

# An Analysis of USA Imports of Washing Machines before and after Increases in US Tariffs in early 2018

## 1. Introduction

The theoretical impact of increased import tariffs on washing machines is to increase the price of imported machines relative to domestic manufactured machines. Theory would suggest the increase in import prices leads to a substitution away from imports towards domestically produced machines. Thus, the expected result is lower import volumes and higher domestic production but at the cost to US consumers who pay higher prices.

In February 2018, the US imposed a 20% tariff on imported washing machines. The purpose of this paper is to examine the statistical evidence on the impact of these tariff increases on imports into the US.

US imports of washing machines are concentrated in household type machines of a carrying capacity of greater than 10 Kgs and are either top loading or other than top loading machines. These two categories accounted for 82.2% or just over 9 million of the 11 million washing machines imported into the US in 2017. We analyze recent US import statistics of these two categories below.

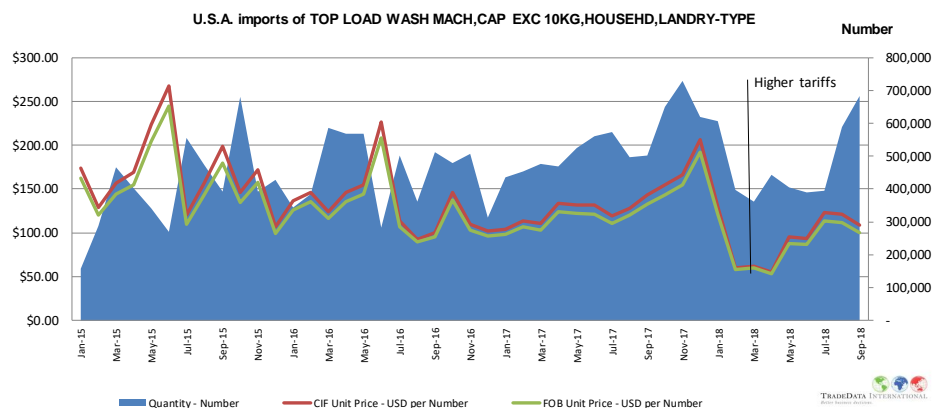
Import Code	Description	Number in 2017	% total imports
8450200040	TOP LOAD WASH MACH, LOAD > 10KG, HOUSEHOLD LAUNDRY TYPE	6,478,491	58.7%
8450200080	WASH MACH, LOAD > 10KG, HOUSEHOLD LAUNDRY TYPE, EXCLUDING TOP	2,598,719	23.5%
		9,077,210	82.2%

## 2. An Analysis of US imports of TOP LOAD WASH MACH, LOAD > 10KG, HOUSEHOLD LAUNDRY TYPE

Chart 1 list the volume of washing machines imported into the US and shows very strong growth throughout 2017 from around 400,000 machines a month at the beginning of the year to over 600,000 by year's end. The new 20% tariff came into effect in February 2018 and its effect is immediately seen with import volumes declining to just 400,000 at this time. These volume levels are maintained until August when volumes again sharply increase to just below 590,000 machines. Volumes increased further to just below 700,000 in September.

Thus, the initial impact of the tariff is a decline in import volumes but after 6 months this decline is reversed with volumes near record levels again in September 2018.

**Chart 1. US imports by volumes and average prices**



Average import prices also declined with the introduction of higher tariffs, but this is somewhat misleading due to the changing compositional mix between lower and higher priced machines.

Chart 2 lists a price histogram of US imports in 2017. This clearly shows there are two major market segments and 2 smaller segments. The largest segment, by far, are lower priced machines from China at prices around \$US 50 per machine. The second major segment is at 6 times these prices and are imports from Thailand around \$US 300 per machine. There are two smaller and higher priced segments from Viet Nam between \$US 350 and \$US 400 per machine and from South Korea at above \$US 550 per machine.

Clearly this is a very segmented market dominated by lower priced machines from China and numerous smaller but higher priced machines from elsewhere in Asia.

**Chart 2. US imports – price histogram for 2017**

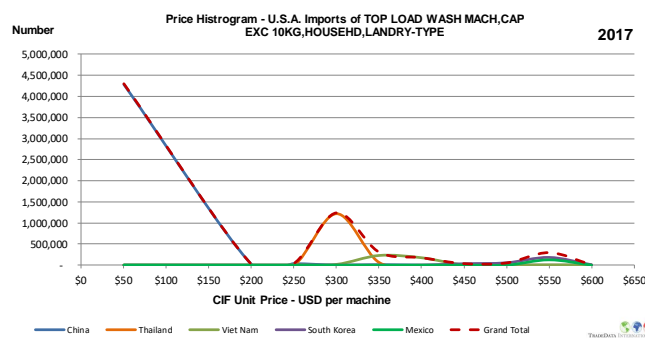
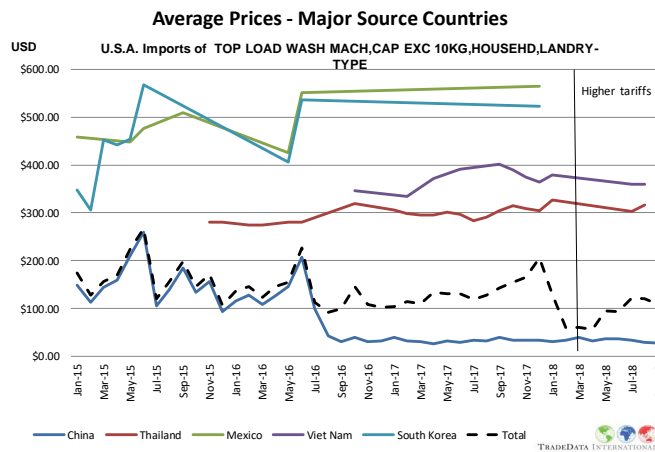


Chart 3 list monthly average prices for the major supply countries before and after the introduction of increased tariffs. Prices are remarkably stable. Prices from the two largest supply countries (US and Thailand) are stable. However, imports of the far higher priced machines from South Korea and Mexico have stopped.

**Chart 3. US imports – average prices for major supply countries**



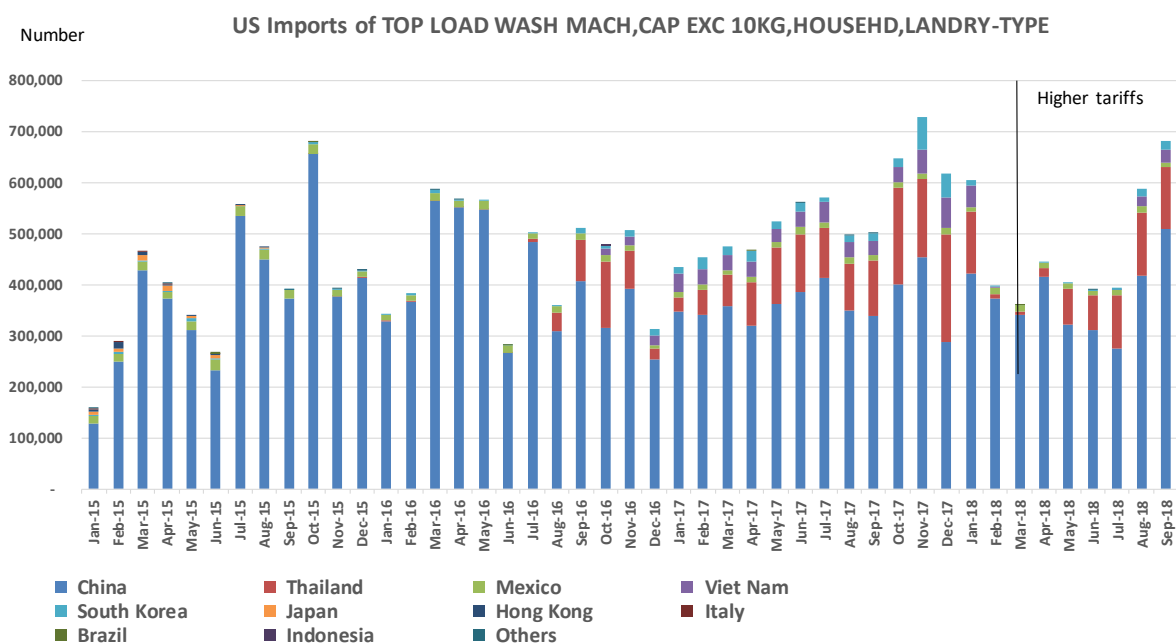
In total, average prices fell with the introduction of the new tariffs, yet individually prices are stable. How can this be? Chart 4 shows the changing composition of imports to explain this. There are large declines in the volumes of higher priced imports from Thailand and elsewhere with little change in the volume of lower priced imports from China.

Prior to the introduction of the new tariff imports into the US were growing strongly but mostly from higher priced imports from Thailand, Viet Nam and South Korea. Imports from China, although volatile on a month to month basis, were steady on a trend basis.

The introduction of the tariff in February saw a collapse in higher priced imports from Thailand, South Korea and Viet Nam in the first few months of 2018 and then a decline in imports from China in the middle of the year. In recent months imports from Thailand start to recover and there has been a large increase in imports again in August and September from both China and Thailand.

Chart 4 shows the impact of the tariff which has been an immediate decline in import volumes but by August imports levels are back to pre-tariff historic high levels. The second impact of the tariff was the collapse in higher priced machines and a substitution into lower priced machines from China. Again, this impact is short lived and has been reversed somewhat in recent months.

**Chart 4. US imports by supply countries**



### 3. An Analysis of US imports of OTHER THAN TOP LOAD WASH MACH, LOAD > 10KG, HOUSEHOLD LAUNDRY TYPE

Chart 5 list the monthly volume of washing machines imported into the US as well as average prices. Monthly import volumes late in 2017 were around 250,000 machines compared with top loading machines (previously analysed) at over 600,000 machines. Import volumes increased significantly late in 2017. Average import prices were steady throughout 2017 with an average of just over \$US 300 a machine.

Tariffs were increased in February 2018 and has the effect of substantially reducing import volumes from a peak near 300,000 machines in December 2017 to near 100,000 machines in March 2018. Since these early declines import volumes have rebounded back to previous high 2017 levels in August/September 2018. Thus far the impact of the tariff increase has been a short-term decline in volumes, with volumes rebounding again to near previous levels in August and September

**Chart 5. US imports by volumes and average prices**

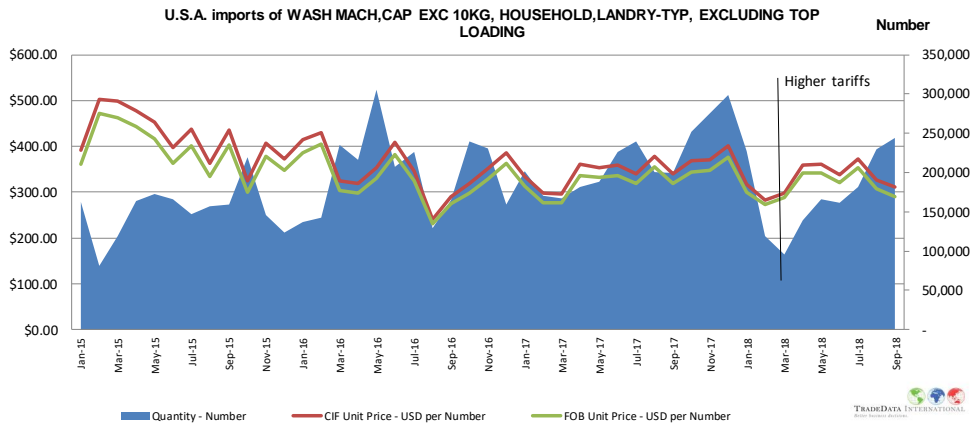


Chart 6 lists a price histogram on US imports in 2017. China is selling machines at extremely low and very hard to believe prices, yet this is what the import statistics are showing. All other suppliers are selling at prices around \$US 400 a machine. At these prices Viet Nam and to a lesser extent Thailand are the major supply countries.

**Chart 6. US imports – price histogram for 2017**

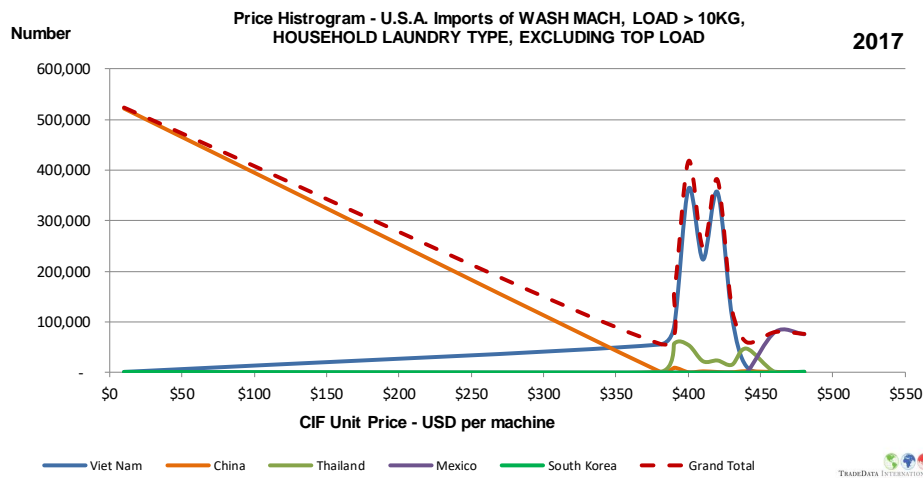


Chart 7 lists average prices for the major supply countries. After the introduction of the higher tariffs average prices from China increased many folds. Average prices from Thailand also increased. Prices from South Korea declined.

**Chart 7. US imports – average prices for major supply countries**

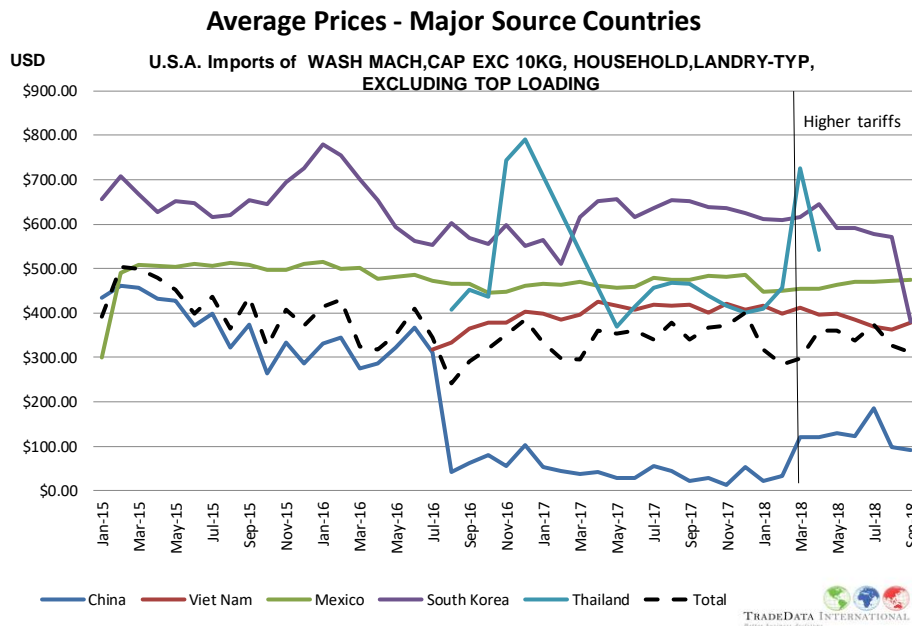
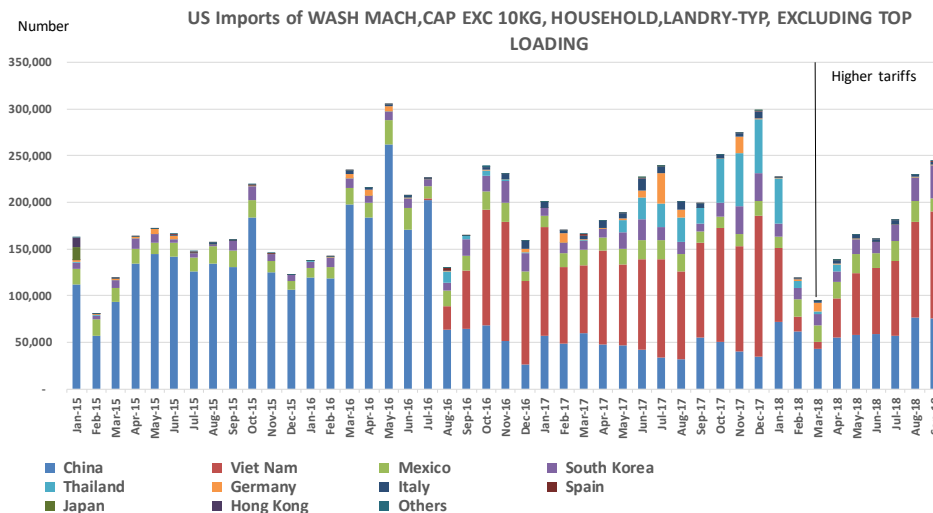


Chart 8 lists import volumes across the major supply countries. Prior to the middle of 2016 the import market was dominated by machines from China at prices around \$300 a machine. However, since then and up to the end of 2017, Viet Nam and more recently Thailand, took substantial market share away from China. Import volumes from China had decreased by 75% and were replaced by imports from Viet Nam and Thailand. The higher tariff introduction saw an immediate near cessation of imports from these two countries which contributed to a large decline in total imports in early 2018. However, since April imports from Viet Nam, China and South Korea have started a recovery with total import volumes in August and September close to their levels of a year earlier.

**Chart 8. US imports by supply countries**



In both instances – top and other loading types of washing machines – the impact of higher tariffs appears to be a 6 month disruption to the level and composition of imports. However recent results suggest the import levels are returning to previous levels even with the higher tariffs in place.

## 4. Consumer Costs

Chart 9 lists a component of the Consumer Price Impact (CPI) - Laundry Equipment. Laundry Equipment prices experienced a long period of steady declines throughout 2017 and early 2018. After the introduction of higher tariffs prices increased strongly and peaked at over 15% in July 2018. Clearly higher tariffs have translated into higher prices for consumers.

**Chart 9. Consumers prices – laundry equipment**

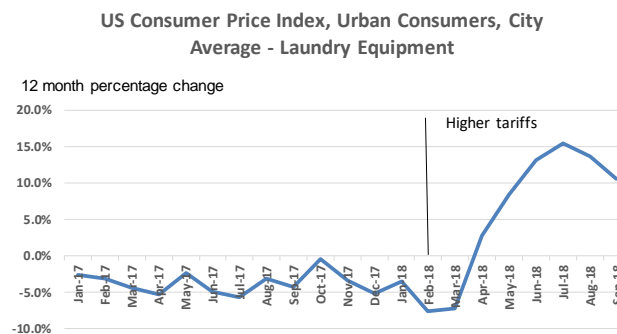
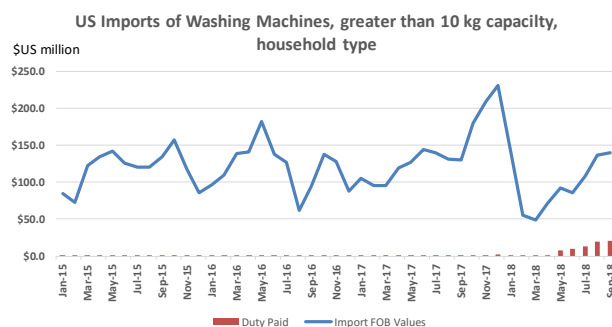


Chart 10 expresses these higher prices in another way and shows that by September 2018 the additional tariff collections amounted to just over \$21 million dollars in that month. If this continues then the additional annual cost is around 240 million dollars a year.

**Chart 10. US import of household washing machines – duty paid**



## 5. Conclusions

The statistical evidence suggests that the introduction of higher tariffs in February severely disrupted the import market for only a short time. Within 6 months import volumes had recovered to their previous historical high levels. The cost of these tariffs is borne by higher prices paid for the machines by consumers,

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