

**TRADE PARTNERSHIP WORLDWIDE, LLC**

**Estimated Impacts of Proposed Tariffs on Imports from China:  
Televisions, Monitors, Batteries and Printer Cartridges**

**Prepared for**

**The Consumer Technology Association**

**And**

**The National Retail Federation**

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## **Estimated Impacts of Proposed Tariffs on Imports from China: Televisions, Monitors, Batteries and Printer Cartridges**

President Donald Trump has proposed that the United States impose tariffs of 25 percent on imports of over 1,300 products imported from China. Several consumer products are included on the list.

Trump administration officials have stated that the tariffs will ultimately have little if any negative impacts on American consumers because other sources of supply are available to substitute for Chinese-made goods that are affected by the tariffs.

We employed a model, described in Appendix A, to estimate the ultimate impacts on consumers of four products categories of 25 percent tariffs on imports of those products from China. This model reflects the shifts that would occur from China to other sources of supply. The products are televisions, monitors, batteries and printer cartridges. The results are presented below. They show that, even accounting for alternative sources of supply, the proposed tariffs would have a negative impact on American consumers.

### **Televisions**

Imposition of the tariffs causes U.S. imports from China of televisions to decline, and Chinese production to drop by 2.1 percent. Production in other countries rises to compensate, where possible.<sup>1</sup> U.S. production also increases, by 1.1 percent.

The tariffs have a negative impact on U.S. television consumers in the form of higher prices. U.S. consumer prices for TVs imported from China jump by 23.0 percent. Overall, TV prices increase by 4.1 percent, and U.S. consumers cut back on purchases of TVs by 7.8 percent. The tariffs force consumers to pay \$711 million more than they otherwise would for the televisions they continue to buy. The net impact on the economy (the value of U.S. producer gains plus tariff revenues to the U.S. government, minus the value of consumer losses) is a hit of \$322 million.

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<sup>1</sup> It is important to note that the types of TVs currently imported from China differ markedly from TVs imported from other countries. As such, sourcing is not easily transferred to these other countries. In 2016, the average unit value of TVs imported from China was \$192. The average unit value of TVs imported from Japan was \$1,153; Korea, \$939, and Mexico, \$367. Clearly, a consumer shopping in the TV price point met by a Chinese-made TV is not going to switch to a TV in the price point of a Japanese-made TV, for example. Of the leading “alternative” suppliers, the only countries that produced TVs with an average unit value similar to that of China were Thailand, \$145; Hong Kong, \$206, and Taiwan, \$134. We adjusted our substitution elasticities to reflect the limited nature of alternative sources of supply.

## Monitors

Imposition of the tariffs causes U.S. imports from China of monitors to decline, and Chinese production to drop 2.5 percent. Production in other countries increases, primarily in Mexico, where monitor output increases by 1.6 percent.<sup>2</sup>

The tariffs have a negative impact on U.S. monitor consumers in the form of higher prices. U.S. consumer prices for monitors imported from China increase by 23.5 percent. Overall, monitor prices increase by 2.8 percent, and U.S. consumers cut back on purchases of monitors by 5.4 percent. The tariffs force consumers to pay \$172 million more than they otherwise would for the monitors they continue to buy. The net impact on the economy (the value of U.S. producer gains plus tariff revenues to the U.S. government, minus the value of consumer losses) is a hit of \$36.7 million.

## Batteries

Imposition of the tariffs causes U.S. imports from China of batteries to decline, by 0.5 percent. Production in other countries rises to compensate, in part; it increases by the greatest percentage in the United States, where battery output increases by 0.4 percent.

The tariffs have a negative impact on U.S. battery consumers – both households and U.S. producers of products that contain batteries -- in the form of higher prices. U.S. producer prices of batteries increase by 0.3 percent, and consumer prices for batteries imported from China increase by 23.8 percent. Consumer prices for batteries overall increase by 0.8 percent and, as a result, U.S. consumers cut back on purchases of batteries by 1.6 percent. The tariffs force consumers to pay \$24 million more than they otherwise would for the batteries they continue to buy.

## Ink and Cartridges

Imposition of the tariffs causes U.S. imports from China of ink and cartridges for printers to decline, by 2.7 percent. Production in other countries rises to compensate, in part; it increases by the greatest percentage in the United States, where ink and cartridge output increases by 1.2 percent.

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<sup>2</sup> As with TVs, the unit values of monitors imported from China also differ considerably, limiting the degree to which other sources of supply can compensate for losses of supply from China. In 2016, the average unit value of monitor imports from China was \$82, compared to \$790 from Japan; \$279 from Korea, \$500 from Malaysia, and \$310 from Canada. The average unit value of imports from Mexico was \$148; Thailand, \$117, and Indonesia, \$65. Again, we adjusted our elasticities of substitution to reflect these limitations.

But the tariffs have a negative impact on U.S. cartridge consumers – both households and U.S. producers -- in the form of higher prices. U.S. producer prices of ink and cartridges increase by 1.0 percent, and consumer prices for ink and cartridges imported from China increase by 22.7 percent. Consumer prices for ink and cartridges overall increase by 4.1 percent and, as a result, U.S. consumers cut back on purchases of ink and cartridges by 7.8 percent. The tariffs force consumers to pay \$529 million more than they otherwise would for the batteries they continue to buy. The net impact on the economy (the value of U.S. producer gains plus tariff revenues to the U.S. government, minus the value of consumer losses) is a hit of \$180 million.

### **Product HTS Codes**

#### *Televisions*

HTS 8528.71.10, 8528.71.30, 8258.72.08, 8258.72.16, 528.72.32, 8528.72.48, 8528.72.52, 8528.72.56, 8528.72.62, 8528.72.64, 8528.72.80, 8528.72.97

#### *Monitors*

HTS 8528.49.05, 8528.49.10, , 8528.49.25, 8528.49.30, 8528.49.40, 8528.49.50, 8528.49.65, 8528.49.70, 8528.49.75, 8528.59.23, 8528.59.25, 8528.59.33, 8528.59.45, 8528.59.60

#### *Batteries*

HTS 8506.40.10, 8506.40.50, 8506.50.00, 8506.60.00, 8506.90.00, 8507.30.80, 8507.90.40, 8507.90.80

#### *Ink Cartridges*

HTS 8443.99.20, 8443.99.25, 8443.99.45, 8443.99.50

## Appendix A Methodology

We employed a modeling strategy for industry-focused globally-linked partial equilibrium analysis of tariff policy.

Based on the Harmonized Tariff Schedule (HTS) items identified in the *Federal Register* notice as proposed for tariffs of 25 percent when imported from China, we have built a set of product-specific models based on the “global simulation model” framework (GSIM). Francois and Hall (2007) developed GSIM to allow detailed analysis of tariff scenarios across individual products and potentially all major trading countries and blocks. The World Bank and the United Nations adopted the GSIM framework, integrating it into the joint World Bank-UNCTAD trade data portal known as the “World Integrated Trade Solution,” or WITS (see <http://wits.worldbank.org/wits/>).<sup>3</sup> The basic framework employed here can be implemented with a spreadsheet-based interface. We should stress that, in implementation, this set of models is structurally consistent with the recent class of Eaton-Kortum based structural trade models (see Bekkers *et al*, 2015; Costinot and Rodriguez-Clare, 2014 for example).

The basic approach involves specifying global supply and demand for each set of goods produced by a particular country as the sum of individual (national) sources of supply and demand. This is done for goods produced in all regions in the model. We are then able to reduce the solution set of the model to those global prices that clear global markets. Once we have a global set of equilibrium prices, we can obtain national results (changes in prices and quantities). Based on price and quantity changes, we in turn obtain estimates of changes in production, trade, consumer and producer surplus, and real national income that result from the imposition of tariffs on imports from China. Within this context, we work with a non-linear representation of import demand, combined with generic export-supply equations (see Francois and Hall 2007).

### *Data Sources*

Trade data and tariffs are from “World Integrated Trade Solution,” or WITS (see <http://wits.worldbank.org/wits/>) and the U.S. Census Bureau.

Production data (domestic sales) are from country input/output tables and from the Census Bureau’s Annual Survey of Manufacturers. The latest data from that resource is 2016, so all import data are also for 2016.

Trade elasticities are from the Global Trade Analysis Project (GTAP).

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<sup>3</sup> Another application, the MRPE model, is a specialized, scalable extension of the GSIM framework for strategic trade policy assessments at the detailed sector level, developed for the European Commission.

*Country Disaggregation*

Canada (CAN)

China (CHN)

European Union (EUN)

Hong Kong (HKG)

India (IDN)

Japan (JPN)

Korea (KOR)

Mexico (MEX)

Malaysia (MYS)

Singapore (SGP)

Taiwan (TWN)

Thailand (THA)

Rest of World (ROW)

Vietnam (VNM)

United States (USA)