National **Retail** Federation
The Voice of Retail Worldwide

Impact of Imports from China on U.S. Employment

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Prepared by TRADE PARTNERSHIP WORLDWIDE, LLC

Trade Partnership Worldwide, llc

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Executive Summary

This study presents a comprehensive assessment of the role played by merchandise imports from China in the U.S. economy. An understanding of this role is important as the American public and policy makers consider issues in the U.S.-China trading relationship and proper responses to them. Our key findings are:

- China is the second-largest supplier of merchandise imports to the U.S. market, representing 13 percent of total value of imports in 2004. Nearly 80 percent of those goods are consumer products, most notably toys, footwear, computers and apparel. U.S. manufacturers also use raw materials and capital goods imported from China, including coal. Important U.S. exports to China – cotton, semiconductors, leather, for example -- are incorporated into finished goods, many of which are re-exported to the United States.

- These imports have both positive and negative impacts on U.S. employment. The negative impact receives all the attention; the positive impact is unacknowledged. In fact, accounting for both the job "gains" and the "losses," *imports from China have a net positive impact* on U.S. employment, that approaches 1 million American jobs. Eight U.S. jobs owe their existence to imports from China, for every one job that is "lost" to those imports. In general, each 10 percent cut in imports from China resulting from, for example, a future barrier to imports, would translate into a decline in the current U.S. employment base, on net, of roughly 0.06 percent or 84,500 jobs.

* The sector with the greatest positive employment link to imports from China is not retailing, but rather business services, which include accounting, legal, advertising, computer programming, management consulting, and other high-paying professions.

- The net positive employment benefits are spread across the United States. Every U.S. state has a net positive number of jobs related to imports from China.

- U.S. price levels are 1.4 percent lower thanks to imports from China

- Imposing a 27.5 percent tariff on top of already-high tariffs on imports from China would cost nearly 300,000 net U.S. jobs, most of them in high-paying business services sectors. Thirteen jobs would be lost for every one created. Every U. S. state would lose jobs, particularly Texas, California, New York and Florida.

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About the Sponsor and Authors

This study was prepared by Laura M. Baughman and Dr. Joseph Francois for the National Retail Federation (NRF). NRF is the world's largest retail trade association, with membership that comprises all retail formats and channels of distribution including department, specialty, discount, catalog, Internet and independent stores as well as the industry's key trading partners of retail goods and services. NRF represents an industry with more than 1.5 million U.S. retail establishments, more than 23 million employees - about one in five American workers - and 2004 sales of $4.1 trillion. As the industry umbrella group, NRF also represents more than 100 state, national and international retail associations.

Laura M. Baughman is President of Trade Partnership Worldwide, LLC (TPW). Ms. Baughman follows closely the impacts, both prospective and actual, of trade policies and programs on the U.S. economy and the trade flows of U.S. trading partners. Under her direction, TPW produces detailed economic assessments of these policies and programs based on traditional economic modeling. Ms. Baughman has particular expertise in evaluating the impacts of trade policy on American retailers, for whom she has worked since the mid-1980s. Ms. Baughman holds degrees in economics from Columbia and Georgetown Universities.

Dr. Joseph Francois is Managing Director of Trade Partnership Worldwide, LLC, and professor of economics at Erasmus University. He also holds numerous research fellowships and professorships at think tanks and universities around the world. Dr. Francois formerly was the head of the Office of Economics at the U.S. International Trade Commission, and a research economist at the World Trade Organization. Dr. Francois is a widely published author of books and articles focused on modeling trade policy questions. He holds a PhD in economics from the University of Maryland, and economics degrees from the University of Virginia.

Impact of Imports from China on U.S. Employment

November 1, 2005

I.   Introduction

U.S.-China economic ties have expanded substantially in recent years. In 2003, China overtook several other countries that had been long-time major foreign suppliers to the U.S. market to become the second-largest (after Canada) source of U.S. imports. Imports from China as a share of total U.S. imports doubled between 1995 and 2004. But despite a near tripling of U.S. exports to China during the period, the trade deficit with China ballooned.

The increase in the bilateral trade deficit has fueled a firestorm of protests from U.S. manufacturers who charge that "endemic unfair trade practices" in China limit U.S. exports to China and expand U.S. imports from China, both the disadvantage of U.S. companies and their workers. Reacting to this outcry, U.S. policy makers are now considering an array of proposals that would significantly limit U.S. imports from China. The most draconian would impose an additional 27.5 percent duty on all imports from China to offset the alleged unfair advantage granted to imports from China by its currency policies. Also of particular concern to retailers and their customers is the flurry of petitions for new quotas on imports of apparel products from China, as well as a significant increase in anti-dumping actions targeting consumer goods from China.

Although some Americans are suspicious if not fearful of the impact of imports from China on the U.S. economy, the American public would be far more embracing of such imports if it had all the facts. To a very large extent, the negative bias in the public's mind and in the news media is due to a failure by those who benefit from imports from China to present the full picture of their impact on the U.S. economy. Stories highlighting the "red ink" of the latest trade balance figures, plant closings allegedly blamed on imports from China, and other negative news stories about imports from China combine to reinforce the public's fears about those imports. The positive contributions of imports are ignored because those who benefit are silent.

This study attempts to measure the impacts of merchandise imports from China on U.S. employment. It begins with an overview of the current make-up of U.S. agricultural and goods imports from China and the role they play in the U.S. market (Section II). It then presents the results of a sophisticated economic analysis of the number of jobs, both in the aggregate and by state, that are tied to U.S. imports from China (Section III). Finally, it quantifies the impact on those jobs of the imposition of a 27.5 percent tariff on imports from China (Section IV).

II.   Imports from China: The Basics

Imports from China have grown in recent years, both absolutely and relative to imports from other major trading partners. Imports increased from $45 billion in 1995 to $196 billion in 2004 (customs value). While Canada has long been and remains the leading source of imports into the United States, China moved from fourth-largest source of imports from 1995-2001 to second-largest source in 2003 and 2004. Imports from China as a share of total U.S. imports doubled over this period, increasing from 6.1 percent of total imports in 1995 to 13.4 percent in 2004.

Chart 1: U.S. Imports from Major Suppliers, 1995-2004
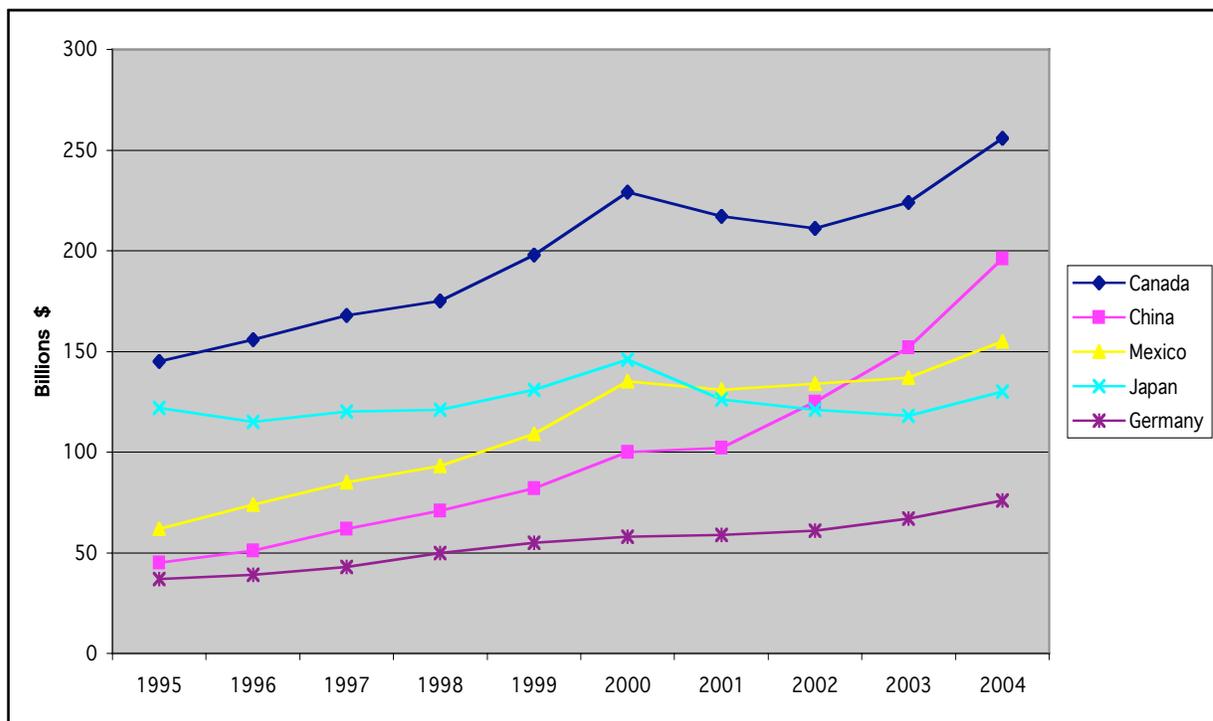
SOURCE: Derived from U.S. Census data.

American families are the primary consumers of imports from China. Consumer goods account for about 80 percent of the value of total imports from China, industrial equipment or raw materials that are used to manufacture goods in the United States account for the remaining 20 percent (see Table 1).[1]

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[1]   We classify computers as consumer goods. They may also be classified as industrial goods purchased and used by companies in the production of goods and services. To the extent that they are industrial goods, the importance of imports from China to U.S. manufacturers, farmers and services providers would increase.

Table 1: U.S. Imports from China, 2000-2004
(Millions of dollars, landed duty-paid value and percent)

	Total Imports	Consumer Goods		Industrial Goods & Raw Materials	
		Value	Share of Total	Value	Share of Total
2000	$110,898	$87,121	78.6%	$23,777	21.4%
2001	113,026	89,611	79.3	23,415	20.7
2002	137,455	109,722	79.8	27,733	20.2
2003	167,268	132,303	79.1	34,965	20.9
2004	215,531	167,371	77.7	48,159	22.3

SOURCE: U.S. Bureau of the Census

China is a major source of supply for a large number of consumer goods. Table 2 shows that China accounts for one quarter of all consumer products imported into the United States. It supplies three quarters by value of all toys imported into the United States, two-thirds of all footwear, almost half of all home furnishings, 40 percent of the computers imported, and one fourth of all apparel and household textiles (e.g., sheets, towels).

China is a major, even *the* major, source of these consumer goods because the goods imported from China differ in significant ways from those made in the United States or available from producers in other countries. For example, retailers have found that China is the best, if not only, source of high-quality silk apparel, and for large orders of fine-gauge fully-fashioned knit sweaters. Its suppliers understand the needs of their customers for reliable supply, quality production, speed to market, and efficiency of supply. In contrast to many U.S. producers, when a retailer provides a Chinese supplier with a design, the supplier is, as a rule, particularly adept at meeting design requirements. However, many U.S. textile manufacturers are unwilling or unable to meet retail customer requirements, often because the legacy of trade protectionism has left them wedded to an outmoded business model that emphasizes trying to market long runs of a few basic products the U.S. manufacturer already makes. Meanwhile, retailers are looking for suppliers that can provide shorter runs of more specialized yarns and fabrics that retail designers have determined customers will want during a particular fashion season.

Table 2: Leading U.S. Consumer Goods Imports from China, 2004
(Millions of dollars, landed duty-paid value)

	Imports from China	Imports from the World	China's Share
Total Consumer Goods	**$167,371**	**$648,003**	**25.8%**
Home Furnishings	37,853	79,494	47.6
Clocks, typewriters, other household items	*14,803*	*28,890*	*51.2*
Furniture, household items, baskets	*11,490*	*23,635*	*48.6*
Household and kitchen appliances	*6,585*	*14,895*	*44.2*
Cookware, cutlery, house & garden wares	*3,479*	*6,152*	*56.5*
Glassware, porcelain, china	*1,240*	*2,751*	*45.1*
Non-textile carpeting, wall tiles	*255*	*3,172*	*8.1*
Computers & Accessories	34,702	90,067	38.5
Computers	*10,245*	*25,314*	*40.5*
Computer accessories, peripherals & parts	*24,457*	*64,754*	*37.8*
Apparel and Household Textiles	27,291	104,113	26.2
Consumer Electronics	24,641	88,219	27.9
Telecommunications equipment	*10,185*	*47,259*	*21.6*
TV receivers, video receivers	*8,025*	*29,983*	*26.8*
Radios, tape decks, stereo equipment	*5,758*	*9,564*	*60.2*
Cameras, glasses	*673*	*1,413*	*47.2*
Toys, Sporting Goods and Bicycles	19,616	26,222	74.8
Footwear	9,759	14,475	67.4
Food Products	2,619	56,461	4.6
Fish and shellfish	*1,320*	*11,937*	*11.1*
Jewelry, Watches, Rings	1,431	11,159	12.8
Other Consumer Goods	9,459	177,793	5.3

SOURCE: U.S. Bureau of the Census

Given its large profile as a source of imports, it is not surprising that consumer goods imported from China also represent significant shares of the total U.S. markets for those goods (Table 3). Imports from China account for more than 80 percent by value of the U.S. toy market, half of the U.S. footwear market, and nearly half of the U.S. television and consumer electronics markets. This situation suggests that for these products in particular, trade policy proposals that would have the effect of increasing the costs of imports from China would have a large negative impact on U.S. consumers.

That said, it should also be noted from Table 3 that China's share of the U.S. apparel market is much smaller than lobbyists for U.S. textile producers claim. Textile industry lobbyists often assert that imports from China account for 75 percent of the U.S. "market,"[2] when in fact they are talking only about the share of *imports*, not the total *market*, which includes U.S.-produced apparel as well as imported apparel. In addition, their claim is based on the volume of imports (e.g., number of socks) rather than the amount of imports by value, which is more representative.[3] Needless to say, such assertions are highly misleading and could trigger potentially large negative consequences to American consumers, if accepted unquestioningly by policy makers.

Table 3: Imports of Consumer Goods from China: Estimated Shares of the U.S. Market, 2004

(Percent)

Toys	81%
Footwear	52
TV and video receivers	46
Consumer electronics	44
Furniture	34
Household and kitchen appliances	30
Fish and shellfish	15
Apparel	10

SOURCE: Trade Partnership Worldwide, LLC

It is also important to know that U.S. manufacturers also benefit from imports from China. U.S. producers and others import from China machinery used to manufacture goods in the United States, parts to manufacture goods in

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[2]   See, for example, Cass Johnson, testimony on behalf of the National Council of Textile Organizations before the U.S.-China Economic Security Review Commission, "China and the WTO: Assessing and Enforcing Compliance," January 2005

[3]   For example, market shares figured from volume levels measured by square meter equivalents (SMEs) treat 100 SMEs of low-value sock imports equally with 100 SMEs of high-value suits, which biases upward the "size" of imports from China.

the United States, as well as a wide range of raw materials and fuels, all important to U.S. manufacturers and their workers (see Table 4). Notably, one quarter of total U.S. imports of coal, a key raw material in U.S. steel production, comes from China.

Table 4: Leading U.S. Industrial Goods and Raw Material Imports from China, 2004
(Millions of dollars, landed duty-paid value)

	Imports from China	U.S. Imports from the World	China's Share
Total Industrial Goods, Raw Materials	**$48,159**	**$886,768**	**5.4%**
Finished Machinery	20,243	163,602	12.4
Electric apparatus and parts	*4,869*	*27,583*	*17.7*
Photo and service industry machinery	*3,270*	*12,700*	*25.7*
Business machinery, except computers	*3,104*	*8,417*	*36.9*
Medical, measuring, and other high-tech mach.	*2,274*	*34,125*	*6.7*
Generators, transformers and parts	*2,016*	*11,719*	*17.2*
Parts for Machinery, Transportation Equipment	6,198	135,038	4.6
Semiconductors	*1,394*	*26,824*	*5.2*
Industrial engines, pumps, compressors	*1,026*	*12,721*	*8.1*
Steel and Other Metal Products	4,953	47,676	10.4
Finished non-steel metal shapes	*1,740*	*10,669*	*16.3*
Boxes, Belting, Glass, Abrasives	2,793	19,338	14.4
Chemicals and Related Products	2,602	83,454	3.1
Wood and Wood Products	1,775	28,295	6.3
Shingles, moldings, wallboard	*1,207*	*12,449*	*9.7*
Fuels	1,155	209,048	0.6
Coal	*718*	*2,770*	*25.9*
Stone, Sand, Cement, Lime	1,070	5,911	18.1
Diamonds, Gems	960	16,744	5.7
Transportation Equipment	118	14,771	0.8
Other Industrial Goods, Raw Materials	6,292	162,891	3.9

SOURCE: U.S. Bureau of the Census

U.S. manufacturers also benefit *indirectly* from imports from China: U.S. raw materials exported to China are often incorporated into finished products exported around the world, including back to the United States. Semiconductors are incorporated into computers, for example; cotton into apparel, ferrous waste and scrap into steel, and leather hides into shoes, handbags and jackets.

Table 5: Leading U.S. Exports to China, 2004
(Millions)

Soybeans	$2,329
Semiconductors and micro-assemblies	2,063
Aircraft	1,617
Raw cotton	1,407
Ferrous waste and scrap	923
Machines and appliances	682
Data processing machines	554
Parts for typewriters and other office machines	493
Raw hides and skins of leather	480
Copper waste and scrap	477
Paper waste and scrap	476
Electrical parts for telecommunications equip.	448
Total U.S. Exports	$32,606

SOURCE: U.S. Bureau of the Census

In addition, U.S. companies are increasingly related to the exporters of products from China to the United States. "Related party" imports[4] from China have increased steadily from 10.5 percent of imports in 1992 to 27.1 percent of imports in 2004.[5] Thus, the benefits of imports from China extend beyond the mere provision of products to a contribution to the "bottom line" of the company in the form of reduced costs (largely intermediary mark-ups).

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[4] "Related party" imports are imports by U.S. companies from their subsidiaries in China as well as imports by U.S. subsidiaries of foreign companies with their parent companies in China.

[5] U.S. Census Bureau, U.S. Department of Commerce, "U.S. Goods Trade: Imports & Exports by Related Parties; 2004," U.S. Census Bureau News, CB-05-40, April 12, 2005.

III.   Impact of Imports from China on the U.S. Employment

Much has been said and written about the impact of imports from China on U.S. employment, most of it negative, and very little of it substantiated in any rigorous analytical manner. The assertions are alarming and fuel concern, even fear, from the public and from policy makers about what imports mean for American competitiveness and employment. They include the notion that American manufacturing is moving to China, and American jobs with it; that the growing trade deficit with China is harmful to the U.S. economy and to U.S. employment; that imports from China are "unfair" and cost American jobs.

Such charges have long mystified American retailers who know that imports from China – indeed, imports from any country – actually support thousands of American jobs. The fact that the alleged link between increased imports and U.S. job losses is merely asserted is little consolation.[6] Getting behind these assertions to the facts is made difficult by the lack of government data identifying import-related jobs. While some government agencies have attempted to quantify the number of U.S. jobs linked to exports, none has attempted to calculate the parallel estimate for the number of U.S. jobs linked to imports generally, nor to imports from China specifically. Consequently, policy makers do not get the full picture when contemplating import-related questions.

In fact, a range of American jobs is directly and indirectly linked to importing goods into the United States from China. For example, long before the goods ever reach U.S. shores, U.S. designers develop the product and importers and producers arrange for financing through U.S. and foreign banks. Wholesale employees and retail workers place orders with U.S. manufacturing workers for products ranging from paper boxes to coat hangers, or computers to cash registers needed to sell the imported goods. When the goods arrive, dockworkers are mobilized, Customs agents process the paperwork, and truckers and other transportation workers take the goods to warehouses or other points of distribution. Wholesalers deliver the goods to retailers. Advertising account executives devise campaigns to sell the goods. Newspaper workers and others print ads. All of this activity generates "value added" – economic activity that is job supporting.

This study quantifies the overall impact of imports from China on U.S. value added (output) as well as employment.[7] We recognize that there are both

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[6]   Trade Adjustment Assistance (TAA) counts are the closest anyone gets to counting the number of jobs affected by imports. Conclusions about the role of imports in U.S. job loss drawn from TAA counts should be used with caution, however. TAA job losses may be inflated because of built-in incentives to blame trade for job losses in order to qualify workers for TAA retraining and income support, who may actually have been displaced for non-trade related reasons.

[7]   The methodology used is explained in Appendix A.

"winners" and "losers" from imports from China, and therefore estimate both sides of the equation to arrive at a net effect on employment, given current U.S. labor market conditions. The result is an estimate of net employment that *owes its existence* to imports from China. In other words, we estimate the net number of U.S. jobs, given the current structure of the U.S. economy, that would be lost (i.e., not transferred to U.S. manufacturers or to other sectors) if imports from China were completely shut out of the U.S. economy. This figure reflects the jobs gained in U.S. manufacturing as a result of the transfer of production of some goods back to the United States from China, and a transfer of sourcing of others to other foreign countries when China is no longer an option.

The bottom line: nearly 1 million U.S. jobs benefit from imports from China. Even subtracting the losses from the gains, imports from China support well over 800,000 net U.S. jobs (see Table 6). Eight U.S. jobs owe their existence to imports from China for every one that is "lost." Based on 2003 U.S. and state-level production, trade data and employment data (the most recent available), we find that imports from China fueled $27.6 billion in economic activity that, in turn, had a net impact on employment equal to 0.5 percent of total U.S. employment.[8] At prevailing wages, imports from China keep the U.S. unemployment rate from rising by roughly 0.45 percentage points.

Table 6: Jobs Related to Imports from China

Total Number of U.S. Jobs Supported by Imports from China +968,160
Total Number of U.S. Jobs Displaced by Imports from China   -122,822
Net Number of U.S. Jobs Supported by Imports from China   +845,338

Sectoral Breakdown of Job Impacts	Number	Average Compensation
Business services*	+762,294	$47,401
Construction	+92,227	$40,521
Transportation & utilities	+55,958	$42,974
Finance & insurance	+48,990	$70,129
Agricultural, forestry, fishing, mining	+5,061	$36,086
Wholesale & retail trade	+3,631	$32,290
Manufacturing	-122,822	$47,861

* Includes services such as management, employment, information, real estate, advertising, accounting, legal, rental and leasing, computer system design, and travel.
SOURCE: Trade Partnership Worldwide, LLC and Bureau of Labor Statistics.

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[8]   As noted, this estimate is a *net* number, reflecting jobs lost as well as jobs supported. A "snap shot" calculation of the number of U.S. jobs currently supported by imports from China without regard to substitution by U.S. producers or other foreign suppliers is much higher, totaling an estimated 2.5 million. This alternative way to look at employment supported by imports from China is described in more detail in Appendix B.

Table 6 demonstrates that two widely held views about jobs related to imports from China are unfounded: that they are concentrated in retailing, and that they are low-wage jobs. Table 6 shows that the bulk of U.S. jobs related to imports from China are in sectors other than retailing, most notably business services which includes accountants, lawyers, advertising professionals, computer programmers, and management consultants and professionals. Retail jobs do not figure prominently because, if imports from China were not available (the modeling question posed), retailers would eventually find alternate sources for most (but not all) of the goods imported from China. Those sources include U.S. as well as other foreign producers.

The second important fact evident from Table 6 is that the jobs linked to imports from China are high-paying jobs. Compensation is similar, even much higher, than manufacturing sector average compensation.

Our results offer another important point to remember when hearing that imports from China have increased, or when evaluating proposals to cut imports from China. In general, each 10 percent cut in imports from China resulting from, for example, a future barrier to imports, would translates into a decline in the current U.S. employment base, on net, of roughly 0.06 percent or 84,500 jobs.

The jobs linked to imports from China are spread across the United States. Every state has a *net positive number* of jobs tied to imports from China (Table 7). Work opportunities supported by imports from China are greatest in Texas, followed by California, New York and Florida.[9]

The benefits of imports from China extend beyond jobs to include impacts on prices and U.S. inflation. We estimate that the overall U.S. price level is roughly 1.4 percent lower as a result of imports from China.

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[9] The number of Texas jobs related to imports from China exceeds those in California because California has a relatively larger manufacturing base, composed of sectors that are more adversely affected by imports from China (e.g., apparel) than that of Texas. Texas has a bigger primary base (especially energy) relative to California and so a greater number of related jobs.

Table 7: Net Number of American Jobs Linked to Imports from China, By State

State	Jobs	State	Jobs
Alabama	+10,825	Montana	+2,972
Alaska	+2,386	Nebraska	+5,534
Arizona	+12,788	Nevada	+7,315
Arkansas	+5,201	New Hampshire	+3,272
California	+97,230	New Jersey	+23,472
Colorado	+15,310	New Mexico	+5,243
Connecticut	+7,112	New York	+54,351
Delaware	+2,429	North Carolina	+19,879
District of Columbia	+5,018	North Dakota	+2,217
Florida	+50,564	Ohio	+32,137
Georgia	+24,386	Oklahoma	+10,189
Hawaii	+4,784	Oregon	+9,817
Idaho	+3,868	Pennsylvania	+32,701
Illinois	+36,042	Rhode Island	+1,992
Indiana	+15,193	South Carolina	+8,658
Iowa	+7,500	South Dakota	+2,232
Kansas	+5,469	Tennessee	+11,233
Kentucky	+11,547	Texas	+121,038
Louisiana	+11,611	Utah	+5,068
Maine	+3,605	Vermont	+1,734
Maryland	+17,188	Virginia	+20,509
Massachusetts	+19,879	Washington	+12,402
Michigan	+26,901	West Virginia	+4,436
Minnesota	+15,486	Wisconsin	+11,889
Mississippi	+3,675	Wyoming	+1,898
Missouri	+17,149		
		Total	+845,338

SOURCE: Trade Partnership Worldwide, LLC

IV. Impact of U.S. Trade Policy on Imports from China

China frequently figures prominently in U.S. trade policy debates, in part because China is such a large potential market for U.S. exports, and such a large supplier of goods to the U.S. market. This focus on China is also due, in part, because U.S. exporters, in fact, still face significant obstacles to doing business in China. In part this focus on China is also out of a lack of information, with assertions rather than real analysis acting to fill that void. The result only ends up fueling demands that policy makers "do something" about the perceived "China problem."

Most recently, the debate has centered on two hot issues, U.S. textile and apparel imports from China, and China's currency valuation method. Both are alleged to be harming U.S. producers and, consequently, U.S. workers.

To put the debate in proper context, once again some background information is in order. First, while it is widely believed that the United States is one of the most open economies in the world, in fact policy makers should be aware that many of the most significant products imported from China face some of the highest tariffs in the U.S. tariff schedule. Numerous other countries that export products that compete with those imported from China benefit from special trade programs, be they free trade agreements or preference programs, that lower or even eliminate the tariffs their products face when entering the United States. Not so with China, which is not eligible for any preference programs or free trade agreements. Consequently, overall the weighted average tariff faced by imports from China is more than double that faced by imports from all other countries (see Table 8). It is also much higher for products that feature prominently in the public policy debate centered on China, notably apparel and textile products.

Table 8: U.S. Tariffs Applied to Imports of Leading Consumer Goods, 2004
(percent, duties collected weighted by total imports, customs value)

	Faced by China	Faced by Other Countries
Cotton and man-made fiber sweaters	28.1%	22.4%
Cotton and man-made fiber trousers	18.4	9.9
Cotton knit shirts and blouses	16.8	10.1
Cotton and man-made fiber underwear	13.4	5.2
Footwear	10.5	9.3
Glassware, porcelain, and chinaware	9.8	6.7
Cotton towels	9.1	8.4
Cotton pillowcases	8.2	6.5
Cotton sheets	7.9	5.9
Cookware, cutlery, house & garden wares	4.1	2.4
Total, all products	2.9	1.2

SOURCE: Trade Partnership Worldwide, LLC based on the U.S. Bureau of the Census.

In addition to tariffs, important imports from China have faced, and continue to face, limits from quotas. The recent fuss over textile and apparel imports arose because until January 1, 2005 the United States imposed very restrictive quotas on imports of these products from China. The quotas applied to imports from China were much smaller than those of other countries or than were warranted by the highly competitive nature of Chinese textile and apparel producers. Consequently, when the United States complied with its World Trade Organization commitments and joined other major importing countries to eliminate textile and apparel quotas in 2005, predictably imports from China increased dramatically. Their volumes have since moderated, in part because of new protectionist sentiment that arose in the form of requests that special new quotas be applied to imports from China under the so-called China textile safeguard mechanism.

More broadly, U.S. policy makers have also been under particular pressure from American manufacturers to impose a tariff to offset the alleged advantage that China's currency system gives to Chinese exports to the United States. The proposal receiving the most attention from certain Members of Congress would apply a 27.5 percent tariff on top of existing U.S. tariffs to all imports from China.

Given that imports from China have now been shown to support several hundred thousand jobs, the question arises: what would be the job impact of restricting imports from China with a 27.5 percent tariff? Using the same model that calculated the total net job effects of imports from China, TPW estimates that

a 27.5 percent tariff would result in the net loss of nearly 300,000 American jobs (see Table 9). Thirteen jobs would be lost for every one job created. Workers in every state would be adversely affected (see 10).

Table 9: Jobs Lost from 27.5% Tariff on Imports from China

Total Number of U.S. Lost as a Result of Tariff	-311,598
Total Number of U.S. Jobs Created by Tariff	+24,053
Net Number of U.S. Jobs Lost as a Result of Tariff	-287,546

Sectoral Breakdown of Job Impacts	Number	Average Compensation
Business services*	-251,690	$47,401
Transportation & utilities	-28,957	$42,974
Finance & insurance	-14,633	$70,129
Agricultural, forestry, fishing, mining	-10,381	$36,086
Construction	-4,951	$40,446
Wholesale & retail trade	-986	$32,290
Manufacturing	+24,053	$47,861

* Includes services such as management, employment, information, real estate, advertising, accounting, legal, rental and leasing, computer system design, and travel.

SOURCE: Trade Partnership Worldwide, LLC and Bureau of Labor Statistics.

Table 10: State Distribution of Net American Jobs That Would Be Lost from the Imposition of a 27.5 Percent Additional Tariff on Imports from China

Alabama	-3,803	Montana	-1,066
Alaska	-915	Nebraska	-2,003
Arizona	-4,065	Nevada	-2,430
Arkansas	-2,250	New Hampshire	-850
California	-29,794	New Jersey	-8,118
Colorado	-4,600	New Mexico	-1,666
Connecticut	-2,841	New York	-17,730
Delaware	-823	North Carolina	-6,692
District of Columbia	-1,685	North Dakota	-787
Florida	-16,577	Ohio	-11,254
Georgia	-8,254	Oklahoma	-3,638
Hawaii	-1,578	Oregon	-3,075
Idaho	-1,160	Pennsylvania	-11,495
Illinois	-11,982	Rhode Island	-804
Indiana	-5,860	South Carolina	-3,271
Iowa	-2,809	South Dakota	-805
Kansas	-2,621	Tennessee	-5,023
Kentucky	-4,060	Texas	-39,525
Louisiana	-4,547	Utah	-2,048
Maine	-1,386	Vermont	-518
Maryland	-5,371	Virginia	-7,303
Massachusetts	-5,650	Washington	-5,311
Michigan	-9,387	West Virginia	-1,688
Minnesota	-4,875	Wisconsin	-4,831
Mississippi	-2,045	Wyoming	-689
Missouri	-6,015		
		Total	-287,546

SOURCE: Trade Partnership Worldwide, LLC

V.   Conclusion

Imports from China play a large role in the U.S. market, and that role is a positive one. Most Americans understand their contribution to providing greater product choice and lowering prices. Now, they should also understand that imports from China support hundreds of thousands of jobs in the United States, jobs that are at risk from demands from various quarters that restrictions be placed on those imports. America's economic future and our ability to maintain our high living standards depend on our ability as a nation to compete successfully in global markets. Imports from China contribute to this effort.

APPENDIX A

Methodology to Estimate Dynamic Output and Employment Impacts of Imports from China

Different options are available to estimate trade linkages to employment and output. One involves manipulation of input-output tables to map the linkages between imports to labor demand and total output across sectors. Such static, "snap shot" approach presents several problems, however. The first is that the shares in the base data basically fix the structure of production and demand. Such a view of employment related to trade would not account for job losses in such sectors as manufacturing from foregone U.S. production of similar products. In addition, there may be double counting, as the net effect imports is not the simple sum of import effects. Moreover, such an approach may overestimate effects unless the impact of substitution toward trade with the rest of the world is also included. Nevertheless, to see what such an approach would yield, see Appendix B.

A more appropriate approach is dynamic in nature. It permits employment to adjust to the opportunity to source goods from other producers, be they domestic or foreign. To accommodate these issues, we applied a computable multi-sector model of the U.S. economy. Computable general equilibrium (CGE) models are characterized by an input-output structure (based on regional and national input-output and employment tables) that explicitly links industries in a value added chain from primary goods, over continuously higher stages of intermediate processing, to the final assembling of goods and services for consumption. Inter-sectoral linkages are direct, like the input of steel in the production of transport equipment, and indirect, via intermediate use in other sectors. The model captures these linkages by modeling firms' use of factors and intermediate inputs. The most important aspects of the model can be summarized as follows: (i) it covers all world trade and production; and (ii) it includes intermediate linkages between sectors.

Our data come from a number of sources. Data on production and imports are based on national social accounting data linked through trade flows (see Reinert and Roland-Holst 1997). These social accounting data are drawn directly from the most recent version of the Global Trade Analysis Project (GTAP) dataset, version 6.0. (Dimaranan and McDougall, 2002). The GTAP version 6 dataset is benchmarked to 2001, and includes detailed national input-output, trade, and final demand structures. The basic social accounting and trade data are supplemented with trade policy data, including additional data on tariffs and non-tariff barriers. The data are supplemented with data from the U.S. Department of Labor on state-level employment and from the U.S. Bureau of Economic Analysis on state level output for 2003, the most recent year available. These data allow us to map nationwide effects to state-level changes in employment and output.

The data on tariffs are taken from the World Trade Organization's (WTO) integrated database, with supplemental information from the World Bank's recent assessment of detailed pre- and post-Uruguay Round tariff schedules and from the UNCTAD/World Bank WITS dataset. All of this tariff information has been mapped to GTAP model sectors within the version 6 database. The sectors in the model are shown in Table A-1. The GTAP regions are aggregated into the U.S., China, and rest-of-world.

Table A-1: Model Sectors

	Corresponding GTAP sectors		Corresponding GTAP sectors
Primary		*Nondurable goods*	
1) Agriculture, forest., fish	1-14	13) Food, beverages, and tobacco	19-26
2) Mining	15, 16, 17, 18	14) Textiles	27
Construction		15) Apparel	28
3) Construction	46	16) Paper products, publishing	31
Manufacturing		17) Chemicals, rubber, plastics	33
Durable goods		18) Petroleum products	32
4) Lumber & wood	30	19) Leather products	29
5) Stone, clay, glass	34	*Services*	
6) Primary metals	35,36	Transportation & utilities	
7) Fabricated metals	37	20) Transportation	48, 49, 50
8) Industrial machinery	41	21) Communications	51
9) Electronic equipment	40	22) Electric, gas, & sanitary	43, 44, 45
10) Motor vehicles	38	23 Trade	47
11) Other transport. equip.	39	Finance and Insurance	
12) Other manufacturing	42	24) Finance	52
		25) Insurance	53
		26) Other Private Services	54, 55, 57
		27) Public Services	56

Aggregate demand in each region is modeled through a composite regional household, with expenditures allocated over government, personal consumption, and savings. The composite household owns endowments of the factors of production and receives income by selling them to firms. It also receives income from domestic taxes, tariff revenues, and rents accruing from import/export quota licenses (when applicable). Part of the income is distributed as subsidy payments to some sectors, primarily in agriculture.

On the production side, in all sectors, firms employ domestic production factors (capital, labor and land) and intermediate inputs from domestic and foreign sources to produce outputs in the most cost-efficient way that technology allows. Capital stocks are fixed at a national level. Firms are competitive, and employ capital and labor to produce goods and services subject to constant returns to scale.[10] Products from different regions are assumed to be imperfect

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[10] Compared to dynamic CGE models and models with alternative market structures, the present assumption of constant returns to scale with a fixed capital stock

substitutes in accordance with the so-called "Armington" assumption. The trade elasticities used to model Armington demand for imports are shown in Table A-2.[11]

Table A-2: Armington Elasticities

		lower	upper
1)	Agriculture, forest., fish	2.42	4.93
2)	Mining	5.75	13.45
3)	Construction	1.90	3.80
4)	Lumber & wood	3.40	6.80
5)	Stone, clay, glass	2.90	5.80
6)	Primary metals	3.42	7.16
7)	Fabricated metals	3.75	7.50
8)	Industrial machinery	4.05	8.10
9)	Electronic equipment	4.40	8.80
10)	Motor vehicles	2.80	5.60
11)	Other transport. equip.	4.30	8.60
12)	Other manufacturing	3.75	7.50
13)	Food, beverages, and tobacco	2.49	5.04
14)	Textiles	3.75	7.50
15)	Apparel	3.70	7.40
16)	Paper products, publishing	2.95	5.90
17)	Chemicals, rubber, plastics	3.30	6.60
18)	Petroleum products	2.10	4.20
19)	Leather products	4.05	8.10
20)	Transportation	1.90	3.80
21)	Communications	1.90	3.80
22)	Electric, gas, & sanitary	2.80	5.60
23)	Trade	1.90	3.80
24)	Finance	1.90	3.80
25)	Insurance	1.90	3.80
26)	Other Private Services	1.90	3.80
27)	Public Services	1.90	3.80

Source: Hummels and Hertel estimates from GTAP.

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is closest in approach to older studies based on pure input-output modeling of trade and employment linkages. In the present context, it can be viewed as generating a lower-bound estimate of effects relative to alternative CGE modeling structures.

[11]   Model results depend on the underlying trade elasticities. The elasticities used here are the standard set of elasticities for the GTAP database and model.

While the model, at the macro level, follows the basic GTAP structure (Hertel et al 1997, Hertel and Itakura 2000), we are ultimately interested in the impact of imports from China on state economies given the current U.S. wage structure. In other words, given the current wage structure of the labor force, how many jobs in the U.S. economy are linked either directly or indirectly to imports. This involves employing a labor market closure (equilibrium conditions) where we fix wages at current levels, and force employment levels to adjust. This provides a direct estimate of the jobs supported, at current wage levels, by the current level of imports. In addition, employment and output are mapped by a set of side equations (equations added to the core model) to capture state-level effects.

Elasticities are calculated directly from our experiment results. They provide a measure of the marginal impact of imports from China on employment and output, mapping the impact of this relationship across states and sectors and highlighting the importance of output and employment structure at the state level. Formally, an import elasticity is defined as follows. For employment E and GSP G in state j in sector i, the impact of a percent change in imports M from China $\%\Delta E$ involves the sector import elasticity $\varepsilon_{i,j}$:

$$\varepsilon_{i,j}^{emp} = \frac{\%\Delta E_{i,j}}{\%\Delta M} \tag{1}$$

$$\varepsilon_{i,j}^{GSP} = \frac{\%\Delta G_{i,j}}{\%\Delta M} \tag{2}$$

Building from these effects, and given that total state employment is $E_j = \sum_i E_{i,j}$ and GSP is $G_j = \sum_i G_{i,j}$, it follows that that the total state employment and GSP elasticities are:

$$\varepsilon_j^{emp} = \frac{\%\Delta E_j}{\%\Delta M} = \sum_i \theta_{i,j}^{emp} \varepsilon_{i,j}^{emp} \tag{3}$$

$$\varepsilon_j^{GSP} = \frac{\%\Delta G_j}{\%\Delta M} = \sum_i \theta_{i,j}^{GSP} \varepsilon_{i,j}^{GSP} \tag{4}$$

where $\theta_{i,j}$ is the state employment or GSP share of sector i. The national employment and GSP effects then follow from underlying state and sector components.

$$\varepsilon^{emp} = \frac{\%\Delta E}{\%\Delta M} = \sum_j \sum_i \phi_{i,j}^{emp} \theta_{i,j}^{emp} \varepsilon_{i,j}^{emp} \qquad (5)$$

$$\varepsilon^{GSP} = \frac{\%\Delta G}{\%\Delta M} = \sum_j \sum_i \phi_{i,j}^{GSP} \theta_{i,j}^{GSP} \varepsilon_{i,j}^{GSP} \qquad (6)$$

where $\phi_{i,j}$ is the state *i* share of employment or GSP in sector *j*.

A similar set of relationships holds for changes in the tariff T, yielding tariff elasticities τ.

$$\tau_{i,j}^{emp} = \frac{\%\Delta E_{i,j}}{\%\Delta T} \qquad \tau_{i,j}^{GSP} = \frac{\%G_{i,j}}{\%\Delta T} \qquad (7,8)$$

$$\tau_j^{emp} = \frac{\%\Delta E_j}{\%\Delta T} = \sum_i \theta_{i,j}^{emp} \tau_{i,j}^{emp} \qquad \tau_j^{GSP} = \frac{\%\Delta E_j}{\%\Delta T} = \sum_i \theta_{i,j}^{GSP} \tau_{i,j}^{GSP} \qquad (9,10)$$

$$\tau^{emp} = \frac{\%\Delta E}{\%\Delta T} = \sum_j \sum_i \phi_{i,j}^{emp} \theta_{i,j}^{emp} \tau_{i,j}^{emp} \qquad \tau^{GSP} = \frac{\%\Delta E}{\%\Delta T} = \sum_j \sum_i \phi_{i,j}^{GSP} \theta_{i,j}^{GSP} \tau_{i,j}^{GSP} \qquad (11,12)$$

The experiments conducted with the model for total imports involve imposing changes in U.S. imports from China. This allows us to deconstruct the import relationship, tracing changes at the border as they work through the U.S. economy. We reduce U.S. imports from China.[12] This involves both a 1 percent reduction (so that we can estimate a set of employment and output elasticities) and also full elimination of trade (so that we can estimate full effects) by way of a prohibitive tariff. For tariff effects, we target the level of the tariff rather than the level of trade.

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[12]   This is accomplished by making a set of bilateral export taxes with the U.S. endogenous, while making trade quantities exogenous and then reducing them by target amounts, which is appropriate since the relevant question is the benefit of current conditions of trade.

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APPENDIX B

Calculation of Static/"Snap Shot" View of U.S. Jobs Related to Imports from China, 2004

This study focused on estimating the number of *net* U.S. jobs tied to imports from China. In other words, the following question was asked: How many American jobs would be lost if imports from China were cut off, allowing for adjustments as U.S. importers shift sourcing to other countries, and to U.S. producers?

Another question could also be asked: how many U.S. jobs are tied to imports from China today, without regard to alternative employment opportunities that might be found if purchasers sought goods from alternative sources, including U.S. manufacturers? This estimate would be larger than the answer to the first question, as it would not account for any adjustments. It provides an alternative, albeit somewhat overstated, picture of the job-links to China today.

To calculate this "snap shot" view of employment tied to imports from China, one needs to calculate the wholesale and retail margins (and the transportation margins) associated with moving landed, duty-paid imports from China from their port of entry to their final purchaser (consumers, in the case of finished goods; manufacturers, in the case of industrial products and raw materials). The Census Bureau publishes such margins for different categories of products and retailers. The U.S. Department of Labor publishes an "employment requirements" table that enables us to then take these margins and find the related employment across the range of U.S. sectors. The process by which we made these calculations is explained in more detail below.

The results are reported in Appendix Table B-1. Nearly 2.5 million jobs were linked to imports from China in 2004. Not surprisingly, most (65 percent) were in retailing, followed importantly by jobs in wholesaling (11 percent). But also noteworthy are almost 75,000 jobs in manufacturing, and over 28,000 jobs in transportation (including members of the longshore unions, no doubt).

It is also important to note that these are "good" -- high-paying – jobs. Workers in the wholesale trade sector earn more than $50,000 a year. More than 40,000 workers in the information sector with jobs tied to imports from China earn on average almost $60,000 a year. Finance and banking workers linked to imports from China earn more than $76,000 a year. (Average annual compensation for retail workers and workers in employment services are biased downward because so many of those workers are employed part-time.)

Table B-1: "Snap Shot" View of American Jobs Tied to Imports from China, 2004

	Number	Average Annual Compensation
Total	2,490,888	$39,354
Retail trade (ex. food service/drinking)	1,610,848	24,415
Wholesale trade	271,422	53,310
Business support services	86,134	30,754
Manufacturing	74,544	47,861
Management services	70,092	67,877
Employment services	50,807	23,533
Information (e.g., newspapers, tele-communications)	43,417	60,722
Leisure and hospitality (inc. food service and drinking places)	36,866	16,624
Transportation of goods	28,463	43,332
Other services (e.g., maint. & repair)	25,079	25,152
Finance and banking	22,765	76,143
Real estate	21,249	39,263
Other transportation	18,717	40,605
Advertising	15,876	56,379
Accounting and related services	14,697	47,521
Education and health services	14,001	36,548
Warehousing and storage	12,841	35,304
Construction	11,493	40,521
Architectural, engineering and design services	10,451	61,326
Government	9,216	45,418
Legal services	8,816	66,935
Utilities, waste management	6,909	62,397
Rental and leasing services	6,428	31,382
Agriculture, forestry, fishing	6,289	22,337
Computer systems design and services	5,585	77,577
Insurance	4,537	59,371
Mining	1,939	66,632
Travel services	1,409	37,806

SOURCE: Trade Partnership Worldwide, LLC and U.S. Bureau of Labor Statistics.

Methodology

Trade Partnership Worldwide, LLC (TPW) derived the estimates of the number of jobs related to goods imported in 2004 using the Bureau of Labor Statistics' "2002 Nominal Domestic Employment Requirements" table. This is a very detailed, sector-by-sector spreadsheet that reports the number of jobs (or fractions of jobs) for 184 individual sectors that are associated with $1 million in output of a given industry. It is based on historical input-output relationships, factoring in employment and productivity variables. The 2002 table is the most recent available from BLS, and it reflects technology and labor productivity prevailing in 2002.

The table can be used to evaluate the employment impact of imports from China by focusing narrowly on the wholesale and retail mark-up on those imports. The first step is to estimate the value added (the mark up) by wholesalers and retailers to distribute the total value of imports in 2004. TPW obtained the total landed value (Customs value plus tariffs paid and c.i.f. charges incurred) of U.S. consumer and non-consumer goods (as defined by "end use" categories) for 2004 from U.S. Census data. Some products are imported directly by manufacturers or by retailers and others first by wholesalers who in turn sell to retailers or manufacturers, and this needs to be factored into the applications of the mark ups. TPW assumed that half of consumer goods are imported directly by retailers and the other half by wholesalers who then sell to retailers. TPW assumed that all industrial goods are imported by wholesalers and then resold to manufacturers.

To calculate the value added (mark up) for each product category of imports, TPW used wholesale and retail gross margins by type of wholesale or retail category as reported by the Bureau of the Census for 2003 (the most recent year available). Gross margins represent the mark up wholesalers and retailers need to apply to cover their labor and other costs associated with getting the products to their customers.

The resulting values were then multiplied by the coefficients provided in the employment requirements table for wholesale trade, and for retail trade. The results are reported in Table B-1.

It should be noted that, like the job estimates provided in the body of this report, the "snap shot" estimates suggested here relate to imports of goods only from China. They do not reflect the American jobs related to services trade with China.