

Measuring the Real Impact of Imports on Jobs

BY MICHAEL MANDEL AND DIANA G. CAREW

MARCH 2012

INTRODUCTION

When it comes to manufacturing, most politicians, economists, and journalists agree: the millions of manufacturing jobs lost in recent years are mostly not coming back. Looking at the official data, it's easy to understand why. Productivity in the sector has continued to climb even as jobs dwindled, so it must be the case that these jobs were lost to good old human ingenuity.

But this conclusion is derived from faulty official data. Indeed, a closer look at the numbers reveals an entirely different history on what happened to U.S. manufacturing.

Specifically, this paper shows that rising imports play a much larger role in the loss of jobs since 2007 than official data suggests. In fact, we estimate that rising real imports are responsible for approximately 1.3 million of the jobs lost between 2007 and 2011, or almost one-third of total private non-construction job loss.

We reached the estimate of 1.3 million jobs through a process that adjusts for measurement problems in the official statistics. This adjustment is based on a concept called the “import price bias,” which causes the government to undercount the growth of low-cost

imports from countries such as China. After adjusting for the import price bias, our analysis suggests that the import growth of goods, adjusted for price changes, have been underestimated by roughly \$117 billion since 2007 (in 2011 dollars).

Moreover, we find undercounting real imports leads to a distortion in most of the official statistics that keep track of economic activity, including real GDP, which was overstated during the Great Recession and subsequent recovery by 0.8%. Our analysis suggests imports of low-cost goods continued to expand their presence in U.S. markets during this period, a phenomenon that likely started in the early 2000's when developing countries such as China significantly boosted their exporting presence.

In this paper we also discuss how these revised statistics might affect the economic and political landscape going into the 2012 election. Specifically, President Obama's recently announced “insourcing” initiative has the potential to recover some portion of the 1.3 million jobs lost to rising imports. By comparison, current policies like the payroll tax break are more likely to leak overseas than we realize instead of stimulating demand at home.

Understanding the true effect of rising imports on jobs better explains the everyday reality of

About the authors

Michael Mandel is the chief economic strategist at the Progressive Policy Institute and a senior fellow at Wharton's Mack Center for Technological Innovation.

Diana G. Carew is an economist at the Progressive Policy Institute.

Americans who are struggling through a weak job market and stagnant real wages. This is especially true in key states such as Ohio, North Carolina and Pennsylvania, where voters know that jobs have been lost to foreign competition.

In the end, sustainable economic growth and the creation of tomorrow's jobs cannot be achieved through the consumption, debt driven economy of the past few decades. Instead, we advocate more of the pro-investment, pro-manufacturing policies recently introduced by the Obama Administration. Such policies shift America toward a "Production Economy" which emphasizes investment in physical, human, and knowledge capital. Understanding the true role of imports in the U.S. economy, we can design better, more targeted economic policies.

Underestimating the role of imports in our economy might explain why policymakers have been throwing stimulus at us for almost four years with less-than-stellar success in creating jobs.

THE OFFICIAL STORY

As we move into the 2012 election season, the central economic fact for the coming presidential election is the improving but still weak labor market. President Obama is following a two-pronged strategy. First, the payroll tax cut is supposed to put more money into the hands of consumers. Second, Obama's manufacturing initiative is intended to offer companies extra encouragement to create jobs in the U.S. rather than overseas.

What's odd is that according to the official data, the manufacturing initiative is not needed. From 2007 to 2011 the net trade deficit in goods shrank by some 25%, adjusted for price changes. Over that period goods exports rose by 15%, while non-petroleum goods imports were

basically flat. That sounds pretty good from a competitive perspective. Indeed, large gains in U.S. productivity are being heralded worldwide as an example of how to conduct business.¹

Meanwhile the BEA calculates a very interesting set of statistics called "gross domestic product by major type of product." According to these numbers, the U.S. economy's net production of goods, including agriculture and mining, is up 9% since 2007 to an all-time record. At the same time, service production is only up 3%, and construction is down 31%. In other words, the official data apparently shows that the goods-producing sector is leading the recovery.

That's why Democrats and Republicans are trying to stimulate consumer demand, with both parties attempting to create jobs through some combination of unemployment benefit extensions and payroll tax cuts for middle class Americans.² The idea is that with more money in their pockets, Americans will spend more on goods and services, creating jobs in the U.S. And given how constrained our budgets are, every extra dollar people have to spend is that much more valuable.

Sounds good, right? Not exactly. If Americans spend their extra money on goods and services made outside the U.S., these measures will not result as intended. Each dollar that leaves the U.S. means there is less money to spur economic growth here. For example, government figures show that Americans purchase more clothing today in real terms, than they did in 2007. Nevertheless apparel manufacturing jobs are well below 2007 levels because clothing production continues to move overseas. Similarly, Americans consume more electronics today in real terms, than they did in 2007, as advancements in cell phones and other smart devices allow consumers to get more for less. However, the number of jobs in communications equipment manufacturing continues to contract, while imports have soared.

Underestimating the role of imports in our economy might explain why policymakers have been throwing stimulus at us for almost four years with less-than-stellar success in creating jobs. It might help explain why factories continue to shut-down or move out of the U.S.,³ and why real disposable income is up just 0.2% since the start of the recession.

We argue the official statistics underestimate the role of imports. This paper shows imports are understated

because of a flawed statistical methodology that results in the ‘import price bias’. And we believe the understatement of imports flows through the body of economic statistics like a clot—eventually reaching the heart of U.S. economic data.

IMPORT PRICE BIAS

In this section we explain what ‘import price bias’ is, and why it is important to policymakers and politicians. When the Bureau of Economic Analysis estimates real import growth and real GDP growth, the agency has to try and separate out the effect of price changes from the actual ‘real’ changes in imports, consumption, and production. For example, in 2010 total consumer spending on flowers and potted plants rose by 3%, while the price fell by 1%. As a result, the ‘real’ change in floral consumption was a 4% increase.

Import price bias can occur anytime we switch from high-cost foreign suppliers such as Japan or Germany to lower-cost foreign suppliers in China or Eastern Europe.

The BEA makes this sort of calculation for every component of GDP—imports, exports, consumption, nonresidential investment, residential investment, and government spending. Any observed change in dollar values is decomposed into a price change and a ‘real’ quantity change. The quantity changes are combined into real GDP.

So far, so good. However, it turns out that the official methodology for price adjustment does not correctly handle imports from low-cost countries such as China. This flaw in the methodology is known as the **import price bias**.⁴

A simple example will illustrate the nature of import price bias. Suppose that a company imports 100 big screen televisions from Japan at \$1000 each, for a total import bill of \$100,000. Now this company finds a much cheaper manufacturer in China who charges

\$500 for an identical television (but with a different model number, because it’s coming from a different supplier). If 120 televisions are imported, that will result in a total import bill of \$60,000.

In an ideal world, the government statisticians would report that the quantity of imported televisions rose, while the price dropped. In reality, however, the government tracks the price of Japanese-made televisions separately from the price of Chinese-made TVs. It hardly ever does a comparison of the price of televisions made in the two countries.⁵ The result: The dollar drop in imports is effectively treated as if it is a drop in quantity of televisions, rather than a drop in price.

Instead, the BLS implicitly ignores the Japan-to-China price drop when it puts together its price index for imported televisions, so that \$1 of imports from Japan is treated as if it has the same impact as \$1 of imports from China. But this is unreasonable; the shift in sourcing reflects big price differentials.

Import price bias can occur anytime we switch from high-cost foreign suppliers (such as Japan or Germany) to lower-cost foreign suppliers (in China or Eastern Europe). It’s also relevant when U.S. buyers switch from high-cost domestic suppliers to low-cost foreign suppliers. The price of an import from a low-cost country like China might be 20%, 35%, or even 50% below the price of the comparable item produced in the U.S. This means the switch to China would have a larger effect: \$1 of imports from China might now replace \$1.25, \$1.50, or even \$2 worth of domestic production, along with all the associated jobs.

In other words, import price bias is pervasive — and the implication is that the ‘real’ growth of imports is being underestimated, potentially by a very wide margin. In fact, the data may be reporting that real imports are falling when in fact they are rising.

Certainly we acknowledge the money we saved on purchasing cheaper imports puts some extra money in our wallets to spend. But we don’t know how much went to U.S. made goods and services and how much went to more imports. And unlike earlier in the decade, when the real estate boom and growing demand for healthcare led to economic growth and job creation, during the recession there were not enough sources of growth to counteract the jobs lost to higher consumption of imports.

The mismeasurement problem appears to have started around 2000, as imports from China kicked into high gear. Consequently, the 2000-2007 ‘boom’ under President George W. Bush was likely much weaker than the official numbers show.⁶

METHODOLOGY

In this section and in the next one we will outline how we adjust the official import statistics for import price bias. The section is important, but it can be safely skipped by the non-technical.

In an ideal world we would know the relative price of imports versus comparable domestic goods at a detailed level. That would enable us to immediately make the appropriate adjustment. Such data is not available now, but would come out of the Competitiveness Audit proposed by PPI.⁷

Understanding the true effect of rising imports on jobs better explains the everyday reality of Americans who are struggling through a weak job market and stagnant real wages.

The absence of such data leaves us with two big problems. First, we don’t know the current import price bias B , the differential between import and domestic prices (the ratio of the price of domestic products to the price of comparable imported products is equal to $1+B$).

Second, we don’t know whether the import price bias B has been narrowing or widening. A narrowing import price bias would mean that U.S.-made goods are becoming more competitive.

Anecdotally, prices from China are often said to be about one-third below that of U.S. manufacturers, which is equivalent to saying that U.S. manufactured goods are 50% more than the Chinese equivalent.⁸ That would put the import price bias B at 0.5, which

sounds like a lot. However, let’s think about what this would mean for consumer prices for items such as apparel and consumer electronics.

According to BEA statistics, only about 30% of the consumer price of apparel consists of the actual cost of the product (the rest is the cost of transportation and distribution). The implication: if imported clothing was replaced by domestic-made clothing at a 50% higher cost, then the consumer price of apparel would only go up by about 15% ($30\% \times 50\%$).

Similarly, about 40% of the store price of consumer electronics and computers consists of the actual cost of the product, according to BEA data. So if imported electronics was replaced by domestic-made electronics at a 50% higher cost, the consumer price of electronics would go up by about 20% ($40\% \times 50\%$).

In both of these cases, the assumption that domestic made products are 50% more expensive than the imported equivalent seems not only reasonable but conservative. After all, we’d expect the consumer price of apparel to go up more than 15% if people were forced to buy American.

If we assume the import price bias $B=0.5$, then adjusted imports are equal to $(1+B)$ times reported imports. So if we import \$400 billion from China, then adjusted imports are equal to \$600 billion. Or to put it another way, \$400 billion in imports from China are equivalent in quantity to \$600 billion in production from Japan or from the U.S.

So far we haven’t said anything about changes in the import price bias over time. However, such changes have to be an important part of the story. If the import price bias is widening, then the U.S. is becoming less competitive and a dollar of imports is having a bigger effect on the economy. Alternatively, if the import price bias is narrowing, then the U.S. is becoming more competitive.

Our basic strategy is to look for inconsistencies in the official data. In particular, we calculate “real domestic supply” for key commodities, defined as domestic shipments plus imports minus exports, all adjusted for price changes. If import price bias is important, then the growth of real domestic supply based on official price indices is going to be too “small” relative to the growth of domestic purchases. That enables us to produce an adjusted estimate for import growth that fits the observed pattern of purchases.

Here is the outline for our methodology.

1. We focused on commodities for which imports are an important source of supply, and for which intermediate usage is relatively unimportant. This includes apparel, furniture, televisions, nondefense communications equipment, and motor vehicles (we handle computers slightly differently).
2. For each commodity, we calculate the growth in real domestic purchases from 2007 to 2010, which will generally be consumer spending plus business investment, as appropriate. These calculations make the conservative assumption of omitting inventory accumulation, which generally is greater in 2010 than 2007. Including inventory accumulation would tend to increase the growth of real domestic purchases.
3. For each commodity, we calculate adjusted real domestic supply as real domestic shipments minus real exports plus real imports, adjusted for the import price bias (adjusted real imports are equal to $(1+B)$ *real imports). We then follow a procedure that allows for the import price bias to change over time. First we assume that the import price bias is 0.5 in 2007, and then solve for the import price bias in 2010 by setting the growth of adjusted real domestic supply equal to the growth of real domestic purchases, in 2007\$. That yields one estimate for adjusted import growth.
4. Then we assume that the import bias is 0.5 in 2010, and solve for the import price bias in 2007 by setting the growth of adjusted real domestic supply equal to the growth of real domestic purchases, in 2010\$. That yields a second estimate for adjusted import growth.
5. Then we take the geometric average of the two growth estimates, to give us the adjusted change in real imports from 2007 to 2010.

This procedure yields an estimate of the ‘extra’ increase in real imports after adjustment. Several caveats are in order. First, this procedure should be viewed as a rough estimate rather than a precise calculation. We are drawing inferences from inconsistencies in the official data, rather than having direct measurements of the import price bias. Second, we don’t have good information about the uses of these commodities as intermediate inputs to other

production. That’s fine for apparel, furniture, motor vehicles, and televisions, but the assumption is more problematic for communications equipment. Third, we would love to know the distribution of imports use across the economy, but that information is not available.

THE CASE OF APPAREL

To illustrate the adjustment process, let’s look at apparel. During the period 2007-2010, consumer spending on clothing dropped slightly. But because consumer prices for clothing also dropped, ‘real’ personal consumption spending on clothing increased by 1%, according to the BEA. In other words, Americans were able to keep up their purchases of clothing during the recession, which is why retailers such as Walmart and clothing suppliers VF Corporation generated more cash in 2010 than in 2007.⁹

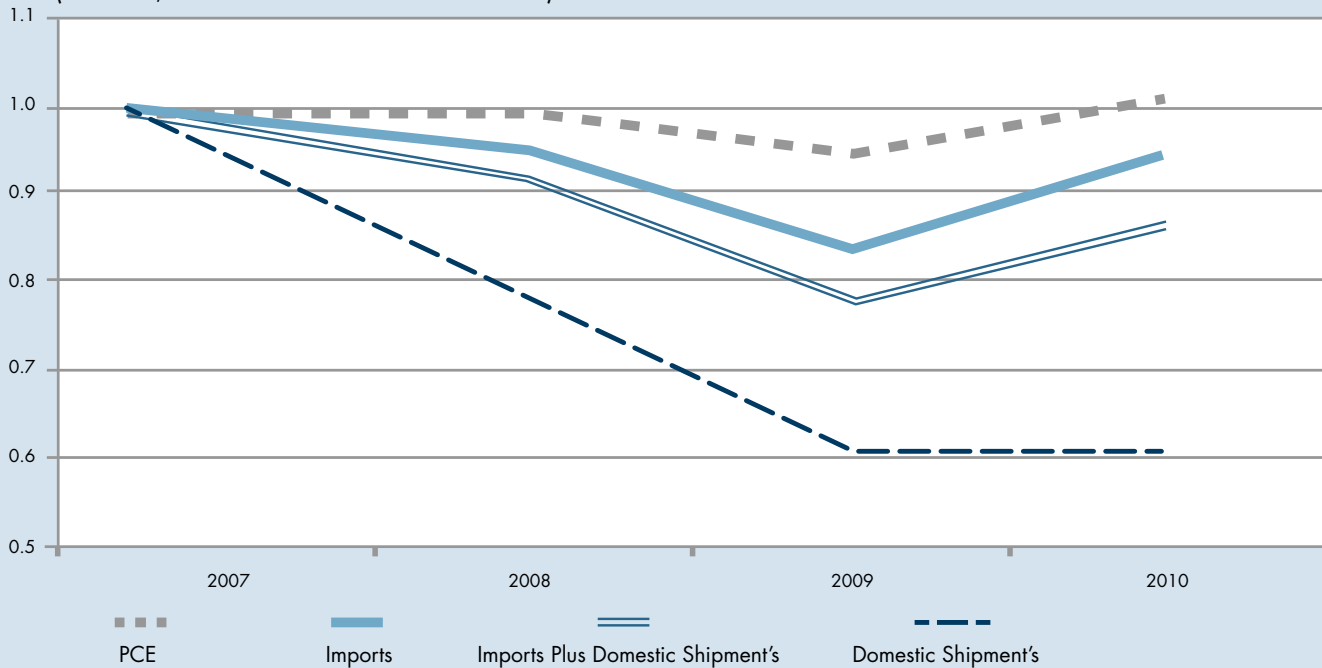
Where was this clothing coming from? Not the U.S., for sure. In 2007, before the recession started, the U.S. was shipping \$24 billion worth of clothing annually. Over the next three years, however, domestic manufacturers laid off 30% of domestic production workers, closed 1,600 clothing production facilities, and cut shipments by 38%, adjusted for price changes. All told, domestic shipments of clothing dropped by \$9 billion, measured in 2007 dollars.

Meanwhile three interesting things happened to the sourcing of imported apparel. First, China and Vietnam’s share of U.S. clothing imports rose from 39% to 49%, as apparel manufacturing shifted to the lowest cost countries. Second, the price of imported apparel, as reported by the BLS, supposedly rose. Finally, the total dollar value of apparel imports, adjusted for price changes, supposedly fell from 2007 to 2010 by 5%, or \$4 billion.

So if we go by the official numbers, the combined domestic production and imports of clothing fell by a cumulative \$13 billion from 2007 to 2010, or 13%, after adjusting for prices.¹⁰ Meanwhile consumer purchases of clothing rose, as Figure 1 shows. What is happening here?

At first glance, it is as if the official data suggests the increase in clothing purchased by consumers did not exist, that the clothes magically appeared. That is nonsense; certainly these clothes had to come from

FIGURE 1: OFFICIAL DATA: APPAREL DEMAND, IMPORTS, AND DOMESTIC PRODUCTION (2007=1, ADJUSTED FOR PRICE CHANGES)



Source: BEA, Census

somewhere. One clue, though, comes from looking at the trade data. Even though the price-adjusted dollar value of imported clothing supposedly fell by 5%, the actual units of imported clothing — measured in dozens, pairs, and similar physical units — rose by 8%.

In fact, it seems clear that the apparel trade data suffers from the import price bias. The shift to lower-cost countries should show up as falling import prices, but it doesn't. As a result, the growth in apparel imports, adjusted for price changes, is significantly understated.

For the purposes of this paper, we adjust the growth of apparel imports so that the supply of clothing — imports plus domestic production minus exports — grows at the same rate as the demand for clothing. In this case, if we assume the apparent supply of clothing actually changed at the rate of demand (1%) over 2007-2010, we calculate a gap in apparent versus adjusted supply of \$14 billion (in 2007 and 2010 dollars) — a gap we attribute to underestimated imports. In other words, we found the missing clothes.

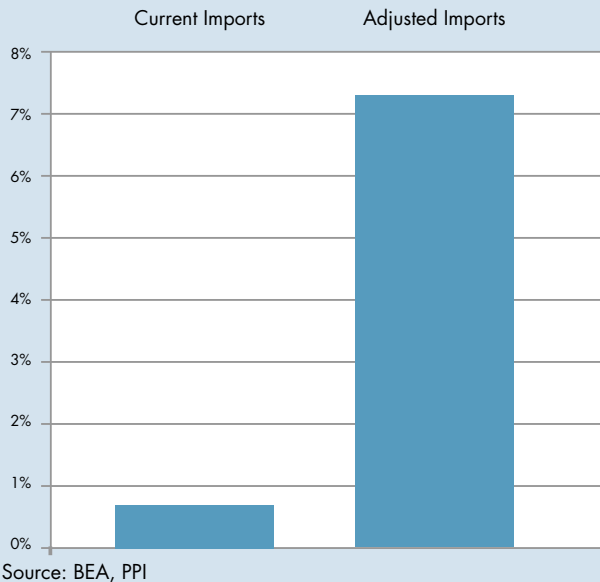
IMPORTS, ADJUSTED

After making our preliminary partial adjustment for the import price bias across the six industries, we find real goods imports were understated by about \$117 billion since the recession began, in 2011 dollars. This suggests a new reality about the role of imports in our economy during the recession and recovery, one where imports played a much larger role in consumer and business spending patterns than official data suggests.

Real goods imports were understated by about \$117 billion since the recession began, in 2011 dollars.

The additional \$117 billion in real goods imports means that real imports of non-petroleum goods did not increase by \$14 billion, or 0.8%, since

FIGURE 2: PERCENT CHANGE IN NON-PETROLEUM GOODS IMPORTS, 2007-2011 (IN 2011\$)



2007, as current data implies. Rather, our analysis suggests real imports of non-petroleum goods rose by \$131 billion since 2007, or by more than 7%.

To note, the underestimation of real imports has significant implications on how U.S. output (GDP) was affected by the recent downturn. Because of how U.S. economic output (GDP) is calculated the \$117 billion adjustment to real imports means real GDP has been overstated by an equivalent amount, in 2011 dollars. In fact, our analysis implies that real GDP over 2007-2011 was flat, instead of growing by 0.8%.

BRINGING THE JOBS BACK

As of the end of 2011, two and a half years into the official economic recovery, the economy was still more than 6 million private sector jobs short of where it was in 2007. Economists and policymakers are quick to explain why, and point to the official numbers. After all, the numbers say real GDP rebounded and is continuing to grow. And if fewer people are working while the economy is growing, conventional wisdom tells us it is because we are more productive. So, we are told any jobs not coming back were “lost” because of Americans’ infallible efficiency, and that this should be seen as a symbol of our economic success rather than failure. Indeed,

both President Obama and Republican presidential candidate Mitt Romney have lauded American workers as the “most productive” in the world.¹¹

The \$117 billion understatement of real imports uncovered in this paper leads us to wonder whether this conventional explanation is wrong.

We believe it is, in part. The findings of this paper suggest at least 1.3 million of the jobs lost since the end of 2007 were actually lost from trade — that is, from rising imports. This difference in real goods imports, and corresponding difference in real economic output, means our laudable productivity growth was also overstated.

The diagnosis that productivity gains are behind the lagging job recovery is incomplete.

In other words, the diagnosis that productivity gains are the behind the lagging job recovery is incomplete. If productivity were the only underlying cause, we would have seen more gains in employment in the industries with supposed competitive gains — like manufacturing. We did not. Understanding that increased real imports are responsible for about one-third of the total private non-construction job loss helps explain this mismatch. Refusing to accept this reality risks falling into complacency about our competitiveness, and we risk losing these jobs permanently.

Instead, this finding supports the need for a more aggressive import recapture policies, such as President Obama’s recently announced “insourcing” initiative aimed at revitalizing high-tech manufacturing and investing in America to promote export growth and regain lost U.S. competitiveness.¹²

We believe such policies could be successful because it would resolve the reason why the jobs were initially lost: uneven foreign trade. Specifically, these jobs were lost in two ways, both stemming from the lower cost of imports. First, direct job loss occurred as U.S. factories closed down or shifted production. This was likely a major factor behind the 2.1 million

manufacturing jobs lost since 2007, a sector where official data touts massive gains in productivity.

Second, jobs were lost because of lost opportunities for that money to be spent on domestically produced goods and services. Instead these jobs never materialized, or were cut from the workforce, because the demand was not there. The shift from domestically produced goods and services to imports served only to exacerbate the downturn already occurring in the U.S. economy, showing up in large job losses across the board.

Arriving at our estimate of 1.3 million jobs affected by trade since the end of 2007 comes with its share of caveats. There have been several attempts to isolate the exact effect of employment on trade, all of which have shortcomings.¹³ Since imports are not tracked through the economy, any estimate must make assumptions on how imports are distributed across the various components of output — consumption, investment, and government spending — and that assumption is typically one of proportionality through the supply chain.

However, for our analysis we use the estimate calculated by government statisticians, which estimates 10 “downstream” jobs are associated with every \$1 billion in output (it costs \$100,000 for each job).¹⁴ These jobs are the direct and indirect jobs (“downstream” jobs) associated with producing a good or providing a service.

There are also jobs that are associated with the induced spending from the wages and salaries of those workers associated with the production of goods and provision of services (“upstream jobs”). The Bureau of Labor Statistics estimates the effect on upstream jobs, derived in the same manner as downstream jobs, as 3 jobs for every \$1 million in induced output.¹⁵ However, because unemployed workers are still spending, we use a more conservative multiplier of 1.5 jobs for every \$1 million in induced output. Adding the downstream and upstream jobs together, we arrive at our estimate of approximately 1.3 million jobs lost to trade since the end of 2007.

This is not to say productivity improvements weren’t a factor in the jobs lost during the recession. Indeed, many of the remaining jobs lost outside of trade that haven’t come back were likely due to companies reorganizing operations or finding new ways to do

more with less. And this problem requires its own set of policies, many of which are currently supported by policymakers, designed to retrain workers left behind and keep them on their feet while encouraging the development of new technologies that will create the next wave of high-wage jobs.

IMPLICATIONS FOR POLICY AND POLITICS

Washington politicians, policymakers, and economists draw most of their impressions of the U.S. economy from the official data put out by statistical agencies such as the BEA, Census, and the BLS. That applies to investors and journalists as well — no matter how many companies and individuals they talk to, it’s only a small slice of the sprawling U.S. economic landscape. In the end, the official statistics are an important component of the shared reality of both Democrats and Republicans.

The Obama administration’s recently announced initiatives aimed at “insourcing” U.S. production, and increasing investment in America, is the right way to move forward.

But what happens when the official data is flawed? In this paper we argue that inherent flaws in the official economic statistics are resulting in a fundamental misunderstanding of the economy. In fact, we find real U.S. imports have been understated by at least \$117 billion since 2007, in 2011 dollars, after adjusting for the import price bias. This translates to an overestimation of real GDP by a roughly equivalent amount, and we find real GDP was flat over 2007-2011 instead of growing by 0.8%. What’s more, this overstatement in real GDP means the productivity growth highly lauded by politicians and economists is also overstated.

The underestimation of real imports has significant implications for understanding why the economy is still over 6 million jobs short from when the recession began. Our analysis suggests that 1.3 million jobs, one-third of all private non-construction jobs lost

since 2007, were lost because of rising imports. Indeed our findings show the job losses attributed to gains in productivity are overstated.¹⁶

Our analysis explains why such demand-oriented stimulus measures like the payroll tax cut and unemployment benefit extension have not been enough to recover lost jobs.

To this end, the Obama Administration's recently announced initiatives aimed at "insourcing" U.S. production, and increasing investment in America, is the right way to move forward.¹⁷ Revitalizing our manufacturing sector and investing in innovation is critical to boosting job growth and generating economic growth sustainably. But we must use our money smartly in a time where every dollar counts. That is why we propose Congress fund a "Competitiveness Audit" in order to understand where to invest effectively, to understand where the U.S. is currently competitive or near competitive.¹⁸ A Competitiveness Audit would compare prices of U.S. made to foreign made goods of a similar quality, providing value information on where investments are likely to have the most success.

Moreover, our findings support policies that encourage investment in the next wave of innovation, and policies that facilitate bringing these innovations to scale and to market quickly and effectively. To this end, we propose a Regulatory Improvement Commission, authorized by Congress, to review and repeal outdated and duplicative Government regulations that cause unnecessary burdens and red tape for companies wishing to develop new products.¹⁹

The new reality uncovered in this paper calls for a set of economic policies that shift our way of thinking about how to generate economic growth and create U.S. jobs — a shift that will move America back to a "Production Economy" where Americans are workers and not consumers. This shift in thinking will emphasize investment instead of spending, and emphasize investing in Americans' potential to innovate and compete internationally. Only when we embrace this reality and the idea of a "Production Economy" can we successfully participate in the global marketplace and generate growth and jobs sustainably.

APPENDIX: INDUSTRY CASE STUDIES

FIGURE 3:

Industry	Data Inconsistency
Apparel	Apparent supply of clothing (imports plus domestic production) fell, while domestic demand rose
Televisions	Apparent supply of televisions (imports) fell significantly more than domestic demand
Furniture	Apparent supply of furniture (imports plus domestic production) fell significantly more than domestic demand
Motor Vehicles	Apparent supply of automobiles and light trucks (imports plus domestic production) fell significantly more than domestic demand
Communications Equipment Nondefense	Apparent supply of communications equipment (imports plus domestic production) fell significantly more than domestic demand, which already has a downward distortion from cell phone subsidies
Computers	Prices of computer imports fell much slower than domestic consumer prices for computers

In this paper we make a preliminary partial adjustment for the effects of import price bias since the recession started in 2007. For this paper, we look at six commodities — apparel, televisions, furniture, motor vehicles, communications equipment, and computers — and identify inconsistencies in the data that are likely caused by import price bias. These industries were chosen because we can identify clear inconsistencies in the official statistics.

In particular, we are looking for situations where the change in real domestic purchases at the final goods level differs significantly from the change in real supply at the producer level. For example, when we look at apparel, the official numbers tell a story where the real apparent supply of clothing (domestic production and imports) fell by a cumulative \$13 billion from 2007 to 2010, or 13%, while real demand (consumer purchases) of clothing rose by \$3 billion, or 1%. Our adjustment seeks to resolve this apparent mismatch in the official numbers.

APPAREL: THE WELL-CLOTHED AMERICAN

The recession had a notable dampening effect on consumer demand for clothing. Compared to the 15% increasing in real spending on clothing from 2004-2007, the growth in demand for clothing was much more muted over 2007-2010. Still, real spending increased by about one percent as Americans still managed to buy more clothes, despite the historic downturn. Even as total real personal consumer expenditures declined over the same period, the fact that we bought more clothes makes sense: clothes are not as durable as furniture, or automobiles, and the price of clothing was dropping, making them relatively cheaper.

That 1% increase in clothing purchases is equivalent to an additional \$3 billion in new clothes, measured in 2007 dollars. Think of it as 10 million \$300 dresses, or 30 million \$100 shirts. Certainly these dresses and shirts had to come from somewhere. Did we manufacture these clothes domestically, did we pull them out of inventory, or did we import them?

Looking at the numbers, it is unlikely the clothes were made here. U.S. apparel production continued its spiral downward during the recession, dropping by almost 40% from 2007-2010. U.S. apparel manufacturing jobs also continued to drop, by 57,000 jobs, or 27%, over the same period. And while apparel manufacturers, wholesalers

and retailers were drawing down their inventories of clothing in 2009, by 2010 they had reversed course and were actually adding to their stocks of clothing at a faster rate than in 2007.

That leaves rising imports as the only plausible candidate for providing the added new dresses, shirts, and other articles of clothing that Americans have been buying during the recession, while also picking up the slack for the continued drop in domestic production. On one level that's not a surprise— the shift of apparel production, a relatively labor intensive process, to lower-wage countries over the last few decades is well-documented. You go into almost any clothing store, and you are confronted by a sea of “Made in China” labels.

The real surprise, though, is that the official statistics show apparel imports **falling** by 5% from 2007 to 2010, after adjusting for price changes. That's equivalent to a \$4 billion **decline** in imported clothing, measured in 2007 dollars. Putting the drop in domestic production and the decline in imports together, and adjusting for a small change in exports, the official statistics suggest that the supply of apparel to the U.S. economy fell by 13% from 2007 to 2010, or some \$13 billion. So is this a magic trick where retailers have learned how to create clothes out of thin air?

Probably not. The most likely explanation is that real imports of clothing are being underestimated, for a combination of the two reasons noted earlier in the paper. Over this period clothing imports were rapidly shifting to China's low-cost production, and this change in sourcing and related drop in price was not being captured by the BLS price statistics. Second, the BLS import price statistics were not fully capturing the decline in price of Chinese-made clothing. In fact, the price index for apparel imports actually **increased** by 0.5% between 2007 and 2010, while consumer clothing prices fell by 2%.

We're going suggest that if clothing purchases increased at the consumer level, there had to have been a corresponding increase in supply. That means the real supply of clothing, instead of dropping by 13% from 2007 to 2010, actually increased by 1%. Since we know the gap is due to underestimated real imports, we solve the gap in supply using the process described above. In the end, we find the change in real imports was actually \$14 billion more than what official data suggests.

This would explain why we are seeing a higher quantity of clothing being imported. In fact, trade numbers show the quantity of clothing imported to the U.S. increased by 8% over 2007-2010. But in real terms the supposed price increase effectively mitigated these gains. The additional \$14 billion in clothing imports help explain why domestic apparel production is declining out of existence, and why related U.S. employment is down 27% even as we continue to buy more clothes at ever lower prices.

TELEVISIONS: THE TUNED-IN AMERICAN

While consumers held back on some types of spending during the recession, they did not stop purchasing televisions. According to the official data, over 2007 to 2010, real consumer spending on televisions rose a staggering 110%, adjusted for prices. This represents a shift to bigger, higher quality televisions, allowing Americans to buy more television for the same price.

Where are all these TVs coming from? Not here; virtually no televisions are produced in the U.S. and they haven't been for quite some time. Price advantages abroad drove production out of the country and are behind the fall in consumer prices. Similarly, domestic production of television components also continues to dwindle away in a trend that began even before the recession. U.S. employment of audio and visual equipment manufacturing dropped by 33%, or 10,000 workers, from 2007-2010 while employment in semiconductor manufacturing saw a drop of 17%, or about 80,000 workers.

The long, steady decline in domestic production of TVs, and TV components, means any rise in demand must have come from imports. But this is where it gets interesting: real imports of televisions over 2007-2010 increased by only \$3 billion, or 16% (in 2007 dollars). Certainly the additional TVs being purchased are not appearing on our

doorsteps. What's more, while consumer prices dropped 53%, official import prices only dropped by 13%. Since it is unlikely U.S. retailers accepted such enormous losses selling TVs, we argue the mismatch in supply versus demand does not make sense.

Instead, we suggest that the supply in televisions had to have increased at the same rate as demand. That means the real supply of televisions, or real imports in this case, must have increased 110% from 2007 to 2010, instead of increasing 16%. We solve the gap in real imports using the same process described above and find the change in real imports of televisions was actually about \$30 billion more than what official data suggests in 2007 dollars, or \$12.5 billion more in 2010 dollars.

FURNITURE: THE COMFORTABLE AMERICAN

The U.S. furniture manufacturing industry has been dramatically affected by trade. Cheaper manufacturing overseas led to substantial declines in U.S. furniture production which only continued during the recession. In fact, furniture manufacturing jobs in the U.S. dropped by almost 50% over 2007-2010, going from about 531,000 jobs to just 357,000 jobs.²⁰ Thanks to big box furniture stores, furniture is getting cheaper and cheaper. What's more, in an effort to reduce costs, much of the furniture we purchase is mass produced and self-assemble.

Furniture is not something people need to replace regularly, because it is a durable good. In tougher economic times like the 2007 recession, furniture purchases are more likely to be put on the spending wait-list after many of the non-durable goods and services we need to consume more regularly (like food, gasoline, and clothing). Accordingly, real demand for furniture, comprised of consumer spending and a small amount of private investment (think new office space), over 2007-2010 decreased by about \$19 billion, or 10% (in 2007 dollars).

Not surprisingly, we find the real apparent supply of furniture also dropped during the recession. Indeed, a large drop in real domestic production, by about \$27 billion, or 33%, is consistent with the significant employment losses we've seen in the industry. What's more, real imports also decreased over this period, by about \$4 billion, or 16%. All together, we find real apparent supply of furniture decreased by about 28%, over 2007-2010 (all in 2007 dollars).

Where did the slack in furniture demand come from? It is unlikely the excess demand came from domestically produced furniture, given how much U.S. production is shrinking. Inventories are another option, but inventory data shows real furniture inventories were growing in 2010 while shrinking in 2007.

Furniture prices over 2007-2010 may give some clues to the missing supply mystery. Consumer prices **decreased** by about 8%, while import prices **increased** by about 5%. This mismatch does not seem realistic, unless retailers decided they would start paying consumers to take the furniture away.

Instead, we suggest that real supply only decreased by as much as real demand (10%), and that this gap in supply is entirely attributed to mismeasured real imports. Using the same methodology described above, we find the real import gap in furniture — the change in real imports above official data — was over \$19 billion in 2007 dollars, or about \$23 billion in 2010 dollars.

COMMUNICATIONS EQUIPMENT: THE WELL-SPOKEN AMERICAN

Nondefense communications equipment in recent years underwent an innovation explosion: the advancements in cell phones, routers, and other wireless communications devices allow us to interact and share information with each other on an unprecedented scale. Wireless service providers are continuously developing new ways to meet the incredible consumer demand, streaming enormous quantities of data across the globe every day.

Given the importance of cell phones in our lives, it's not surprising that over 91% of Americans, 285 million people, subscribe to cell phone services, and that the number of subscribers is growing.²¹ Indeed, consumer spending on communications equipment, primarily on phones, increased by 15% over 2007-2010, after adjusting for prices. And given the constant innovation in the industry, it's also no surprise that consumer prices dropped 12%.

However, we believe that there is more to this story. When we buy cell phones, we typically don't pay for them. Instead, the costs are subsidized — that is to say we pay nothing, or just a fraction of the true cost of the phone, when we sign a contract with our wireless carrier. Stores write the cost of the phone off as an expense because they make up the difference in providing wireless service. This causes a distortion in measuring demand. Based on anecdotal evidence, we assume that real consumption is twice as high as currently reported.

For this industry we find inconsistencies in the official pricing data outside of consumer spending.²² In particular, there is a lack of information available about true price declines. Therefore, for this analysis, all communications equipment prices — for imports, exports, and domestic production — are deflated at the same rate. In this framework we find nondefense total demand was relatively flat over 2007-2010, down just 0.2%, driven by a sizeable drop in real investment.

Meanwhile, real supply declined by 16% over 2007-10. Nondefense domestic production led the drop in supply, down 28% over the four year period. The 2007 recession saw continued job losses in the industry, shedding 10,000 more jobs over 2007-2010, or about 8% of the remaining employees.

How could it be that there was not enough supply to account for demand? As before, we suggest that the supply in communications equipment had to have increased at the same rate as demand. Because of the dwindling U.S. production we further stipulate the increase in supply must be attributed to real imports. Official data indicates real imports did pick up some of the slack, increasing by 22% after adjusting for prices. But that is not enough to counter the drop in domestic production and flat demand.

Solving as before, we find the real import gap in communications equipment — the change in real imports above official data — was just over \$11 billion in 2007 dollars, or \$10 billion in 2010 dollars.

AUTOMOBILES AND LIGHT TRUCKS: THE WELL-TRAVELED AMERICAN

During economic downturns, consumers hold back on expensive purchases like automobiles — after all, Americans already own over 250 million vehicles.²³ It comes as little surprise, then, that real personal spending on new automobiles and light trucks went down by 25% over 2007-2010, with spending on new automobiles down \$27 billion and spending on new trucks down \$28 billion, after adjusting for prices. A further drop in private investment over 2007-2010 led total real demand for autos and light trucks to drop by about 25% over 2007-2010.

Domestic production of automobiles and light trucks after subtracting exports declined a hefty 51% over this same period, or about \$98 billion, after adjusting for prices. This matches the continued decline in U.S. employment in the auto manufacturing industry over 2007-2010, which shedding almost 60,000 jobs, down by about a third. Coupled with a supposed decline in imports of automobiles and light trucks of about \$23 billion, total supply of autos and light trucks decreased by 36% over 2007-2010, after adjusting for prices.

Even with the drop in real demand, official data suggests more new cars and trucks were purchased at a faster rate than the available supply was able to fill it.

Although we recognize some evidence exists that suggests the import price bias is less of an issue here — that foreign cars are not necessarily cheaper than domestic cars — we continue to use the same methodology described above. Because the data is limited and inconsistent, we chose to keep our approach for measuring the real import gap this industry consistent with the other industries included in this study.

Solving for the real import gap as before, setting the change in demand equal to supply and attributing the difference to imports, we find the change in real imports of automobiles and light trucks was actually about \$16 billion more than what official data suggests in 2007 dollars, or over \$27 billion in 2010 dollars.

COMPUTERS: THE WELL-INFORMED AMERICAN

Computers are rapidly becoming more advanced as consumers have grown to expect more functionality. Real demand for computers was strong over 2007-2010, with real consumer spending on computers increasing 56%, or \$24 billion, in 2007 dollars. Similar to televisions, this represents a shift to cheaper, higher-powered computers. Indeed, consumer prices dropped by about 30% over this period.

The highly dynamic evolution of computers can be seen in where they are made. Computers are the poster child of globalization: R&D, component manufacturing, and final assembly are rarely completed in the same place — let alone the same country. The share of production completed in the U.S. is shrinking, evidenced by employment in the industry dropping 13% over 2007-10, a downward trend that has been continuing for decades.

Because of the globalized nature of computer production — where few computers are actually manufactured in the U.S. — we argue that any increase in real demand, from increased spending and private investment, must have been supplied through real imports. But here's where it gets interesting: according to the official data, import prices decreased by just 13% over 2007-2010, less than half as fast as consumer prices.

Given the large changes in computer prices, and inconsistencies in how the BEA measures computer prices, we approached identifying the import gap for computers slightly differently.²⁴ Here, to find the missing imported computers we look at what real imports would be if import prices changed at the same rate as consumer prices instead of the currently reported import prices. After making this adjustment, we find the change in real imports of computers was actually about \$32 billion more than what official data suggests in 2007 dollars, or \$17.5 billion in 2010 dollars.

ENDNOTES

1. *The Economist*, "Hard Times, Lean Firms," December 31, 2011 Print Edition: www.economist.com/node/21542211
2. Alan Fram, "Congress Sends Payroll Tax Cut Bill to Obama," Associated Press, February 17, 2012: <http://news.yahoo.com/congress-sends-payroll-tax-cut-bill-obama-172026638.html>
3. "Whirlpool Moving Production to Mexico, Ohio, Iowa," 4029 News, October 2011: www.4029tv.com/news/29605728/detail.html?tree=fts&tml=fts_4pm&ts=T&tmi=fts_4pm_1_03000110272011
4. See, for example, Susan Houseman, Christopher Kurz, Paul Lengermann, and Benjamin Mandel, "Offshoring Bias in U.S. Manufacturing," *Journal of Economic Perspectives*, Spring 2011: <http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.25.2.111>
5. The BLS tracks import prices by model number at a particular importer. Generally speaking, when companies shift from a supplier in one country to a supplier in a different country, it's treated as a shift to a different product.
6. An analysis of the 1998-2007 period can be found by Michael Mandel, "Growth: Why the Stats Are Misleading", *BusinessWeek*, June 3, 2009: www.businessweek.com/magazine/content/09_24/b4135000594984.htm
7. Michael Mandel and Diana G. Carew, "How A Competitiveness Audit Can Help Create Jobs," Progressive Policy Institute, November 2011: <http://progressivepolicy.org/policy-brief-how-a-competitiveness-audit-can-help-create-jobs>
8. Pete Engardio and Dexter Roberts, "The China Price," *BusinessWeek*, December 6, 2004, www.businessweek.com/magazine/content/04_49/b3911401.htm
9. According to company annual reports and SEC filings.
10. The calculations described in the appendix also account for exports and inventories.
11. Erik Brynjolfsson and Andrew McAfee, "Why Workers Are Losing the War Against Machines", *The Atlantic*, October 26, 2011, <http://www.theatlantic.com/business/archive/2011/10/why-workers-are-losing-the-war-against-machines/247278/> and Alain Sherter, "How the Hidden Digital 'Economy' Threatens Jobs," CBS News, October 7, 2011: www.cbsnews.com/8301-505123_162-43556547/how-the-hidden-digital-economy-threatens-jobs/
12. President Obama Issues Call to Action to Invest in America at White House "Insourcing American Jobs" Forum: www.whitehouse.gov/the-press-office/2012/01/11/president-obama-issues-call-action-invest-america-white-house-insourcing
13. For example, the Congressional Budget Office, the Council of Economic Advisors, and the U.S. Chamber of Commerce have all attempted to estimate employment effects from trade. In 2010, the Commerce Department, working with other U.S. Government agencies published research on estimating the share of U.S. employment related to exports and other components of GDP.
14. This method is based on survey data from the Census Bureau, input-output tables from the Bureau of Economic Analysis, and the 2010 nominal domestic employment requirements table from the Bureau of Labor Statistics (released February 2012). For an example of its use, and methodology, see John Tschetter, "Exports Support American Jobs," April 2010: <http://trade.gov/publications/pdfs/exports-support-american-jobs.pdf>
15. Carl Chentrens, "Induced Consumption: Its Impact on GDP and Employment," U.S. Bureau of Labor Statistics, Fall 2009: www.va.gov/HEALTHPOLICYPLANNING/ffc/PandP/FFC2009.pdf (page 53).
16. This point was made by the U.S. Department of Commerce in a report released January 5, 2012 titled "The Competitiveness and Innovative Capacity of the United States": www.commerce.gov/sites/default/files/documents/2012/january/competes_010511_0.pdf (Ch. 6, p. 7).
17. President Obama Issues Call to Action to Invest in America at White House "Insourcing American Jobs" Forum: www.whitehouse.gov/the-press-office/2012/01/11/president-obama-issues-call-action-invest-america-white-house-insourcing
18. Michael Mandel and Diana G. Carew, "How A Competitiveness Audit Can Help Create Jobs," Progressive Policy Institute, November 2011: <http://progressivepolicy.org/policy-brief-how-a-competitiveness-audit-can-help-create-jobs>
19. Michael Mandel, "Reviving Jobs and Innovation: A Progressive Approach to Improving Regulation," Progressive Policy Institute, February 2011: http://progressivepolicy.org/wp-content/uploads/2011/02/2011_Mandel_A-Progressive-Approach-to-Improving-Regulation.pdf
20. Bureau of Labor Statistics, Current Employment Survey.
21. According to Ars Technica: <http://arstechnica.com/telecom/news/2010/03/wireless-survey-91-of-americans-have-cell-phones.ars>
22. The official price indexes for domestic shipments (producer prices) and imports and exports (international prices) make little sense. With consumer prices falling 12%, producer prices and international prices were essentially unchanged, with producer prices and export prices slightly increasing. To that end, we used consumer prices across the board for demand and supply — on consumption, investment, imports, exports, and domestic production — as a way to analyze the effect of the recession on the industry from a more realistic starting point.
23. Bureau of Transportation Statistics, Table 1-11, Number of total register vehicles: www.bts.gov/publications/national_transportation_statistics/html/table_01_11.html
24. Although this approach is based on price changes instead of quantity changes, it is consistent with a previous approach in this area. See Susan Houseman, Christopher Kurz, Paul Lengermann, and Benjamin Mandel, "Offshoring Bias in U.S. Manufacturing," *Journal of Economic Perspectives*, Spring 2011: <http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.25.2.111>

About the Progressive Policy Institute



The Progressive Policy Institute (PPI) is an independent research institution that seeks to define and promote a new progressive politics in the 21st century. Through research, policy analysis and dialogue, PPI challenges the status quo and advocates for radical policy solutions.

© 2012
Progressive Policy Institute
All rights reserved.

Progressive Policy Institute
1101 145th Street NW
Suite 1250
Washington, DC 20005

Tel 202.525.3926
Fax 202.525.3941
Email info@ppionline.org
www.progressivepolicy.org