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Street View

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EXECUTIVE SUMMARY The U.S. dollar has appreciated more than fourteen percent since the beginning of 2014. However, the exchange rate plays a 10-30 percent smaller role than it once did in driving international trade. As a result, the pain felt by U.S. exporters (and the drag on U.S. GDP growth) from the fourteen percent appreciation should hurt less than many might imagine.

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Inside:
Dollar Not as Strong as it Seems

DOLLAR NOT AS STRONG AS IT SEEMS

That the U.S. dollar has strengthened over the past year should come as no surprise. Central banks in Japan, China, and the euro zone have loosened monetary policy via conventional and unconventional means, while the U.S. Federal Reserve appears poised to tighten monetary policy. What may surprise some is that the exchange rate plays a 10–30 percent smaller role than it once did in international trade. As a result, the pain felt by U.S. exporters (and the drag on U.S. GDP growth) from the fourteen percent appreciation of the dollar since the beginning of 2014 should hurt the U.S. economy less than many might imagine.

EXPORTS ARE NO LONGER EXPORTS

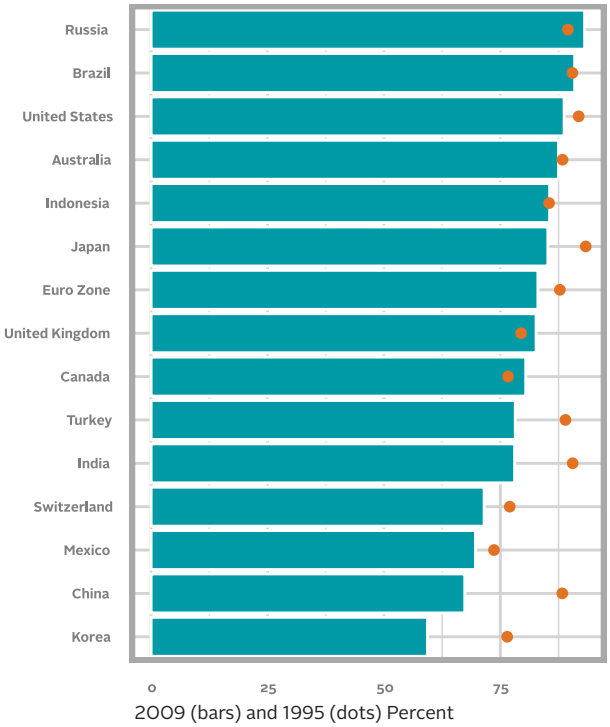
Just like buying an iPad means consuming goods produced by companies other than Apple (e.g., Samsung memory chips, Corning cover glass, Foxconn assembly), importing products from one country frequently means indirectly importing intermediate goods from other countries. Hummels, Ishii, and Yi (2001) estimated that vertical specialization (i.e., different producers contributing intermediate inputs to final consumables) accounted for thirty percent of global trade as long ago as 2000.

Since then, academic research has delved deeper into the role of imported intermediate goods in global exports. The OECD and WTO maintain a dataset that estimates the domestic value-add of a country's final exports (Figure 1). Domestic value-add measures the incremental value created within a country for that country's exports. For the iPad example, Apple's "value-add" would be the price consumers pay for the device less the intermediate inputs (e.g., memory chips) and shipping costs.

While the OECD/WTO data is not timely, it is instructive. For countries primarily exporting natural resources (e.g., Russia and Brazil), the fraction of value added domestically in exports exceeds 90 percent.[1] For countries primarily exporting manufactured products (e.g., China, Korea), the fraction of value-add falls below 70 percent. Larger markets (e.g., the U.S.) also tend to have a higher fraction of domestic value-add, because more intermediate products are available internally.

The fraction of value-add for most countries declined between 1995 (first year available) and 2009 (most recent data). The orange dots in Figure 1 show the 1995 data. Chinese domestic value add fell from 88 percent in 1995 to 67 percent in 2009. Koopman, Wang,

FIGURE 1 **Value Added Export Fraction**



NOTES
Data from the OECD and WTO. Data released in May 2013 (most recent data available).

and Wei (2012) report even lower values for China - approximately 50 percent in 2006. In the United States, the percentage fell from 92 percent in 1995 to 85 percent in 2008 before the global recession disrupted international trade patterns and the percentage rose to 89 in 2009. Based on the historical trend, data from 2015 would likely show an even lower percentage of domestic value-add in exports for non-resource intensive countries.

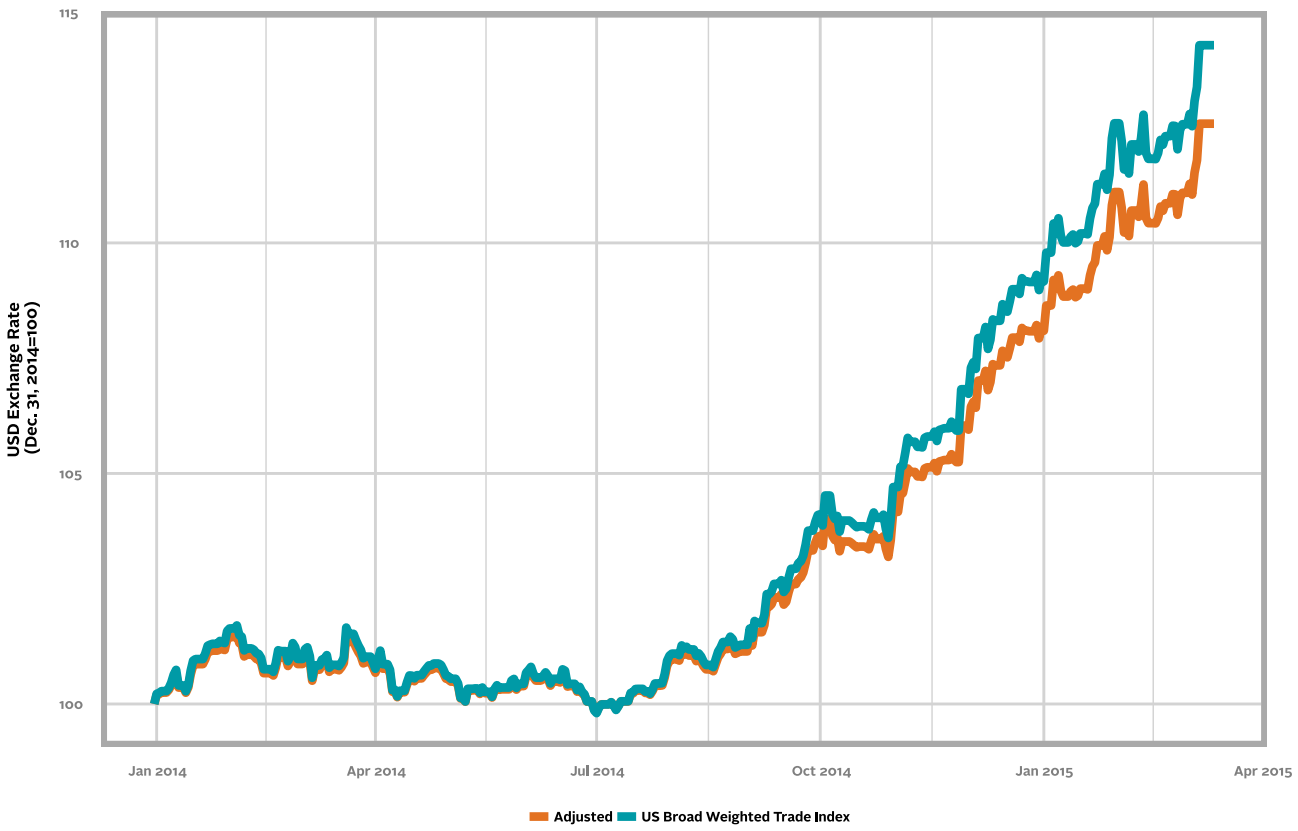
NOMINAL EXCHANGE RATES MATTER LESS THAN EVER (I.E., DOLLAR HAS NOT APPRECIATED AS MUCH AS MANY THINK)

The increase in the international trade of intermediate goods dampens the "pass-through" effect of changes in the exchange rate on the prices of final goods including exports (Gagnon et al., 2014). More plainly, exchange rates matter less for international trade now than historically.

Consider again the iPad example. The weakening of the euro vis-à-vis the dollar might encourage Apple to raise its prices in Europe to maintain its dollar profit margin. However, the dollar's strength also reduces the cost to Apple of importing goods (e.g., memory chips) from countries like Korea, so Apple might partially sustain its margins in Europe even if the dollar price of the iPad has fallen in the region.

The effects of accounting for different levels of value-add by country are meaningful. Figure 2 plots both a traditional trade weighted dollar exchange rate and a trade weighted exchange rate adjusted for varying levels of domestic value-add. Since January 2014, the traditional measure shows that the dollar has nominally appreciated by more than fourteen percent on a trade-weighted basis. After accounting for trade in intermediate goods, the adjusted exchange rate has appreciated by two percentage points less in that same

FIGURE 2 **Traditional Trade Weighted and Adjusted Trade Weighted USD Exchange Rate**



NOTES
"Traditional" trade weighted exchange rate based on Fed's Trade Weighted U.S. Dollar Index: Broad.
"Adjusted" exchange rate uses the spot exchange rate for the same set of countries in the Fed's index but adjusts for the level of U.S. domestic value-add. Data from Bloomberg and the OECD/WTO

1 The 2009 data was released in May 2013. The OECD and WTO data have not released more updated data on their "Trade in Value Added" website since then (http://www.oecd.org/sti/ind/measuringtradeinvalue-addedanoecd-wtojointinitiative.htm).

period. Two percentage points may seem like a small difference in absolute terms. However, in relative terms, it represents fifteen percent less appreciation. For countries with a lower fraction of domestic value-add in their exports than the U.S. (e.g., China), the effect of changes in their nominal exchange rates should prove even more muted.

IMPLICATIONS FOR INVESTORS

Two main implications arise from this analysis. The first and more direct implication is that the recent run-up in the dollar will less adversely affect U.S. exporters and GDP than would a similar run-up during a period (e.g., 1995) when a country's domestic value-add constituted a larger fraction of that country's own exports. In other words, the "strong" dollar is not as bad as it looks for the U.S. or as good as it appears to exporters in Europe and Asia.

The second implication is subtler and less direct but no less important. The strength of the dollar relative to other currencies arises in part from central banks in Europe and Asia trying to spur domestic growth by loosening monetary policy. Part of those central banks' calculus may include the hope that their weakening currencies will increase exports to regions enjoying relatively stronger growth (e.g., the U.S.), creating a self-reinforcing spiral of better domestic GDP growth. However, the declining amount of domestic value-add in their own regions' exports suggests that the central banks efforts may prove less effective than they once were. These central banks may then need to increase their support in other ways.

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