developing countries’ policy reforms centered around macroeconomic stabilization, liberalization for trade and investment, privatization of state enterprises, and deregulation (Williams, 1990). The Washington consensus policies were practiced in the 1980s and 1990s by the Washington-based international financial institutions (World Bank and IMF) and the US Treasury in the name of the structural adjustments program as a conditionality associated with the offering of foreign aids to developing countries. The consensus policies were rooted in a firm belief in unfettered markets and the minimal role of government in protecting property rights and enforcing contracts. The Washington consensus was deeply influenced by the

neoliberal thinking that was fostered intellectually by Milton Friedman and Friedrich Hayek, and promoted politically by Ronald Reagan and Margaret Thatcher. Neoliberalism was in enthusiastic support of the Washington consensus policies as a development model alternative to Keynesianism and national developmentalism associated with the structuralist development thinking.

It is widely shared, however, that the Washington consensus policies have failed in moving forward the economies of the developing world (Gore, 2000; Rodrik, 2006; Stiglitz, 2008; Birdsall, de la Torre, and Caicedo, 2010). Indeed, they contributed to the Mexico crisis, the East Asian crises, the Russian crisis, and the Argentine crisis and left many developing countries (particularly in Sub-Saharan Africa and Latin America) going backward in terms of per capita income. The failure compelled some researchers to view the Washington consensus policies as like “kicking away the ladder,” a phrase that List coined in his book (entitled *The National System of Political Economy* published in 1841) to portray the behavior of Great Britain preaching to other countries (including Germany) to liberalize their economies only after it had gained comparative advantage in the manufacturing sector in the 19<sup>th</sup> century in part as a consequence of protecting it for long since the 15<sup>th</sup> century (List, 1841; Athukorala, 2011). In particular, showing historically how now-developed countries including the US and Great Britain used a variety of protectionist policies during the early stages of their economic development to promote their own infant industries against imports from more advanced countries, Chang (2002) revived the same phrase in his book (entitled *Kicking Away the Ladder*) to highlight the gravity of allowing the policy space for developing countries to use tariffs, subsidies, public investment, and export promotion as an alternative development strategy to the Washington consensus. For List, Chang, and others advocating infant industry protection policies and other judicious

government actions, the developed world's preaching of free trade and *laissez-faire* to developing countries is like covering up the protectionist policies that have worked very well for themselves.

The flaws of the Washington consensus policies became even more evident when contrasted with the success of East Asian countries including Korea and Taiwan during the periods between the 1960s and 1990s. While relying on outward-looking development policies focused on export promotion, the governments of the East Asian countries were engaged in a broad array of government interventions ranging from import restrictions (tariffs and qualitative barriers), export subsidies, industrial policies, and control of the allocation of financial capital. The export-oriented strategy was a development thinking seemingly in stark contrast with the import substitution industrialization (ISI) strategy that was adopted by many countries in Latin America between 1960s and 1980s. The ISI strategy was carved out from the neo-Marxist tradition (particularly the neo-structuralists' conceptions of international relations as reflected in the dependency theory that divides the world into two groups of countries: core industrialized countries in the North and underdeveloped periphery countries in the South. Since the periphery countries are destined to undergo the vicious cycle of the development of underdevelopment given the permanent structural constraints of exploitative relationship between the core and periphery countries that have been solidified through colonial and imperial periods for many centuries, the ISI strategy contends that the developing world should protect domestic industries and continually substitute imports until it becomes fully industrialized, hence called "inward-looking development strategy".

The sluggish performance of the ISI strategy in the 1960s and 1970s provided a good reason for Latin American countries to embrace the neoliberal Washington consensus policies.

When contrasted with the ISI strategy, the export-oriented strategy is clearly more open and outward-looking, and therefore international financial institutions and liberal economists used to pick the East Asian countries as a triumphant story of the free trade doctrine and economic liberalism. Yet, they were hesitant to acknowledge the fact that the state has played a proactive role in the region in guiding/managing the systemic process of economic development (while remaining authoritarian politically); in provisioning the infrastructure needed for markets to grow to function well; and in cultivating dynamic comparative advantages for selected industries. Learning from the experiences of Korea and Taiwan, other Asian countries including China and Viet Nam followed the East Asian development model and have exhibited remarkable performances in growing their GDP. Such countries' development paths are formally referred to as the so called (authoritarian) 'developmental state' in the literature and recognized as a distinctive model of development appropriate for certain developing countries aspiring to catch up with the developed world.

In contrast with the Washington consensus relegating the role of the state to the mere provision of institutional frameworks for protecting private property rights and correcting market failures, the role of the state in the developmental state model is far-reaching encompassing the management of trade, risk sharing, control of capital outflows, selecting industries (picking winners) that would have the greatest spillover effects on the rest of the economy and subsidizing them. The experiences of the East Asian countries over the last decades show that the role of markets would expand in parallel with the growth of the economy. Imperfect markets would grow to be rectified and become more competitive by the entrance of new domestic or multinational firms. Further, political authorities would recognize the economic needs to create markets in areas like risks, information, or entrepreneurs that are typically absent

in the early stage of economic development of a country. At the same time, the role of the state would begin to shift to other areas such as labor/capital market reforms, social safety net programs, environmental/ecological problems, and educational/technological development issues.

The failure of the Washington Consensus coupled with the rise of the developmental state (particularly the rise of China and India in the 1990s) brought about a revisionist thinking known as “the post-Washington Consensus”, a term that Joseph Stiglitz used as the Senior Vice President for the World Bank while assessing the outcomes of the past development policies (Stiglitz, 1998). The central point of the post-Washington consensus is that the WS relied too much on market fundamentalism, possibly carried away by the prevalence of neoliberalism as a policy paradigm since the 1980s. The post-Washington consensus indicates that there was a lack of understanding when markets work, when they do not work, and what are needed for markets to work. It is now increasingly recognized that markets are not naturally occurring or spontaneously functioning institution and therefore markets need to be developed with the infusion of such factors as competition, information, fair rules, trust, risk/uncertainty handling, physical infrastructure, strong enforcement of laws, adaptability to evolving technology) into appropriate places (North, 1994). In addition, critics indicate that the WS put too much trust on static comparative advantages rather than dynamic comparative advantage and took a too simplistic mantra that the state is the problem but not the solution and government failures are destined to impose greater harms than market failures. The post Washington consensus acknowledges that it takes time for markets to develop and function properly; there should be appropriate balance in the roles of the state and markets; and one-size-fits-all strategy does not work for all developing countries.

## **Contrasting International Trade in the Agricultural and Manufacturing Sectors**

The preceding discussion shows that, while free trade offers a number of mechanisms through which net economic benefits are generated for all states involved, there is considerable room for states to use protectionist trade policies and increase their national wealth. It should be fair to state that free trade is not a universal policy guidance that is applicable to every case regardless of space/time and the type of industries involved. This section presents an analysis of what role the state plays in determining international competitiveness of agricultural commodities and the pattern of agricultural trade, particularly when compared to the manufacturing sector.

Before probing the role of the state in agricultural trade in depth, it is needed to clarify two issues of analytic importance. The first issue concerns the question of what is the unit of analysis when researching agricultural trade. Economic theory of trade is based on the fiction that states trade with each other (i.e., national governments make international transactions with each other), indicating that the unit of analysis of international trade is the state. In practice, international trade, however, involves economic transactions between private firms (importers and exporters) in different countries, although state trading represents one form of international trade in the agricultural sector at the present time. The second issue is about what commodities/products are included in agricultural trade. While agricultural trade in general encompasses both raw food and nonfood commodities and processed/manufactured food products, the analysis in this paper identifies agricultural trade in a narrower scope that incorporates international trade in raw unprocessed agricultural commodities such as grains/oilseeds (rice, wheat, corn, soybean, barley, oats, rye, feed grains, coarse grains such as

millet and sorghum). Processed/manufactured food products would then belong to the manufacturing sector.

With the two caveats in mind, we examine below how the agricultural and manufacturing sectors differ regarding two questions of importance in analyzing the effects of international trade and trade liberalization: (i) who makes decisions about the international transactions and (ii) what determines international competitiveness of the products traded.<sup>8</sup> In the case of the trading of manufactured goods, it is the private business firms that would identify markets; decide whether or not to enter international markets depending on the international competitiveness of their products; and perform all transactions needed for exporting their products. Firm level strategies (e.g., investment, R&D) are therefore important in determining the trade patterns of the manufacturing sector in addition to natural comparative advantages inherent at the state level.

In the case of the agricultural sector, agricultural commodities (e.g., grains, oilseeds, feed grains) are produced by farmers, assembled by grain handlers or cooperatives, and exported internationally by trading firms, which are large multinational corporations controlling procuring, selling, financing, and delivering to importing firms or state trading agencies around the world. That is, farmers are neither the ones who make decisions whether or not to enter international markets nor are the ones who invest in R&D and attempt to develop new technologies. Agricultural production efficiency/technology is determined by public investments

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<sup>8</sup> The term international competitiveness is used differently from comparative advantage. While comparative advantage is a concept defined at the country level, international competitiveness is defined at the firm level, indicating that, depending on the effectiveness of long-term strategies, individual firms may be able to overcome comparative disadvantages and export their products to foreign countries.

in agricultural technology, extension services, and rural/farming infrastructure.<sup>9</sup> Farm producers simply decide whether or not to adopt new technologies. Strategies and public policies at the state level are therefore pertinent in determining the pattern of agricultural trade in addition to natural comparative advantage.

In short, international competitiveness is determined basically at the firm level for the manufacturing sector (assuming that institutional and technological environments at the state level remain constant) and at the state level for the agricultural sector. Reducing barriers to trade in the manufacturing sector are likely to open up exporting opportunities for a greater number of firms around the world, thereby promoting competition in international markets and compelling them to become more lean and better organized; reduce costs; improve the quality of their products; adopt new technologies; or invest in R&D to develop new technologies so as to outcompete rivals, secure greater market shares, and earn higher profits. The added competition among firms in international markets would benefit consumers around the world with potentially lower prices, higher quality of products, and/or greater varieties of products. The role of the state is merely to ensure that the firms follow environmental and labor regulations that would meet international standards.

For the agricultural sector, the state matters a great deal in determining the effects of trade liberalization. Reducing barriers to trade in the agricultural sector will first send signals to trading corporations, grain handlers, and governments. Then, the signals will be transmitted to farmers through market and nonmarket (e.g., public extension services) channels. Based on the indirect (transmitted) signals, farmers may or may not alter their decisions regarding what to

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<sup>9</sup> In addition, input supply business firms (seed; machine; fertilizers; herbicides; pesticides) are in a position to influence agricultural production technology. In theory, if the input supply firms operate globally, farm producers around the world should have equal access to new technologies provided by the input supply firms.

produce (crop mix), how much (acreage), and how (technology adoption). In countries with comparative advantage in agricultural production (natural resource endowments favorable to agriculture), farmers are likely to receive signals to expand their production; and farmers in countries with comparative disadvantage in agricultural production would receive signals to reduce their production. The adjustments in production between countries based on natural comparative advantages would foster a specialized system of agricultural production at the global scale. Yet, states' long-term strategic investment in agriculture (compatible with international trade rules) may promote technological innovations, reduce costs or improve productivity, potentially enhancing international competitiveness of their agricultural commodities, or reducing the need for imports or producing surpluses and exporting them. Hence, the entities attempting to develop newer technologies are not farm producers but national governments (and input supply business corporations).

The point is that whereas individual firms are in a position to determine their competitiveness in the manufacturing sector, it is the state that plays the remaining role in determining the competitiveness of agricultural raw commodities once the endowments of natural resources and initial labor productivity shapes natural comparative advantage and trade patterns.

#### *Differences in the Benefits of Freeing Trade in the Agricultural and Manufacturing Sectors*

The difference above between the agricultural and manufacturing sectors has an important ramification in uncovering what types of benefits are realized when trade is liberalized. As noted earlier, the benefits of free trade occur through two mechanisms: gains from specialization (scarce resources are allocated more efficiently across the world) and dynamic improvements in

production efficiency due to greater competition and new technology adoption/diffusion. While the manufacturing sector enjoys both benefits, the agricultural sector is not likely to experience dynamic improvements in production efficiency. Once international competitiveness of agricultural commodities is determined by comparative advantages at the state level, freer trade offers little additional incentive for individual farm producers to reduce costs or adopt new technologies (or farmers have few leverages available to them to improve their international competitiveness) for the purpose of enhancing export opportunities, although states may be motivated to invest more in improving agricultural infrastructure and promoting agricultural technologies.

Indeed, researchers have attempted to quantify the magnitudes of the economic impacts of removing farm subsidies/programs and other trade barriers and the costs of farm programs in terms of foregone welfare to consumers and producers and distortions in the world markets. For example, Diao, Somwaru and Roe (2001) measures the impacts of reforms in market access, export subsidies, and trade-distorting forms of domestic support on production, trade, and economic welfare. They reported that: (i) the value of world trade in agricultural commodities would increase by 30 percent, while the level of total agricultural production remain unchanged (production declines in developed countries while increasing in developing countries); (ii) aggregate world prices of agricultural commodities will rise by over 11 percent; and (iii) global welfare gains by about \$55 billion (developed world \$28 billion; \$9.3 billion for the EU, \$8.6 billion for Japan and Korea, and \$6.6 billion for the US) and \$2.6 billion for developing countries. Hertel and Keeney (2006) estimate that eliminating all agricultural subsidies and moving to complete free trade would boost the global welfare by \$151 billion a year which is nearly three times the amount of foreign aids and comparable to the amount of foreign direct

investments (FDIs) from developed to developing countries. van der Mensbrugghe and Beghin (2005) estimate that reforming agricultural policies and trade would bring global welfare gains by the magnitude of \$ 265 billion. While less than 1 percent of the global income, they contend that such reforms would have substantial effects on the structure of global agriculture, causing considerable adjustment and displacement of agricultural resources within countries and across the world. Although providing insights helpful in understanding the magnitudes of distortions brought by government subsidies and other trade barriers, the above studies demonstrate benefits from trade in the form of specializations in production across the world but not from gains in productivity via competitive processes of creative destruction after the initial specializations.

In sum, trade liberalization can be expected in general to deliver benefits in the forms of lower prices, larger quantities, higher product quality, and greater varieties for the case of the manufacturing sector. For the agricultural sector, the initial process of specialization of production across different countries of the world kicked off by trade liberalization would lower prices and produce higher quantities in theory (in the real world, trade liberalization would initially increase the prices for the commodities that developed countries have subsidized during the postwar period once subsidies are eliminated). However, given the passive role of farm producers in international trade and their lack of leverages to become more innovative (cost reducing; increasing yields) beyond the ones existing in domestic markets once a particular configuration of the specialization of agricultural production is established, then there are not likely to be much further benefit that may be realized through competition and subsequent creative destruction processes (entrepreneurial innovations) among firms, which are present in the case of trade liberalization in the manufacturing sector.

## **Conclusions**

Recognizing the prevalence of agricultural protection across developed and developing world, this paper questions the appropriateness of the theory of comparative advantage in explaining international trade in agriculture and considers various alternative theories including the new trade theory (strategic trade theory), the theory of infant industry protection, and Porter's theory of competitive advantage of nations. While the state does not play a significant role in the theory of comparative advantage, it is an important part of the alternative theories of trade. Therefore, they may be able to shed more lights in explaining agricultural trade that has been severely distorted by various types of government interventions over the last century.

This paper attempts to show that it is the state that would determine international competitiveness of agricultural commodities (unprocessed) and the pattern of agricultural trade once natural resources and factor endowments shape comparative advantage. That is in contrast to the manufacturing sector in which firm level strategies would determine international competitiveness of manufactured products. This difference implies that free trade in the manufacturing sector would bring about economic gains by promoting competition and creative destruction processes (entrepreneurial innovations) among firms. But there may be no such gains in the agricultural sector, because farmers do neither face greater competition nor undergo creative destruction processes among themselves once international competitiveness of agricultural commodities are determined by comparative advantages at the national level. In other words, freer trade offers little additional incentive for individual farm producers to reduce costs or adopt new technologies (or farmers have no leverages available to them to improve their international competitiveness) for the purpose of enhancing export opportunities. Yet, when a state has the desire to become an exporter in some agricultural commodities or to strengthen domestic production capacity, it can craft long-term strategies; make investments in

strengthening agricultural infrastructure or in developing new technologies (in cooperation with private sectors); reduce costs; and produce commodities of higher quality, thereby potentially improving international competitiveness. Hence, what goals states have in relation to their agriculture would determine the international competitiveness of agricultural commodities and the pattern of agricultural trade in the long-term.

As shown earlier, there are a number of studies showing the magnitudes of the economic impacts of removing farm subsidies/programs and other trade barriers and the costs of farm programs in terms of foregone welfare to consumers and producers and distortions in the world markets. However, they are of limited use as rationales for liberalizing agricultural trade for the following reasons. First, the bulk of the welfare changes occur to consumers in developed countries who are becoming increasingly insensitive to the prices they pay for food commodities given the small share of food expenditure in their household budgets (less than 10 percent). In addition, the budgetary outlays of farm subsidies are spread across a large group of taxpayers. Second, with a primary focus on economic efficiency, the above analyses ignore the fact that a considerable portion of agricultural protection is designed to address legitimate issues related to instability inherent in agricultural production and markets. These reasons explain why agricultural protection in the developed world has received so little resistance from consumers and taxpayers. Third, when the gain occurs to farmers, it will be concentrated to those in large middle-income agriculture-exporting countries at the expense of farmers in other regions such as LDCs and the Far East Asia (Fabiosa et al, 2005; van der Mensbrugge and Beghin, 2005).

The implication of this study for developing or food insecure low income countries is that the state should play a proactive role in using agricultural trade as a strategy of advancing agricultural/economic development particularly in consideration of the strong evidence that

agricultural growth is indispensable for overall economic growth (Gollin, Pabente, and Rogerson, 2002; Tiffin and Irz, 2006; Self and Grabowski, 2007). The state should make major investments in the initial stages of economic development for building agricultural production capacity (through public investments in R&D and extension services) and constructing/fostering the markets for agricultural inputs (credits, risks, information, transportation, managerial). The directions suggested by policy paradigms such as laissez-faire, free trade, market fundamentalism, neoliberalism, or the Washington Consensus are not very well suited for agricultural development/markets. Even agricultural production and markets in developed countries would not be able to maintain farm/rural economic stability or vitality without public actions (state interventions) in areas like dealing with uncertainty, risks, safety nets, infrastructure, technical assistance, information provision, and other extension services.

Advancing agricultural development in low income countries should be a steady and sustained process of building public institutions for provisioning physical infrastructure and assisting markets to rise and function efficiently, which is exactly what developed countries have done to develop their agriculture (Chang, 2009). Markets are not self-rising, self-sustaining, or self-correcting especially for agricultural commodities. Market failures (imperfect markets or missing markets) arising in the process of agricultural development should not be left unaddressed because of the fear of government failures. Developing countries may experience government failures, but they would experience institutional learning, too. The successful experiences of the developmental state model in East Asia should prove to be a good example showing that such learning do indeed take place in practice.

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Figure 1. Trends of the share of agricultural trade in total merchandise trade: 1961-2009

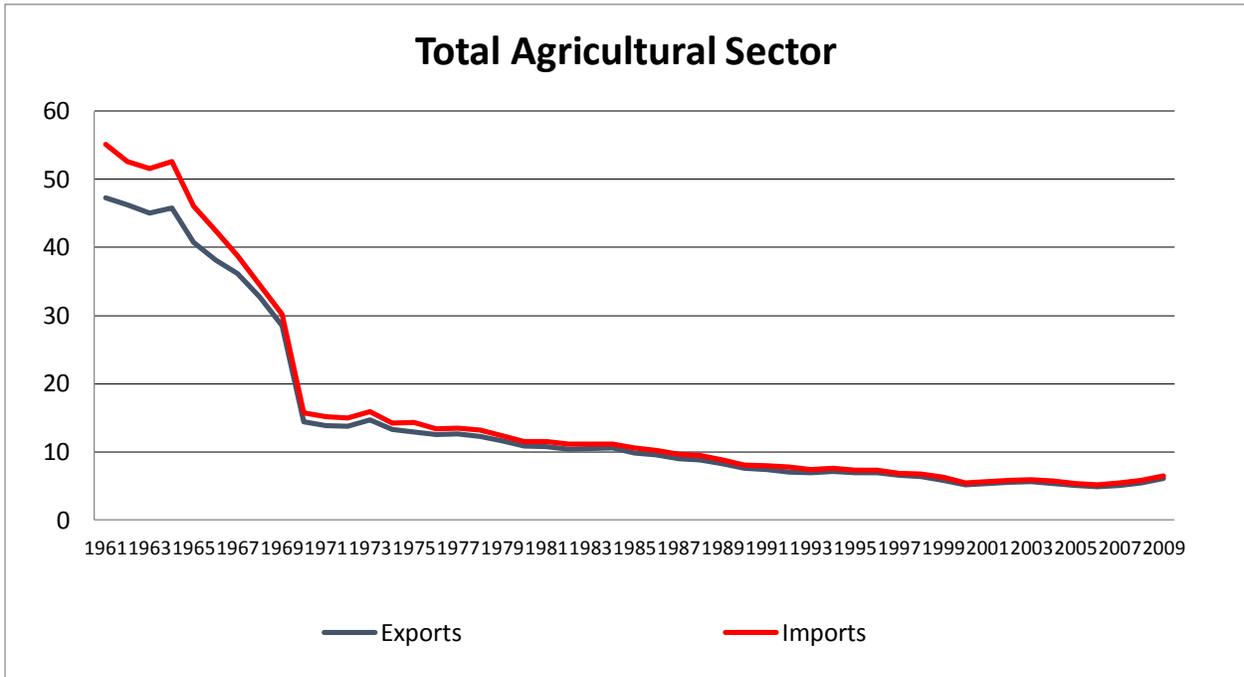


Figure 2. Trends of the share of agricultural trade out of total merchandise trade: 1971-2009

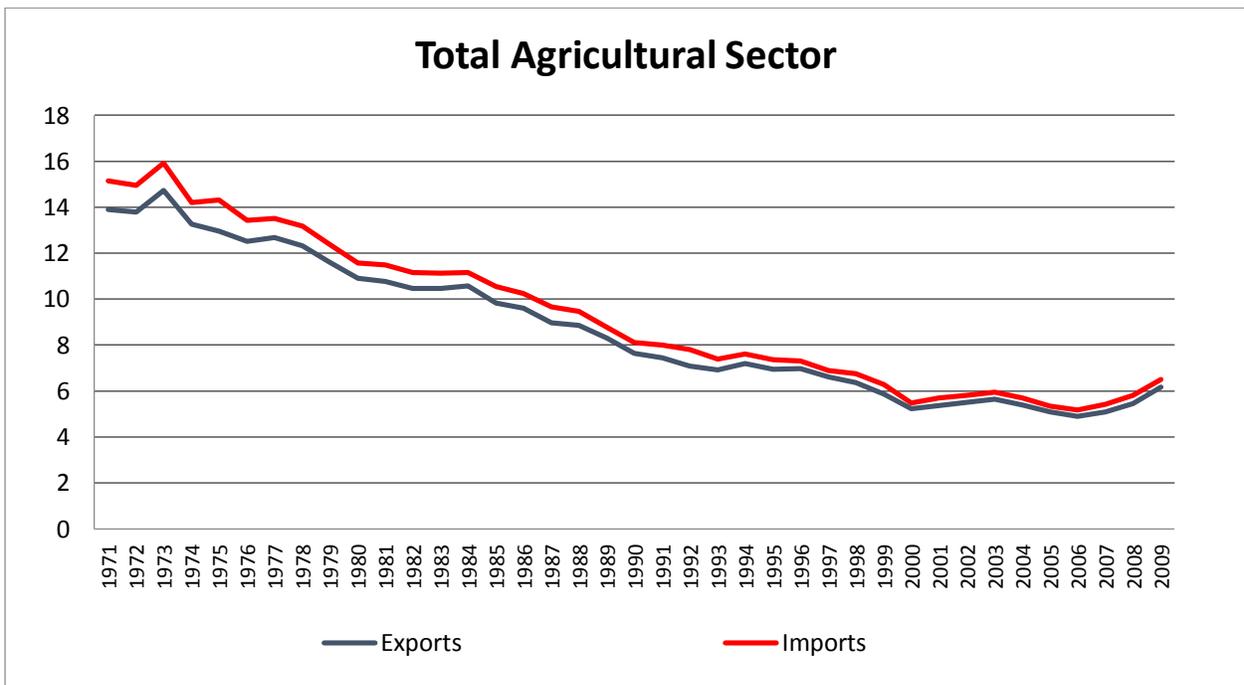


Figure 3. Trend of the share of bulk commodities in agricultural trade.

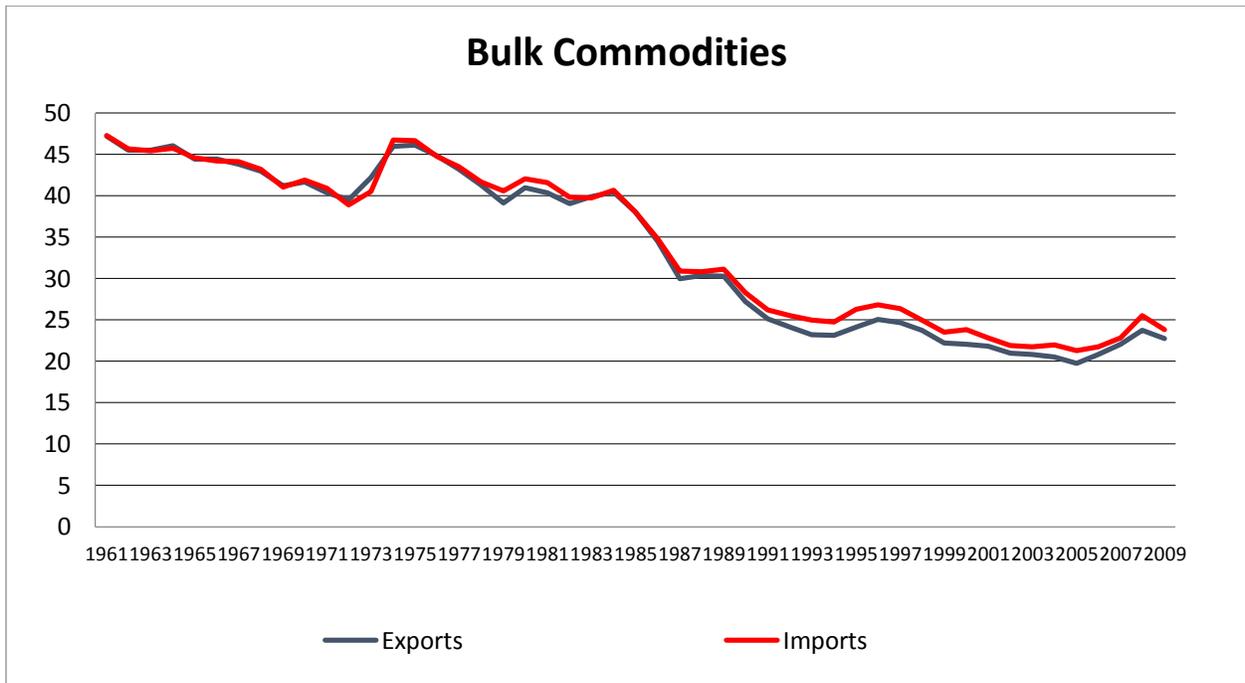


Figure 4. Trend of the share of processed and semi-processed commodities in agricultural trade

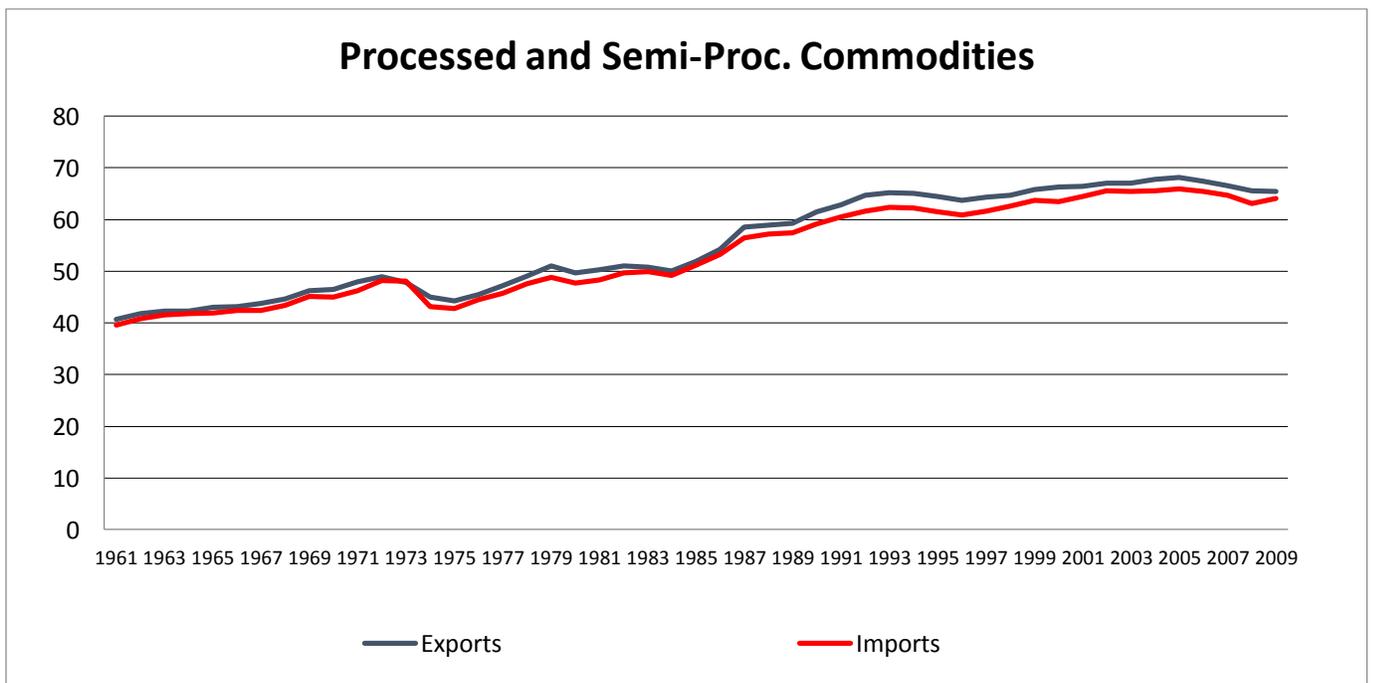


Figure 5. Trend of NRAs for advanced, emerging, and other developing countries

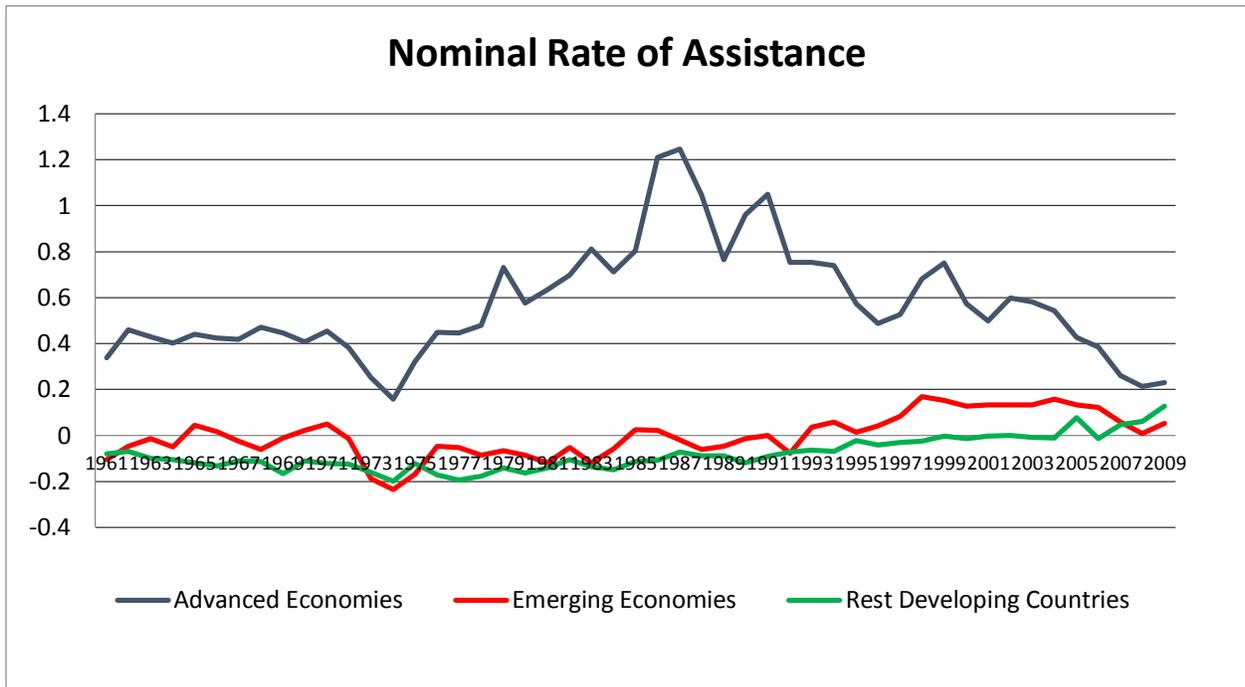


Figure 6. Trend of gross subsidy equivalent for advanced, emerging and other developing countries

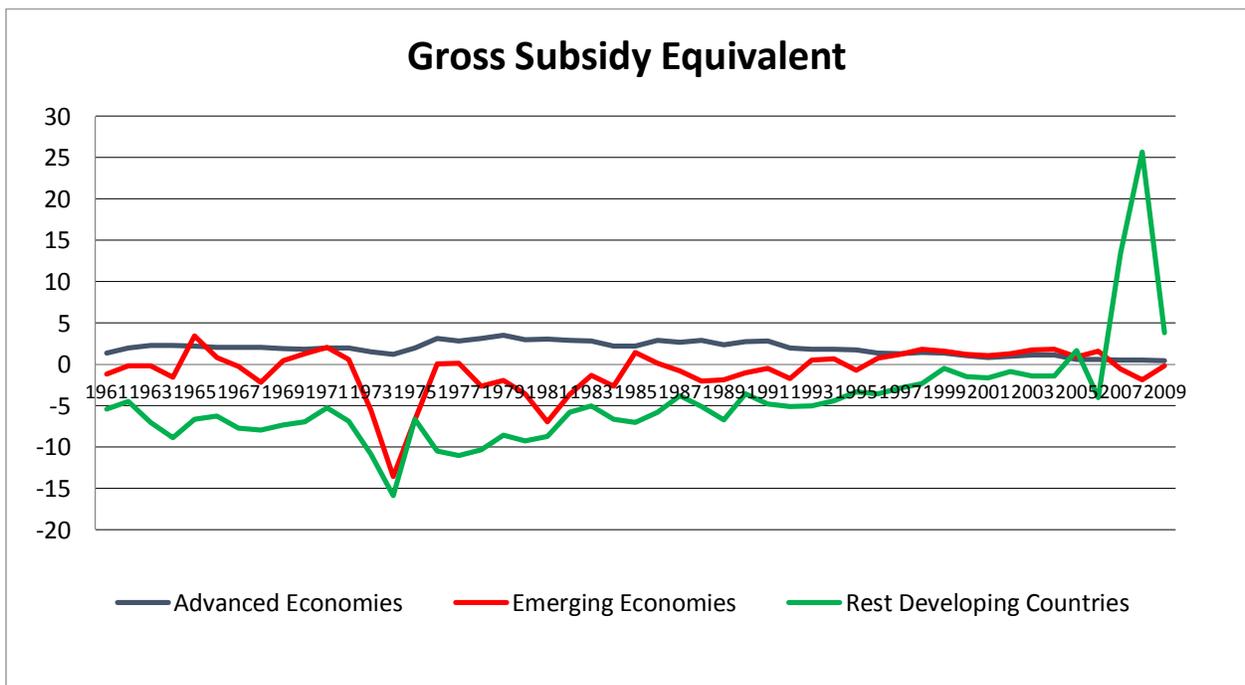


Figure 7. Trend of PSEs for OECD countries and the EU

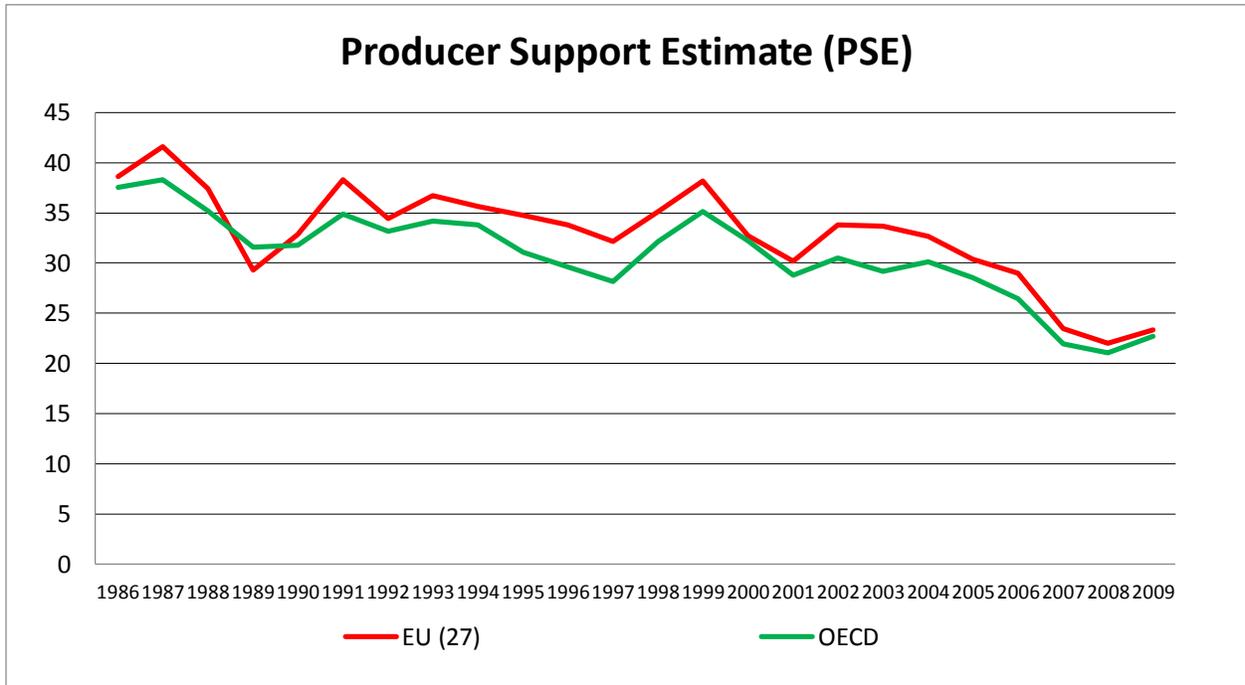


Figure 8. Trend of Consumer Support Estimates (CSEs) for OECD countries and the EU

