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Contents

Abstract

The global economic crisis sent world trade volume and world production into retreat and threatened a second Great Depression. There has emerged a consensus that global imbalances—fundamentally reflected in the over-reliance upon the United States (US) consumer market—that built up over the first decade of the 21st century are no longer sustainable. Deficit regions led by the US will have to increase *net exports* in real terms in order to restore living standards and employment. Surplus regions, Asia, in particular, will have to rely more upon domestic demand and will have a substantial role to play as growth centers for *net imports* from the rest of the world. This paper examines the composition and prospects for growth of US net exports to the world and to developing Asia. We find that much of the apparent shift in export product shares was a result of the worldwide collapse in demand for high-technology products particularly new aircraft and information technology products. Nonetheless, India, ASEAN-10, and the newly industrialized economies are destinations for US high-technology products to an even greater extent than for the world as a whole. In contrast, the People's Republic of China tends to import a lower portion of high-technology products but a larger share of agriculture-related and raw materials and energy products than the world as a whole.

I. Introduction

During the high-growth years prior to the global financial crisis, developing Asia's prosperity was furthered by the United States (US) absorbing much of the large and expanding volume of global exports. Merchandise trade deficits of the US during 2006–2008 averaged nearly $1 trillion annually, providing a strong and steady external market for the world's exporters, particularly those in developing Asia. Before the crisis, the US trade balance had started to adjust, with net exports expanding at a modest pace in 2007–2008. With the onset of the crisis, however, US trade—and with it, world trade—contracted. The US trade deficit fell by one third in 2009 as its imports collapsed even faster than its exports. Coming out of the crisis, US households and firms will have to reduce their debt by saving a higher share of disposable income and profits, which will further narrow the trade deficit in the short term. Whether the US can sustain the increase in exports relative to imports in the long term is an open question. What industries are emerging from the rebalancing of US trade and how will this affect developing Asia?

The objective of this paper is to examine the composition of US net exports to developing Asia by level of factor intensity, and to draw implications for its growth prospects. At the outset, however, several generalizations and perhaps one or two myths have to be laid aside. First, the large current account deficits that the US had run in most years of this century are neither desirable nor sustainable. There was some substance to the view that the US current account deficit (reaching almost $1 trillion per year in nominal dollars for the period 2005–2008) could be "a good thing" for export-oriented economies. However, from a development standpoint, it made little sense for one of the richest economies on the planet to be hoarding global savings in order to finance its own investment and consumption demands. This lies behind the paper's emphasis on *net exports* defined as the sales of US domestic exports abroad over purchases of imports for domestic consumption. The growth of US net exports is seen as a strong correction of recent consumption and housing bubble-driven growth.

Global imbalances had become excessive and were a clear flashing light that trouble lay ahead. The US must expand net exports to fuel growth while reducing external debt and allowing more of the globe's savings pool to flow to where the risk-adjusted returns are highest—in the fast-growing regions such as those in developing Asia, Latin America, and the few bastions of hope in Africa and the Middle East.

The next myth/generalization to be cleared away is the idea that the US cannot compete internationally and that it is no longer a dynamic, export-oriented economy. The data,

which will be discussed in detail in the next section, suggests that the international competitiveness of the US is broad-based and covers a very wide swathe of industries. The US remains the preeminent producer and exporter of many high-technology products—indeed these account for the largest real volume of US net exports in recent years.[1] This competitiveness derives from many scientific and research advantages including the US education system, particularly the tertiary or university system (Cole 2009). While the US education system has some flaws, overall the quality of the colleges and universities has raised the country's performance in scientific achievement. Realization of the technological, engineering, and marketing required for competitiveness has mostly been through the modern multinational corporation—another area where US exports have declined somewhat in relative terms but still remains preeminent in the world at large.

The recognition that international trade has a significant role in global economic growth prospects has been celebrated in endogenous growth modeling (Acemoglu 2009) and has also been featured prominently in research using computable general equilibrium models. Both approaches suffer from weaknesses in underlying theoretical foundations and also lack strong empirical grounding. However, more research and careful specification of variables is likely to lead future research to bear more fruit. Trade in differentiated products and related studies of multinational enterprises seems to be particularly useful in demonstrating effective links between technological progress, industrialization, and new goods, and the diffusion of technology in industrialization. This is clearly the case in East Asian industrialization processes (Oshima 1986 and 1993).

That brings us to the myth that Asia's growth is purely export-oriented and does not owe as much to the import side of the trade equation. We propose that now is the time to debunk this myth as Asia must come to terms with emerging challenges in energy use, production, and consumption; with health challenges from an aging work force and population; and with an environmental challenge of utmost importance to the ability of our globe to continue to support the emergence of new prosperity, and to safeguard the advances of the past few hundred years. Fortunately, the US and other western economies are well situated to help overcome these challenges that Asia cannot face or solve alone.

The paper is organized as follows. Section II describes the data, particularly in terms of the factor intensity of US real net export flows to various countries, to show that the international competitiveness of the US is broad-based. Section III reports the statistical correlation between US real net exports to the world and to developing Asia as a whole and for the various key countries and subregions (the People's Republic of China [PRC], India, newly industrialized economies [NIEs], and Association of Southeast Asian Nations [ASEAN]). Section IV discusses the trends of US real net exports by level of factor intensity. Section V concludes.

[1] Due to data limitations, the important services area had to be excluded.

II. Data on and Competitiveness of US Products

For the US to rebalance its growth while reducing external debt, the general consensus has been to produce more than consume, and to increase exports (Rosen 2009). Citing the growing dependence of the US economy on foreign capital as the root of the recent economic havoc, the only way out, while maintaining or even improving the US standard of living, is to expand exports. Given its level of economic development, there are many products that the US has comparative advantage in, or sectors where production innovations are ahead of or have adapted to those emerging abroad. To analyze which product to expand or which sectors have sustained manufacturing capabilities, one only needs to look at net exports to immediately see the correction. There are various indicators to analyze industrial competitiveness, but as the goal of this paper is to immediately see which industries are showing signs of rebalancing, we will analyze trade data in net terms.

One reason for the use of net exports as a measure of competitiveness is that it allows for trade size and intra-industry trade, which limit other indicators. *Exports by industry as a share of total exports* for instance, tends to be biased by the value of the product itself. For example, it would be a mistake to assume that US exports of vehicles are more competitive than exports of agricultural products, purely because the former has a higher value than the latter. The *ratio of exports to imports* on the other hand, though effective in determining industrial competitiveness, is less meaningful at higher levels of industry aggregation because of intra-industry trade, i.e., in vehicles, food and beverages, computers, and minerals. The US, for instance, exports trucks and imports cars, but since both are included under the same 2-digit industry classification, i.e., vehicles, the overall result may be difficult to interpret.

Another important measure, the Revealed Comparative Advantage (RCA) index of Balassa (1986), which looks at the product's share in the country's exports in relation to its share in world trade, also has its own set of criticisms. It helps identify which products meet the test of international competition, but a high RCA score does not imply that similar industries in less developed countries cannot compete in international markets. In some product categories, RCA scores in some Asian economies have improved over the years.[2] In addition, countries with similar RCA profiles are less likely to have high bilateral trade intensities if they trade with each other due to product competition unless intra-industry trade is involved, or if intercountry differences in tastes and interindustry disparities in the extent of protection would prevail (Bender and Li 2002). Some of these domestic measures, however, such as local subsidies or foreign trade barriers, have nothing to do with comparative advantage, thus the index may also be biased (Bender and Li 2002, Ng and Yeats 2003). Hence, though not a perfect measure, this paper uses

[2] For earlier RCA computations of selected Asian economies in production components, see Ng and Yeats (2003); see also Bender and Li (2002).

real net exports because it immediately shows the impact of the global economic crisis and the correction.

To analyze this, we used trade data from the US International Trade Commission (USITC), which were compiled into detailed product categories (specifically, the 4-digit level of aggregation in the harmonized system of tariff classifications). The detailed product groups were then grouped by factor content into four broad categories, namely high-technology manufactures (HT), low-technology manufactures (LT), agriculture-related (AR), and raw materials and energy (RME). Next, the data were examined for the group of economies that account for the bulk of the US exports to developing Asia: the People's Republic of China (PRC), India, ASEAN-10, and the NIEs. ASEAN-10 includes Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam. The NIEs comprise Hong Kong, China; the Republic of Korea; Singapore; and Taipei,China. To remove price effects, net exports data are deflated using the average of export and import price indexes for each period. The cut-off value was also set at $100 million to highlight the trend in high-valued products, while addressing issues on sample size.

As seen in Table 1, on average, between 2007 to 2008, there were no fewer than 231 4-digit HTS products with US real net exports to the world of over $100 million, and 395 sectors with exports that averaged *at least $10 million in real net exports in 2007–2008.* Real net exports to developing Asia of over $100 million as well stood at 103 categories, which is almost half the total number of product categories where the US has real net exports of over $100 million; while those over $10 million stood at 177 (Table 2). The data, therefore, suggests that the international competitiveness of the US is broad-based and covers a very wide range of product categories.

Table 1: US Real Net Exports to World, by Value and Number of Sectors, 2007–2008

Value of Total Net Exports	Number of Sectors	Percent of Total Number of Sectors with Real Net Imports from the US	
		> $10 Million	> $100 Million
> $1B	56	14.2	24.2
$500 M – $1 B	37	9.4	16.0
$100 M – $500 M	138	34.9	59.7
> $100 M, Total	**231**	**58.5**	**100.0**
$10 M – $100 M	164	41.5	
> $10 M, Total	**395**	**100.0**	

Note: Real values are obtained using the average of import and export price index.
Source: USITC Interactive Tariff and Trade DataWeb, Version 3.1.0, available: dataweb.usitc.gov/, downloaded 15 February 2010.

Table 2: US Real Net Exports to Developing Asia, by Number of Sectors, 2007–2008

	Number of Sectors with Real Net Exports		Share to Total Number of Sectors with Real Net Exports	
	> $100 Million	> $10 Million	> $100 Million	> $10 Million
ASEAN-10	34	133	14.7	33.7
India	10	66	4.3	16.7
NIEs	63	169	27.3	42.8
PRC	41	104	17.7	26.3
Developing Asia	103	177	44.6	44.8

ASEAN-10 = Association of Southeast Asian Nations, NIEs = newly industrialized economies.
Note: Developing Asia is comprised of the ASEAN-10 economies, the People's Republic of China, India, and the NIEs. ASEAN-10 comprises Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam. The NIEs is comprised of Hong Kong, China; the Republic of Korea; Singapore; and Taipei,China.
To avoid double counting, i.e., of Singapore, countries are individually added up to get the total for Developing Asia. Real values are obtained using the average of import and export price index.
Source: USITC Interactive Tariff and Trade DataWeb, Version 3.1.0, available: dataweb.usitc.gov/, downloaded 15 February 2010.

III. Correlation Analysis of US Real Net Exports

This section examines if there is a reasonable consistency between the items for which the US tends to have positive real net exports and large export values. A correlation analysis is performed between US real net exports to the world and to developing Asia as a whole, and for the various key countries and subregions (the PRC, India, NIEs, and ASEAN-10) during the 2-year base period 2007–2008. The sample is limited to trade values greater than $100 million to highlight the trend in high-valued products.

Since developing Asia figures prominently in the US' top trading partners, it is expected that we will find a positive correlation between US real net exports to the world and those to developing Asia for high-valued products. The first row in Table 3 shows positive and high correlation results indeed for real net exports of over US$100 million between the US and key Asian countries and subregions. This indicates that increases in US exports to the world seems to be driven by US exports to developing Asia. This relationship, however, slowly weakened in the years leading to the crisis, indicating a narrowing of the US trade balance with the world, and the reeling effect on global demand of the current global economic crisis that began in 2007(James 2010).

Extending the analysis further to four subcategories or factor intensities (Table 3, rows 2–5) reveals a negative correlation from 2006 to 2008 in one category: low-technology manufactures (LT). This is due to the fact that despite the US recording positive net exports of LT manufactures to the world, it is a net importer of this type of product in developing Asia. As seen from the results in Table 3, this negative correlation seems to be caused by the negative trade balance with the PRC and the NIEs. This suggests that

the NIEs and the PRC are more competitive in this product category vis-à-vis US while the US remains to be more competitive with regard to other export partners.

Table 3: Correlation Analysis of US Real Net Exports to the World versus Those to Developing Asia

Region/Country	US Real Net Exports to the World > $100 Million				
	2006	2007	2008	2007-08	2009
Developing Asia	**0.93***	**0.92***	**0.86***	**0.89***	**0.80***
Agriculture-related	0.85*	0.83*	0.88*	0.86*	0.92*
High-technology manufactures	0.95*	0.95*	0.90*	0.93*	0.56*
Low-technology manufactures	-0.10	-0.38	-0.28	-0.30	0.25
Raw materials and energy	0.69*	0.59*	0.61*	0.60*	0.67*
ASEAN-10	**0.86***	**0.74***	**0.70***	**0.72***	**0.56***
Agriculture-related	0.72*	0.71*	0.65*	0.68*	0.74*
High-technology manufactures	0.88*	0.75*	0.74*	0.75*	0.51*
Low-technology manufactures	0.41	0.24	0.33	0.27	0.62*
Raw materials and energy	0.46*	0.51*	0.57*	0.55*	0.49*
NIEs	**0.88***	**0.81***	**0.81***	**0.82***	**0.53***
Agriculture-related	0.86*	0.90*	0.85*	0.88*	0.80*
High-technology manufactures	0.89*	0.83*	0.83*	0.83*	0.35*
Low-technology manufactures	-0.03	-0.16	-0.32	-0.27	0.08
Raw materials and energy	0.64*	0.53*	0.58*	0.56*	0.67*
PRC	**0.80***	**0.78***	**0.64***	**0.71***	**0.69***
Agriculture-related	0.66*	0.62*	0.66*	0.64*	0.84*
High-technology manufactures	0.90*	0.88*	0.76*	0.83*	0.30*
Low-technology manufactures	-0.22	-0.46*	-0.36	-0.38	0.12
Raw materials and energy	0.66*	0.47*	0.41*	0.44*	0.57*
India	**0.86***	**0.85***	**0.59***	**0.78***	**0.31***
Agriculture-related	0.21	0.14	0.10	0.12	0.07
High-technology manufactures	0.90*	0.90*	0.65*	0.86*	0.36*
Low-technology manufactures	0.25	0.02	0.17	0.19	0.28
Raw materials and energy	0.68*	0.90*	0.90*	0.91*	0.74*

* significant at 5%.

Note: Developing Asia is comprised of the ASEAN-10 economies, the People's Republic of China, India, and the NIEs. ASEAN-10 comprises Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam. The NIEs is comprised of Hong Kong, China; the Republic of Korea; Singapore; and Taipei,China.
To avoid double counting, i.e., of Singapore, countries are individually added up to get the total for Developing Asia. Real values are obtained using the average of import and export price index.

Source: USITC Interactive Tariff and Trade DataWeb, Version 3.1.0, available: dataweb.usitc.gov/, downloaded 15 February 2010.

On the other hand, the correlation coefficients in HT manufactures are positive and high in all combinations. This is not so surprising, since given its level of development, the US is well known for producing high-value capital equipment and HT products. It has high export values in a number of export industries like vehicles and scientific transport equipment (HTS 87 and 88), which comprised 15.6% of total US exports in 2007–2008, and machinery and mechanical appliances (HTS 84 and 85), which is about 26.1% of total exports during the same period.

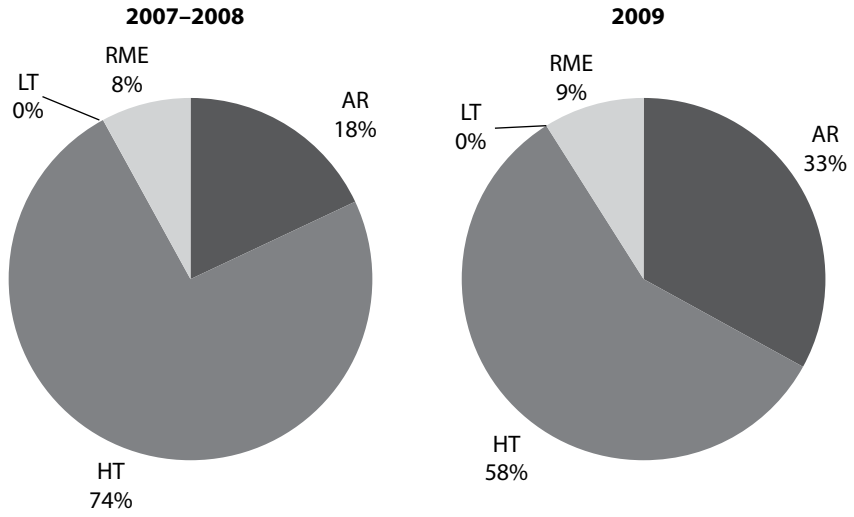
Similarly, the correlation coefficients are positive and high in AR and the RME industries, except with India in AR products.

IV. Trends in US Real Net Exports by Factor Intensity

We now turn to analyze the trends in US real net exports by factor intensity and by countries and subregions in developing Asia. Overall, US real net exports declined in 2009. In 2007–2008, US real net exports to the world of over $100 million stood at $246.3 billion, 29% higher than the value in 2006. About 57.8% of this is due to trade in HT manufactures, or products with high research and development (R&D) intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery. But in 2009, total net exports plunged by 35% as the global economic crisis continues to slash global trade. HT manufactures suffered considerably as trade in high-valued HT products dropped 50% from $142.4 million in 2007–2008 to just $71.9 million in 2009. Despite the drop, high-valued HT manufactures remains the top exportable products of the US. AR products on the other hand, showed signs of resilience as the value of its net exports in real terms declined by only 10% during the same period.

US real net exports to developing Asia also declined across different products but some industries remain resilient. In particular, net exports to ASEAN-10 for high-valued HT manufactures in 2007–2008 stood at about $12.6 billion in real terms, roughly about 74% of total real net exports to the ASEAN-10 region (Figure1). In 2009, this dropped by 56.7% reducing its share in the total to just about 58%. Though overall, real net exports of over $100 million dropped by about 46.9%, the market for HT manufactures in the region remains promising because it still acounts for over half of total real net exports to the region. At least 12 HT products, mainly electrical machinery and equipment including plastics and rubbers, remained in the top 20 products traded in 2009 (Appendix Table 1). Notable however is the rise in the share of AR products. Though its value dropped by 12.3% in 2009, the share of AR products overall has increased from just about 18% of total real net exports in 2007–2008 to about 33% in 2009. Cereals, oil seeds, cotton, animal feeds, and dairy products remained the top exported AR products to the ASEAN-10 (Appendix Table 1).

Figure 1: US Real Net Exports to the ASEAN-10, by Factor Intensity (> $100 million)

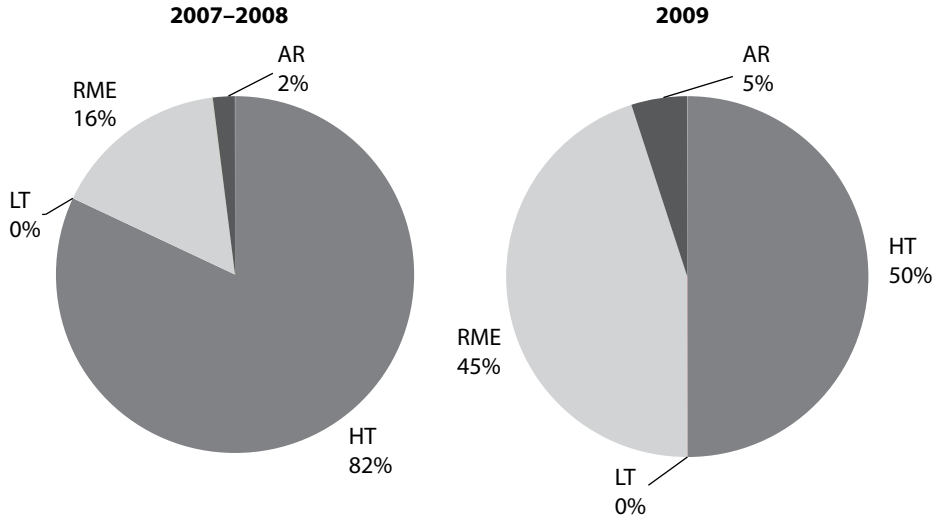


AR = agriculture-related, HT = high-technology manufactures, LT = low-technology manufactures, RME = raw materials and energy.
Note: Real values are derived using the average of export and import price indexes. They are generated from a sample where US net exports to the world is over $100 million.
Source: Authors' calculation using data from USITC (2010) Interactive Tariff and Trade DataWeb, Version 3.1.0, available: dataweb.usitc.gov/, downloaded 15 February 2010.

US real net exports of high-valued HT products to India as well dropped from $6.1 billion in 2007–2008 to just $3.1 billion in 2009, with the biggest impact found in HT manufactures (it dropped from a high of 80% of the total in 2007–2008 to just 50% in 2009, as seen in Figure 2). Of particular interest however, is the 29 percentage points rise of real net exports of RMEs in 2009. Its share to the total improved to 45% from just 16% in 2007–2008 due mainly to increases in trade of precious stones and metals, iron and steel, and wood pulp (Appendix Table 2). Continuous trade in fertilizers and nuclear reactors, boilers, machinery, and mechanical appliances have also kept HT manufactures a buoyant industry. Real net exports of AR products have also improved slightly.

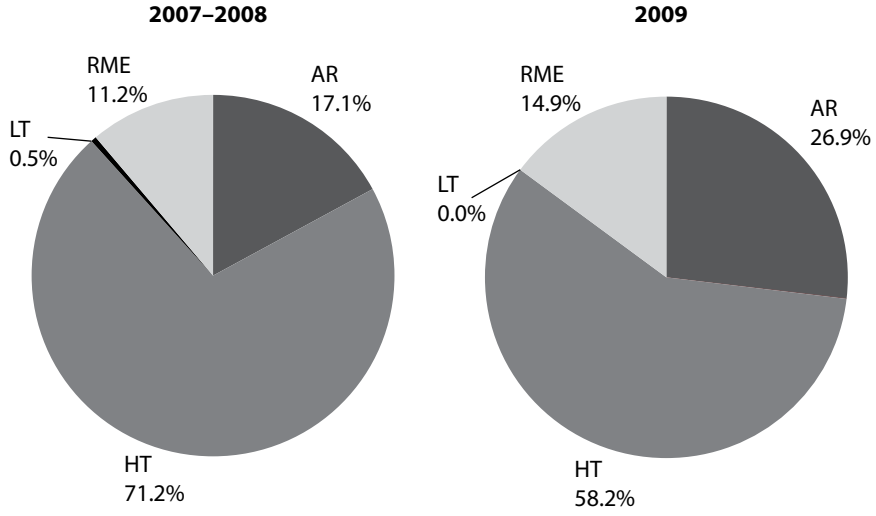
An almost similar trend for HT manufactures was also seen in US real net exports to the NIEs. Real net exports of HT manufactures dropped by 43.1% from 71.2% in 2007–2008 to just 58.2% in 2009 (Figure 3). But some HT products like machinery and mechanical appliances and electrical equipment, measuring and medical instruments and apparatus, and plastics remained the top exported products to the NIEs. AR products like corn, soybeans, nuts, wheat, and meat also remained in the top 20 (Appendix Table 3). Overall, the value of net exports in real terms to the NIEs dropped 35% in 2009.

Figure 2: US Real Net Exports to India, by Factor Intensity (> $100 million)



AR = agriculture-related, HT = high-technology manufactures, LT = low-technology manufactures, RME = raw materials and energy.
Note: Real values are derived using the average of export and import price indexes. They are generated from a sample where US net exports to the world is over $100 million.
Source: Authors' calculation using data from USITC (2010) Interactive Tariff and Trade DataWeb, Version 3.1.0, available: dataweb.usitc.gov/, downloaded 15 February 2010.

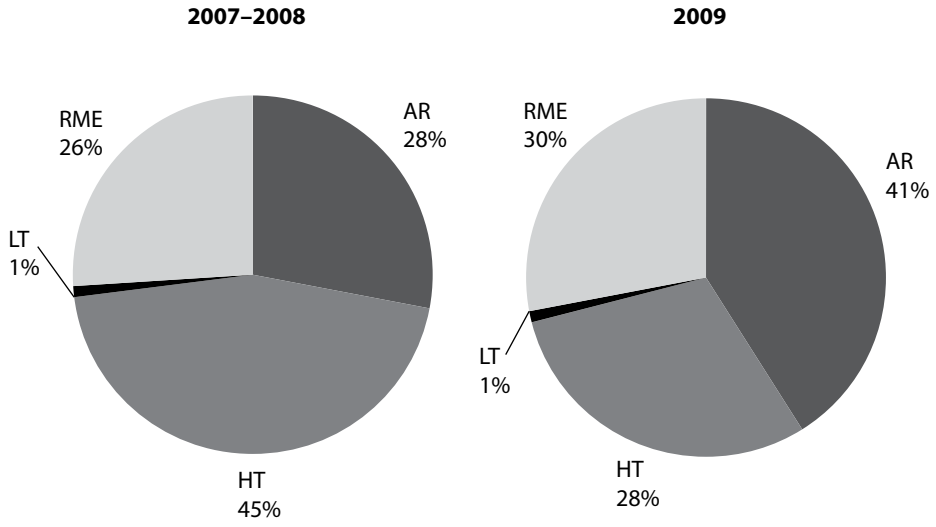
Figure 3: US Real Net Exports to the NIEs, by Factor Intensity (> $100 M)



AR = agriculture-related, HT = high-technology manufactures, LT = low-technology manufactures, RME = raw materials and energy.
Note: Real values are derived using the average of export and import price indexes. They are generated from a sample where US net exports to the world is over $100 million.
Source: Authors' calculation using data from USITC (2010) Interactive Tariff and Trade DataWeb, Version 3.1.0, available: dataweb.usitc.gov/, downloaded 15 February 2010.

Though HT products hold the lion's share in the overall real net exports pie to the PRC, its share is less dominant than in the other regions. AR products like soybeans, cotton, meat, and edible offal of poultry remained top US exports in real net terms to the PRC, indicating a high demand for food in the PRC (Appendix Table 4). Over the years, the pattern of food consumption in the PRC has changed in response to rising incomes and growing population. In particular, consumption of meat has increased. Consumption of soybeans as well, either directly as food—tofu, meat substitutes, soy sauce, and other products–or extracted as oil has also increased. In 2009, net exports in real terms of AR products to the PRC increased by 15% from the $7.5 billion average in 2007–2008. Overall, real net exports to the PRC only dropped 8.5% in 2009, compared to the 2-digit declines in India and other regions.

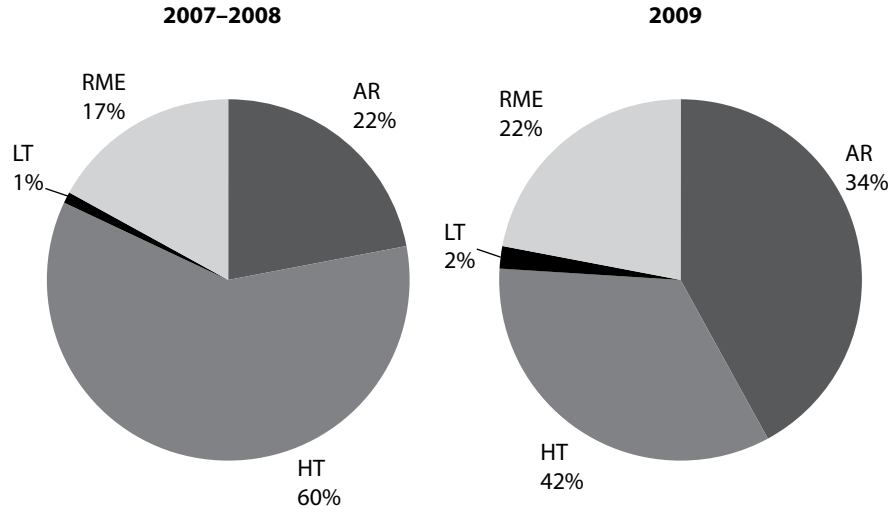
Figure 4: US Real Net Exports to the PRC , by Factor Intensity (> $100 M)



AR = agriculture-related, HT = high-technology manufactures, LT = low-technology manufactures, RME = raw materials and energy.
Note: Real values are derived using the average of export and import price indexes. They are generated from a sample where US net exports to the world is over $100 million.
Source: Authors' calculation using data from USITC (2010) Interactive Tariff and Trade DataWeb, Version 3.1.0, available: dataweb.usitc.gov/, downloaded 15 February 2010.

For developing Asia as a whole, 231 detailed products met the criteria with an overall average value of over $246 billion (in 2001 prices), nearly 58% of which were in HT manufacturing (Table 1). In the precrisis period, the US had net exports in real terms to developing Asia of at least $10 million per year for 177 of the 231 products—with an even greater concentration in the HT category (60%). In contrast to the precrisis performance, in 2009 there was a huge shift in US net exports from HT to the other three categories, especially agriculture. The trend is almost similar for real net exports to developing Asia of at least $100 million (Figure 5).

Figure 5: US Real Net Exports to Developing Asia, by Factor Intensity (> $100 million)



AR = agriculture-related, HT = high-technology manufactures, LT = low-technology manufactures, RME = raw materials and energy.
Note: Real values are derived using the average of export and import price indexes. They are generated from a sample where US net exports to the world is over $100 million.
Source: Authors' calculation using data from USITC (2010) Interactive Tariff and Trade DataWeb, Version 3.1.0, available: dataweb.usitc.gov/, downloaded 15 February 2010.

V. Conclusion

The analyses of this paper suggest that much of the apparent shift in product shares was a result of the worldwide collapse in demand for high-technology products, particularly new aircraft (the most important product in US net exports in "normal" years) and in information technology products. With new commercial airliners coming off the assembly lines soon, this shift is likely to be reversed. Interestingly, India, ASEAN-10, and the NIEs are destinations for US HT products to an even greater extent than for the world as a whole. In contrast, the PRC tends to receive a lower portion of HT net imports (28%) but a larger share of AR (41%) and RME products (30%) than the world as a whole.

As developing Asia renews its emphasis on improving the quality of life and improving health and environment, its demand for US-produced high technology goods is likely to accelerate and thus to contribute to a more balanced global trade relationship. This will be mutually beneficial as the US seeks to raise saving and exports and to curb consumption and imports.

Appendix

Appendix Table 1: Top 20 Products to ASEAN, by Value of Real Net Exports, 2009

Rank in 2007–2008	Category	4-digit HTS Code	Description	2007 ('000)	2008 ('000)	2007–2008 Average ('000)	2009 ('000)
1	HT	8542	Electronic integrated circuits, and parts thereof	3,125,803.75	3,539,854.5	3,332,829.1	1,551,020.4
4	HT	8431	Parts of machinery of headings 8425 to 8430 covering derricks, fork-lift trucks, conveyers, self-propelled bulldozers, graders, snowplows, etc.	1,214,083.75	1,360,475.9	1,287,279.8	1,038,284.8
9	AR	1201	Soybeans, whether or not broken	575,390.88	626,284.6	600,837.8	913,798.3
6	AR	1001	Wheat and meslin	668,273.25	1,008,112.8	838,193.0	587,174.6
8	AR	5201	Cotton, not carded or combed	549,023.69	743,328.9	646,176.3	531,841.5
7	RME	7204	Ferrous waste and scrap, remelting scrap ingots of iron or steel	622,351.94	983,196.8	802,774.3	519,319.5
20	AR	2304	Soybean oilcake and other solid residues resulting from the extraction of soybean oil, whether or not ground or in the form of pellets	120,909.48	185,264.4	153,086.9	412,824.6
13	HT	3901	Polymers of ethylene, in primary form	229,395.94	331,588.7	280,492.3	381,346.6
14	HT	3811	Antiknock preparations and other additives for mineral oils (including gasoline) or for other liquids used for the same purposes as mineral oils	253,878.17	286,662.5	270,270.4	276,239.8
3	HT	8411	Turbojets, turbopropellers and other gas turbines, and parts thereof	1,712,341.00	1,415,521.0	1,563,931.0	255,553.4
16	AR	2303	Residues of starch manufacture and other residues and waste of sugar manufacture, brewing or distilling dregs and waste, whether or not in pellets	149,444.16	248,838.3	199,141.2	249,546.6
11	HT	8486	Semiconductor and flat panel manufacturing and assembly equipment, and parts thereof	365,689.50	404,146.2	384,917.8	248,928.8

continued.

Appendix Table 1: *continued.*

Rank in 2007–2008	Category	4-digit HTS Code	Description	2007 ('000)	2008 ('000)	2007–2008 Average ('000)	2009 ('000)
17	HT	8421	Centrifuges, including centrifugal dryers; filtering or purifying machinery and apparatus, for liquids or gases; and parts thereof	203,906.09	182,386.5	193,146.3	205,217.0
15	HT	8479	Machines and mechanical appliances having individual functions, nesoi; and parts thereof	284,690.34	148,621.3	216,655.8	197,422.0
25	HT	3902	Polymers of propylene or of other olefins, in primary form	120,584.60	148,590.2	134,587.4	169,949.2
10	HT	8541	Diodes, transistors, and similar devices; photosensitive semiconductor devices; light-emitting diodes; mounted piezoelectirc crystals; and parts thereof	479,715.75	308,872.5	394,294.1	168,228.8
28	AR	1208	Flours and meals of oil seeds or oleaginous fruits, other than those of mustard	103,945.85	142,261.3	123,103.6	165,628.0
18	HT	8408	Compression-ignition internal combustion piston engines (diesel or semidiesel engines)	128,130.29	191,579.3	159,854.8	143,272.9
12	AR	402	Milk and cream, concentrated or containing added sweetening	297,890.03	429,687.4	363,788.7	142,643.2
21	HT	3815	Reaction initiators, reaction accelerators, and catalytic preparations nesoi	117,123.52	185,704.5	151,414.0	141,766.1

AR = agriculture-related, HT = high-technology manufactures, LT = low-technology manufactures, RME = raw materials and energy.
Note: Real values are derived using the average of export and import price indexes. The ranking is based on a sample where US net exports to the world is over $100 million.
Source: Authors' calculation using data from USITC (2010) Interactive Tariff and Trade DataWeb, Version 3.1.0, available: dataweb.usitc.gov/, downloaded 15 February 2010.

Appendix Table 2: Top 20 Products to India, by Value of Real Net Exports, 2009

Rank in 2007–2008	Category	4-digit HTS Code	Description	2007 ('000)	2008 ('000)	2007–2008 Average ('000)	2009 ('000)
2	HT	3105	Mineral or chemical fertilizers with two of the three fertilizer elements; fertilizers nesoi; fertilizers in packs etc. not over 10 kilograms gross weight	(2.54)	2,161,445.5	1,080,721.5	907,713.6
3	RME	7108	Gold (including gold plated with platinum), unwrought or in semimanufactured forms, or in powder form	321,909.47	388,075.4	354,992.5	546,719.5
4	RME	7204	Ferrous waste and scrap, remelting scrap ingots of iron or steel	284,511.84	283,709.2	284,110.5	354,509.3
7	RME	2701	Coal; briquettes, ovoids and similar solid fuels manufactured from coal	76,679.36	280,605.0	178,642.2	293,404.3
6	HT	8411	Turbojets, turbopropellers and other gas turbines, and parts thereof	272,489.00	156,194.4	214,341.7	271,726.3
5	HT	8431	Parts of machinery of headings 8425 to 8430 covering derricks, fork-lift trucks, conveyers, self-propelled bulldozers, graders, snowplows, etc.	227,940.78	214,007.8	220,974.3	203,943.2
9	RME	4707	Waste and scrap of paper or paperboard	154,390.02	120,684.3	137,537.2	168,368.6
8	AR	802	Nuts nesoi, fresh or dried	149,489.00	139,976.7	144,732.8	159,159.3
10	HT	3815	Reaction initiators, reaction accelerators, and catalytic preparations nesoi	88,931.47	120,304.8	104,618.1	150,502.6
14	HT	9018	Instruments and appliances used in medical, surgical, dental or veterinary sciences (including electromedical and sight-testing); and parts thereof	93,956.85	75,643.1	84,800.0	120,019.5
40	HT	3904	Polymers of vinyl chloride or of other halogenated olefins, in primary form	14,936.55	21,884.1	18,410.3	101,794.9
85	AR	1507	Soybean oil and its fractions, whether or not refined, but not chemically modified	9,836.72	13.2	4,925.0	101,439.0

continued.

Appendix Table 2: *continued.*

Rank in 2007–2008	Category	4-digit HTS Code	Description	2007 ('000)	2008 ('000)	2007–2008 Average ('000)	2009 ('000)
18	HT	3901	Polymers of ethylene, in primary form	55,121.83	57,639.2	56,380.5	97,319.5
11	HT	9027	Instruments and apparatus for physical or chemical analysis, including checking viscosity, expansion, heat, sound, light etc.; microtomes; and parts thereof	93,622.67	96,842.2	95,232.4	96,589.0
16	AR	5201	Cotton, not carded or combed	66,310.49	80,028.0	73,169.2	88,205.1
12	HT	2809	Diphosphorus pentaoxide, phosphoric acid, and polyphosphoric acids	(159.90)	177,206.8	88,523.5	82,051.7
26	AR	713	Leguminous vegetables, dried shelled	36,430.63	31,190.5	33,810.6	77,822.9
15	HT	9030	Oscilloscopes, spectrum analyzers etc. for measuring etc. electrical quantities, nesoi; devices for measuring etc. ionizing radiations; and parts thereof	84,950.09	64,753.5	74,851.8	75,752.5
23	HT	8430	Machinery nesoi, for moving, grading, excavating, boring etc. Earth, minerals or ores; pile-drivers and pile-extractors; snowplows and snowblowers	9,176.82	64,888.8	37,032.8	67,105.1
17	HT	4002	Synthetic rubber and factice in primary forms etc.; mixtures of natural rubber or gums with synthetic rubber or factice, in primary forms etc.	58,388.32	65,220.1	61,804.2	58,010.2

AR = agriculture-related, HT = high-technology manufactures, LT = low-technology manufactures, RME = raw materials and energy.

Note: Real values are derived using the average of export and import price indexes. The ranking is based on a sample where US net exports to the world is over $100 million.

Source: Authors' calculation using data from USITC (2010) Interactive Tariff and Trade DataWeb, Version 3.1.0, available: dataweb.usitc.gov/, downloaded 15 February 2010.

Appendix Table 3: Top 20 Products to NIEs, by Value of Real Net Exports in 2009

Rank in 2007–2008	Category	4-digit HTS Code	Description	2007 ('000)	2008 ('000)	2007–2008 Average ('000)	2009 ('000)
2	HT	8486	Semiconductor and flat panel manufacturing and assembly equipment, and parts thereof	3,739,862.00	2,297,864.8	3,018,863.4	2,354,429.8
4	AR	1005	Corn (maize)	1,348,324.88	2,311,177.3	1,829,751.1	1,571,105.9
7	RME	7204	Ferrous waste and scrap, remelting scrap ingots of iron or steel	1,157,188.63	1,924,916.0	1,541,052.3	1,467,975.4
6	HT	8541	Diodes, transistors, and similar devices; photosensitive semiconductor devices; light-emitting diodes; mounted piezoelectric crystals; and parts thereof	1,656,360.38	1,508,287.8	1,582,324.1	1,455,402.5
8	HT	8431	Parts of machinery of headings 8425 to 8430 covering derricks, fork-lift trucks, conveyers, self-propelled bulldozers, graders, snowplows, etc.	1,051,255.50	1,310,197.5	1,180,726.5	1,226,475.4
10	AR	1201	Soybeans, whether or not broken	745,200.50	889,797.8	817,499.2	847,944.1
26	AR	802	Nuts nesoi, fresh or dried	215,615.91	304,396.6	260,006.3	604,856.8
11	HT	9031	Measuring or checking instruments, appliances and machines, nesoi; profile projectors; parts and accessories thereof	988,964.44	518,241.8	753,603.1	513,837.3
9	HT	9030	Oscilloscopes, spectrum analyzers etc. for measuring etc. electrical quantities, nesoi; devices for measuring etc. Ionizing radiations; and parts thereof	1,475,322.38	848,428.4	1,161,875.4	475,788.1
19	HT	3901	Polymers of ethylene, in primary form	331,163.28	423,336.7	377,250.0	448,521.2
13	AR	1001	Wheat and meslin	573,340.13	680,847.6	627,093.8	447,526.3
22	HT	9027	Instruments and apparatus for physical or chemical analysis, including checking viscosity, expansion, heat, sound, light etc.; microtomes; and parts thereof	364,527.06	312,172.6	338,349.8	356,758.5
23	AR	203	Meat of swine (pork), fresh, chilled or frozen	234,978.84	420,666.4	327,822.6	341,528.8

continued.

Appendix Table 3: *continued.*

Rank in 2007–2008	Category	4-digit HTS Code	Description	2007 ('000)	2008 ('000)	2007–2008 Average ('000)	2009 ('000)
15	HT	2926	Nitrile-function compounds	640,274.13	463,440.9	551,857.5	338,581.3
50	HT	9018	Instruments and appliances used in medical, surgical, dental or veterinary sciences (including electromedical and sight-testing); and parts thereof	84,436.55	207,101.9	145,769.2	337,261.9
14	RME	7602	Aluminum waste and scrap	580,412.88	654,877.1	617,645.0	336,356.8
21	HT	3811	Antiknock preparations and other additives for mineral oils (including gasoline) or for other liquids used for the same purposes as mineral oils	343,071.91	355,322.7	349,197.3	332,738.1
16	AR	4101	Raw hides and skins of bovine or equine animals (fresh or preserved, but not tanned or further prepared), whether or not dehaired or split	530,882.38	463,242.6	497,062.5	331,170.3
18	HT	9001	Optical fibers and optical fiber bundles; optical fiber cables nesoi; sheets and plates of polarizing material; optical elements, unmounted	558,670.06	240,338.3	399,504.2	309,244.9
38	HT	3824	Binders made for foundry molds or cores; chemical products and preparations, including residual products, of the chemical or allied industries, nesoi	201,737.73	165,854.6	183,796.2	282,487.3

AR = agriculture-related, HT = high-technology manufactures, LT = low-technology manufactures, RME = raw materials and energy.
Note: Real values are derived using the average of export and import price indexes. The ranking is based on a sample where US net exports to the world is over $100 million.
Source: Authors' calculation using data from USITC (2010) Interactive Tariff and Trade DataWeb, Version 3.1.0, available: dataweb.usitc.gov/, downloaded 15 February 2010.

Appendix Table 4: Top 20 Products to the PRC, by Value of Real Net Exports, 2009

Rank in 2007–2008	Category	4-digit HTS Code	Description	2007 ('000)	2008 ('000)	2007–2008 Average ('000)	2009 ('000)
1	AR	1201	Soybeans, whether or not broken	3,465,406.00	5,635,596.5	4,550,501.3	7,767,435.5
3	HT	8542	Electronic integrated circuits; parts thereof	2,593,975.50	2,970,563.8	2,782,269.6	2,436,561.0
4	RME	7204	Ferrous waste and scrap; remelting scrap ingots of iron or steel	1,587,040.63	1,430,327.4	1,508,684.0	2,120,664.5
7	RME	4707	Waste and scrap of paper or paperboard	1,234,500.88	1,268,339.9	1,251,420.4	1,331,258.5
5	RME	7404	Copper waste and scrap	1,510,706.38	1,370,737.1	1,440,721.8	1,109,996.6
6	RME	7602	Aluminum waste and scrap	1,345,526.25	1,343,261.3	1,344,393.8	1,064,050.9
13	HT	3901	Polymers of ethylene, in primary forms	463,650.59	545,423.8	504,537.2	914,715.3
8	AR	5201	Cotton, not carded or combed	1,230,396.75	1,268,057.5	1,249,227.1	698,059.3
11	AR	207	Meat and edible offal of poultry (chickens, ducks, geese, turkeys and guineas), fresh, chilled or frozen	489,350.25	559,965.0	524,657.6	576,100.0
16	RME	4703	Chemical woodpulp, soda or sulfate, other than dissolving grades	353,662.44	319,657.1	336,659.8	490,156.8
10	AR	4101	Raw hides and skins of bovine or equine animals (fresh or preserved, but not tanned or further prepared), whether or not dehaired or split	644,005.06	553,667.9	598,836.5	466,276.3
19	HT	3902	Polymers of propylene or of other olefins, in primary forms	352,258.88	228,559.1	290,409.0	435,267.8
18	HT	2804	Hydrogen, rare gases and other nonmetals	285,175.97	321,880.3	303,528.1	426,559.3
17	HT	4002	Synthetic rubber and factice in primary forms etc.; mixtures of natural rubber or gums with synthetic rubber or factice, in primary forms etc.	324,506.78	322,489.1	323,498.0	366,867.8
15	HT	3907	Polyacetals, other polyethers and epoxide resins, in primary forms; polycarbonates, alkyds, polyallyl esters and other polyesters, in primary forms	364,425.56	321,209.2	342,817.4	301,276.3
25	LT	5502	Artificial filament tow	175,868.86	210,889.6	193,379.2	275,939.8

continued.

Appendix Table 4: *continued.*

Rank in 2007–2008	Category	4-digit HTS Code	Description	2007 ('000)	2008 ('000)	2007–2008 Average ('000)	2009 ('000)
22	RME	3915	Waste, parings, and scrap of plastics	208,038.08	220,825.0	214,431.6	273,792.4
38	HT	3904	Polymers of vinyl chloride or of other halogenated olefins, in primary form	108,417.94	111,258.2	109,838.1	260,822.0
14	RME	2603	Copper ores and concentrates	358,872.25	381,115.9	369,994.1	251,726.3
32	HT	9027	Instruments and apparatus for physical or chemical analysis, including checking viscosity, expansion, heat, sound, light etc.; microtomes; and parts thereof	106,296.11	150,600.3	128,448.2	250,324.6

AR = agriculture-related, HT = high-technology manufactures, LT = low-technology manufactures, RME = raw materials and energy.
Note: Real values are derived using the average of export and import price indexes. The ranking is based on a sample where US net exports to the world is over $100 million.
Source: Authors' calculation using data from USITC (2010) Interactive Tariff and Trade DataWeb, Version 3.1.0, available: dataweb.usitc.gov/, downloaded 15 February 2010.

Appendix Table 5: Top 20 Products to Developing Asia, by Value of Real Net Exports, 2009

Rank in 2007–2008	Category	4-digit HTS Code	Description	2007 ('000)	2008 ('000)	2007–2008 Average ('000)	2009 ('000)
3	AR	1201	Soybeans, whether or not broken	4,780,010.00	7,148,113.50	5,964,061.8	9,523,361.00
4	RME	7204	Ferrous waste and scrap; remelting scrap ingots of iron or steel	3,642,812.25	4,611,993.00	4,127,402.6	4,454,747.50
2	HT	8542	Electronic integrated circuits, and parts thereof	5,639,769.00	6,176,088.50	5,907,928.8	2,885,439.75
5	HT	8486	Semiconductor and flat panel manufacturing and assembly equipment, and parts thereof	4,553,101.50	2,845,104.25	3,699,102.9	2,654,324.50
13	RME	4707	Waste and scrap of paper or paperboard	1,697,474.63	1,668,285.38	1,682,880.0	1,731,035.63
8	HT	8431	Parts of machinery of headings 8425 to 8430 covering derricks, fork-lift trucks, conveyers, self-propelled bulldozers, graders, snowplows, etc.	1,342,245.38	1,575,286.13	1,458,765.8	1,686,055.88
11	AR	1005	Corn (maize)	1,415,882.38	2,355,764.50	1,885,823.4	1,656,602.50
17	HT	3901	Polymers of ethylene, in primary form	943,707.25	1,130,440.13	1,037,073.7	1,566,206.75
9	AR	5201	Cotton, not carded or combed	2,121,744.50	2,328,255.75	2,225,000.1	1,561,670.38
10	RME	7602	Aluminum waste and scrap	2,000,826.63	2,100,484.50	2,050,655.6	1,453,719.50
12	RME	7404	Copper waste and scrap	1,888,634.50	1,780,991.50	1,834,813.0	1,359,714.38
15	AR	1001	Wheat and meslin	1,229,698.00	1,673,522.50	1,451,610.3	1,095,471.13
19	HT	3105	Mineral or chemical fertilizers with two of the three fertilizer elements, fertilizers nesoi, fertilizers in packs etc. not over 10 kilograms gross weight	(5,888.32)	2,189,227.00	1,091,669.3	1,087,311.88
14	HT	8541	Diodes, transistors and similar devices; photosensitive semiconductor devices; light-emitting diodes; mounted piezoelectric crystals; and parts thereof	1,531,874.00	1,188,674.13	1,360,274.1	958,128.81
22	AR	207	Meat and edible offal of poultry (chickens, ducks, geese, turkeys, and guineas), fresh, chilled, or frozen	693,726.75	884,098.00	788,912.4	931,277.13
37	AR	802	Nuts nesoi, fresh or dried	395,782.56	481,239.50	438,511.0	867,734.75

continued.

Appendix Table 5: *continued.*

Rank in 2007–2008	Category	4-digit HTS Code	Description	2007 ('000)	2008 ('000)	2007–2008 Average ('000)	2009 ('000)
18	AR	4101	Raw hides and skins of bovine or equine animals (fresh or preserved, but not tanned or further prepared), whether or not dehaired or split	1,295,136.25	1,120,706.88	1,207,921.6	852,246.63
25	RME	4703	Chemical woodpulp, soda, or sulfate, other than dissolving grades	669,459.38	637,579.31	653,519.3	823,327.13
32	HT	9027	Instruments and apparatus for physical or chemical analysis, including checking viscosity, expansion, heat, sound, light etc.; microtomes; and parts thereof	538,017.75	563,897.38	550,957.6	746,174.56
33	HT	3902	Polymers of propylene or of other olefins, in primary form	551,353.63	437,167.97	494,260.8	723,850.00

AR = agriculture-related, HT = high-technology manufactures, LT = low-technology manufactures, RME = raw materials and energy.
Note: Real values are derived using the average of export and import price indexes. The ranking is based on a sample where US net exports to the world is over $100 million.
Source: Authors' calculation using data from USITC (2010) Interactive Tariff and Trade DataWeb, Version 3.1.0, available: dataweb.usitc.gov/, downloaded 15 February 2010.

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About the Paper

William E. James and Shiela Camingue examine the composition and prospects for growth of net exports of the United States (US) to the world and to developing Asia. They find that much of the apparent shift in export product shares was a result of the worldwide collapse in demand for high-technology products, particularly new aircraft and information technology products. Nonetheless, India, ASEAN-10, and the newly industrialized economies are destinations for US high-technology products to an even greater extent than for the world as a whole. In contrast, the People's Republic of China tends to import a lower portion of high-technology products but a larger share of agriculture-related and raw materials and energy products than the world as a whole.

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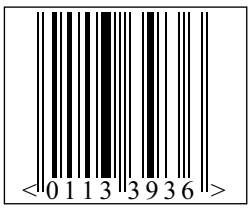

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