Are there Unmeasured Declines in Prices of Imported Final Consumption Goods?

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Introduction

One of the ways in which the US economy has been transformed since the 1970s is the growth of its engagement in international trade. Imports of non-petroleum goods have risen particularly rapidly. They amounted to about 10 percent of final domestic uses of goods in personal consumption expenditures and gross investment in 1975, about 20 percent in 1991-2, and about 30 percent in 2008 (figure 1).

Many factors have contributed to the spectacular growth of US imports, including lower transport costs, lower communications costs, advances in managing the logistics of fragmented supply chains, multi-lateral trade liberalization agreements, scale economies, growth in varieties, growth in capital stocks and productivity of emerging Asian economies, and the effects on exchange rates of policies aimed at accumulating large dollar-denominated reserves pursued by countries that had been adversely affected by the Asian currency crisis of 1997-8. These factors can be expected to act to lower prices of imports to domestic buyers. Substitution to lower-priced sources of supply therefore seems to be an important driver of the growth of non-petroleum goods imports.

Yet the US import price indexes generally give no indication that prices have been a significant factor in the displacement by imports of domestic sources of supply. Goods prices at the consumer level should be an average of prices from domestic and imported sources of supply adjusted for trade and transportation margins, so if import prices are falling relative to domestic prices we might expect to see the price index for imports of non-petroleum goods rising more slowly (or falling faster) than a price index for non-energy goods in personal consumption expenditures (PCE) in the National Income and Product Accounts (NIPAs). Although this pattern did occur between 1996 and 2001, in most years since 1990 the imports index has risen *faster* than an index of PCE non-energy goods prices (figure 2). On a cumulative basis over the time span from 1990 to 2008 prices for imports of nonpetroleum consumer goods rose about 4 percent more than the PCE prices.

Figure 2 suggests that the import indexes might be missing some price declines, but comparisons of aggregate indexes like those shown in figure 2 can be affected by differences in commodity composition or weights. If commodities with above-average rates of price growth are more heavily represented in the mix of items included in the non-petroleum goods import index, declines in relative prices of imports might have occurred at the level of detailed items yet have been masked in the more aggregated indexes by the mix effects.

Two Hypotheses concerning the Behavior of the Import Price Index

Newly Imported Products

Imports could gain market share through lower prices in two ways that would be difficult for the import price indexes to measure. First, when substitution from a domestic supplier to a foreign supplier involves a product that was not previously imported, that product constitutes a new good

for purposes of the import price index. This means that it will be linked into the import price index in a way that avoids an effect on the index's level. If the newly imported product starts out priced on a par with competing domestic products (perhaps subsequently picking up market share by falling in relative price), and it is brought into the import index promptly, the index will not suffer any bias. (Of course, bringing the new import into the index promptly may not be easy, particularly if it does not fit into the pre-existing product classification system used for the imports index.) Yet a more likely scenario for a newly imported product that succeeds in capturing a significant market share is that it already has a substantially lower quality-adjusted price than the domestic incumbents at the time of entry. If an imported product enters at a low price, a temporary state of disequilibrium may ensue as information about the price and quality of the newly available import diffuses and pre-existing contracts with incumbent suppliers expire.

When entry occurs at a substantially lower price level than that prevailing in the marketplace, prompt linking of the new import into the buyers' price index is not sufficient to capture all the gains to buyers. A theoretical measure all of the gains would introduce the newly imported product into the price index at the Hicksian virtual price—defined as the price that is just high enough to drive demand to zero—in the period *before* its actual entry. The consumer surplus from the drop from the Hicksian virtual price to the price at which purchases are first observed to occur can then be measured by integrating the area under a compensated demand curve.

A practical approximation to this theoretical concept would use a Törnqvist, Fisher or Fisher-like index formula and an estimated value of the virtual price at which quantity demanded would be zero. For example, if the entrant offers a quality level that is identical to that of the incumbent supplier, the Hicksian virtual price equals the price of the incumbent supplier. This principle was used by Griliches and Cockburn (1995) to argue that when a branded pharmaceutical goes off patent, the low-priced generic should not be linked into the CPI. Instead, the prices of the generic and its branded counterpart should be directly compared, with a quality adjustment for the generic that attributes half of the savings enjoyed by those consumers who substitute to the generic to a quality decline and counts the other half as a pure price reduction. Similarly, Reinsdorf (1993) argued that when consumers change their purchasing patterns to lower-priced discount outlets, linking the lower-priced outlets into the CPI would result in outlet substitution bias. As in the case of generic pharmaceuticals, the Hicksian virtual price for those consumers who substitute the discount outlet for the full-service outlet can be estimated by the price of the full-service outlet.

A buyer's price index that combined imported and domestic sources of supply could also properly account for the gains from the entry of a new product into the imports basket if the newly imported product matched the characteristics of a domestically supplied product. In the case of matching characteristics, the import could be brought into the buyer's price index as a directly comparable substitute, meaning that its price would be directly compared with the price of the domestically supplied item that it replaced. In addition, if the characteristics are not exactly identical, a direct quality adjustment could be made to the price of the imported item to allow it to be compared to its domestically supplied counterpart. In many cases, imported sources of supply will involve extra delivery lags, communications problems, and warehousing costs, so that even if the physical characteristics are identical to those of the domestic product

that it replaces, some downward quality adjustment is warranted. In a buyer's price index, it might therefore be reasonable to treat a physically identical import the same way that a generic drug is treated in the CPI index for pharmaceuticals of Griliches and Cockburn.

New Product Varieties

The second hard-to-measure way that imports could gain market share is through the entry of new *varieties* (or source countries) of products that are already present in the imports index's basket. A difficult challenge in the construction of import (and export) price indexes is that price changes tend to coincide with changes in product specifications. (This may be because foreign trade occurs under contracts that fix the price for the lifespan of the variety, and the signing of a new contract presents an opportunity to revise both the price and the item characteristics.) The effect on the price of a change in an item's characteristics is difficult to measure directly, so new varieties are usually linked in in a way that avoids any effect on the index's level. This practice tends to result in an index that is artificially flat if the market is one in which price changes tend to be delayed until the item's characteristics are updated.

In contrast to the "new goods" hypothesis, which always implies an upward bias, the new varieties hypothesis implies that an upward bias in the import prices indexes arises only for items whose true price trend (including correctly-measured quality change effects) is downwards. Many electronic and technology-intensive goods do, in fact, have falling price trends, so a bias towards zero in the measured rate of price change could plausibly have a positive effect on the rate of growth of the aggregate import index for non-petroleum goods.

Nakamura and Steinsson (2008) find that in the samples used to construct the imports indexes, prices frequently remain constant for the life of a quote (that is, for the length of time that the specific version of an item remains in the sample). Respondents tend to report a price change only at the time of a change in the version of the item that they import. When price and characteristics change simultaneously, separating the reported change in price into a quality change component and a pure price change component is difficult. Consequently, the new version of the product is typically linked into the index, which is equivalent to attributing *all* of the reported price change to quality change. The fraction of the observed price changes that are effectively treated as price changes of zero is high for some products in the import and export indexes. This is not the case of the CPI, because most products in the CPI do not behave in this way, and because the CPI uses hedonics or other methods to value characteristics changes for those products where price changes tend to coincide with characteristics changes.

Use of CPIs for Comparisons

Construction of Suppliers' Price Indexes and Purchaser's Price Index

Although no buyer's index that allows price comparisons of imported and domestic-sourced products exists at the wholesale level or for intermediate inputs, buyer's indexes for final consumer goods do exist. In particular, CPI's for individual goods or classes of goods are buyer's index that can include both imported and domestically produced items.

Although the CPI does bring in some foreign-sourced items by linking, it appears to be less vulnerable to linking bias than the import price index. In the CPI, a foreign-sourced item would be directly compared to a domestic-sourced if the consumer is thought to perceive their quality level as the same. Furthermore, the CPI makes more use of direct quality adjustment techniques, such as hedonic regressions and supplier's cost estimates, than do the import and export indexes.

On the assumption that some declines in prices paid by buyers from substitutions from domestic to imported versions of products and from substitutions between imported versions of products are reflected in the CPI but not in the imports price indexes, CPIs should tend to show lower inflation rate than import price indexes covering similar detailed items. In figure 3, for example, the average rate of growth of tire prices is 4.1 percent in the import price indexes, but only 3.2 percent in the CPI. Moreover, if the growth rate of the CPI for tires is an average of true import price growth rate and the correctly measured growth rate of the PPI, the lower rate of growth of the CPI than of the PPI implies that true growth rate of the import prices must be below that of the CPI.

To take a more systematic approach to comparing import prices and CPIs for detailed items, we used BEA's Industry Accounts data to identify commodities included in PCE that are at least partly supplied by imports. The industry accounts also show the proportion of total domestic supply of each commodity that come from imports. Using this weighting information we constructed Fisher indexes that combine prices received by domestic producers (which BEA measures based on PPIs from BLS) and prices received by suppliers of imports (which BEA measures based on import price indexes from BLS). Even "producer prices" can include imports in BEA's Industry Accounts, at BLS "producer price indexes" do not include imports, so we term these indexes *suppliers' price indexes*.

Prices at the retail level include transportation margins, wholesale and retail distribution margins, and commodity taxes. Therefore, in addition to our indexes of supplier's prices, we constructed *purchaser's price indexes* that combine the suppliers prices with price indexes for transportation and distribution margins and that adjust for changes in commodity taxes. Our purchaser's price indexes represent predicted CPIs based on prices and weights from BEA's industry accounts. However, we are not entirely confident of the quality of some of the price indexes for distribution margins, so we will compare both our supplier's price index and our purchaser's price index with a CPI at the most detailed level of aggregation that is available.

If we take the CPI and the supplier price index as given, the equation that expresses the log-change in the CPI as a weighted average of log-changes in the supplier price index and the price index for transportation and distribution margins and taxes contains only one unknown value, that of the price index for distribution margins and taxes. We can therefore solve this equation for the implied price index for the margin industry services and taxes. Assuming that the CPI is correct and that the quality of the match between the CPI and the suppliers' price index is good, an implausible value for this implied index would imply that the suppliers' index is biased. If we also assume that PPI is correct, then the bias in the suppliers' price index would have to come from its imports component.

Under the assumption that the prices of inputs into transportation and distribution are not changing and that tax rates are not changing, the rate of decline in the implied price index for the margin industries will equal their rate of productivity growth. If the implied productivity growth rate in transportation and distribution is implausibly high, that is evidence of either upward bias in the suppliers price index, downward bias in the CPI, or mismatch between the micro-level composition of the detailed CPI that we used and the micro-level composition of our suppliers index.

Aggregation as a Solution to the Problem of Poor Match Quality

At the level of detailed comparisons, the quality of the matches between CPIs and suppliers' price indexes is often dubious. However, if poor match quality is a source of random noise in the comparisons that is as likely to be positive as negative, a consistent pattern of implausibly high implied estimates of productivity growth in transportation and distributions would still suggest a systematic downward bias in the import indexes. In addition, the industry accounts data show the importance of each commodity in final uses in personal consumption expenditures (PCE), allowing us to use appropriate weights to aggregate commodities. Problems of misclassification become much less important at aggregate levels such as all durable goods, all nondurable goods and all goods that have imported sources of supply. Therefore, comparisons made at aggregate levels are likely to be robust problems with matches between CPI items and our detailed suppliers' price indexes.

The main impediment to constructing good matches between CPIs and our suppliers' price index is that the most detailed CPIs available are generally broader in coverage than the commodity categories in the industry accounts. For example, fur coats is a commodity in our industry accounts data, but BLS does not publish a CPI for fur coats. We therefore had to match fur coats to a CPI for women's coats in general. To give another example, we matched boat building in the industry accounts to a CPI for recreational vehicles including bicycles. The unavailability of sufficiently detailed CPIs means that at the level of individual items, many of the comparisons of CPIs to our suppliers and purchasers indexes do not hold the commodity mix constant. This problem becomes less severe when detailed items in the industry accounts are aggregated.

Two other caveats are also worth noting. First, the indexes that we use have positive variances, which have not attempted to estimate. Second, the import price indexes exclude tariffs, but tariffs undoubtedly influence the retail prices for imported items that are measured by the CPI. Tariff rates have trended down in recent decades, so declines in tariffs have probably acted to reduce the growth rate of the CPIs compared to those of the import price indexes. Nevertheless, for most items with significant volumes of imports, average effective tariff rates started out at low levels, so most of the reductions during the period covered by our sample were modest.

Empirical Results

Suppliers' price index comparisons

Differences in average annual growth rates of suppliers' indexes from matched CPIs between 1997 and 2007 are shown in the first column of table 1. For most non-durables types of goods,

the indexes of suppliers' prices do not differ significantly from their CPI counterparts. Indeed, in the cases of food and alcoholic beverages, the difference in growth rates is zero after rounding.

For the other categories of goods, however, the suppliers' index rise more than their CPI counterparts. In the case of apparel and textiles, the growth rate of the suppliers' price index exceeds that of the CPI by 1.5 percent per year. At the retail level, seasonal apparel items tend to enter at a high price at the beginning of the selling season, then go on sale later in the selling season before they exit the marketplace. This pattern of falling prices during the life of a quote would cause downward bias in the CPI if at the beginning of a selling season quotes tend to enter the index via linking rather than via a comparison with the final price of the previous selling season. However this problem appeared to have been largely resolved in 1991 when hedonic methods were introduced into the CPI for apparel.

Another factor that likely contributes to the gap between the apparel indexes' growth rates is the use of different index formulas to construct elementary aggregates. A geometric mean index formula is used to construct most of the elementary aggregates in the CPI, including apparel, but a Laspyeres-like formula is used in the IPP and the PPI. Geometric mean indexes have a number of desirable axiomatic properties that Laspyeres-like indexes lack, and under certain assumptions they do a better job of accounting for substitution behavior. The data set used in Feenstra, Mandel, Reinsdorf and Slaughter (2009) shows that the effect of changing to a Törnqvist formula (which resembles a geometric mean formula) on the import price indexes would reduce the growth rate of the apparel indexes by about 0.3 percent per year. On the other hand, comparisons of the the CPI-U from 1991 to 1998—years when the CPI-U did not use geometric means—to the CPI-RS imply that does the effect of adopting the geometric mean formula on the CPI for apparel is about 1.3 percent per year. Such a large effect is troubling, as it suggests that quotes linked out of the index at sale prices may have a disproportionate effect on the geometric mean formula. Thus downward bias in the CPI for apparel could account for some of the gap between its growth rate and that of the suppliers' index. The gap between the suppliers' index and the matched CPI for apparel is not large enough to constitute evidence of the existence of an upward bias in the imports price index considering the possible presence of downward bias in the CPI and the noisiness in the index comparisons arising from differences in index composition.

On the other hand, for durable goods other than motor vehicles, the growth rate gaps are larger than for apparel. The most troubling growth rate discrepancies are for computers and related equipment, where the suppliers' price index grows 6.4 percent per year faster than the CPI, and other electronic equipment, where it grows 4.2 percent per year faster. However, even for durables in general, the growth rate gap is pretty high, at almost 2 percent per year.

Purchaser price index comparisons

Adding in distribution and transportation margins to obtain purchaser's price indexes makes the growth rate gaps smaller for nondurable and apparel, reducing the overall average gap from 1 percent per year to 0.6 percent per year, or from 1.1 to 0.7 percent per year if tobacco is excluded. (Note however, that to be in our sample, an item in the industry accounts needed to have positive imports, few or no missing values, and a CPI counterpart, so "all items" in our sample covers only about 20 percent of personal consumption expenditures on non-energy

goods.) Indeed, number of non-durable goods have negative growth rate differences between their purchaser's price index and the corresponding CPI.

On the other hand, the growth rate differentials for most apparel items still remain above 1 percent per year. What is more, the product categories with large gaps between their CPIs and their suppliers' index have even larger growth rate gaps using a purchaser's index. In particular, the growth rate gap for electrical equipment excluding computers rises to 4.7 percent per year, while the growth rate gap for computers and related equipment rises to 11.6 percent per year.

The electronic and computer items have falling CPIs, so the upward bias in their import indexes is consistent with Nakamura and Steinsson's theory that a pattern of price changes coinciding with linking causes excessive flatness in the import indexes.[1] Furthermore, in the case of tobacco products, the negative gaps of the suppliers', purchaser's and import price indexes compared with the CPI are also consistent with the hypothesis of artificial flatness in the imports index, as these products have high rates of price growth in the CPI.

Similarity of PPIs and Import Price Indexes for Certain Items

Simple comparisons of import price indexes with corresponding aggregates of domestic prices as measured by producer price indexes can also shed light on relative growth rates of the import indexes. In constructing the aggregates used for these comparisons, we weight the indexes for detailed commodities in proportion to the importance of these commodities in final goods uses as measured in the industry accounts.

These comparisons also suggest the presence of an upward bias in the import index for durable goods, but not in other categories of goods. In the case of non-durable goods, domestic prices at the producer level rise faster than prices at the consumer level, while import prices rise more slowly than consumer prices. Thus the closeness of the suppliers' indexes to the CPIs is a result of offsetting effects of slow growth in import prices and fast growth in producer prices. For apparel and textile items, import and domestic producer prices both differ from CPI growth rates by about +1.5 per cent per year. However, for durable goods, the growth rate of import indexes is 2.3 percentage points *above* that of the corresponding CPI and 0.7 (=2.3 – 1.6) percentage points above that of domestic producer prices. For computers and peripherals, domestic producer prices fall nearly as fast as the CPI, but the growth rate of import index is about 11.8 percent per year above that of the rapidly falling CPI.

Implied Productivity Growth in Transportation and Wholesale and Retail Distribution

Under neo-classical assumptions, the difference between the growth rate of the price index for the output of an industry and the price index for the inputs that it uses is an estimate of its

[1] From January 1998 to September 2003, CPI computer price indexes used hedonic regressions for quality adjustment, and since then these indexes have used direct methods to estimate attribute values. These techniques allow measurement of price changes that are time to coincide with changes in attributes.

productivity growth. Price indexes for labor and other inputs are unlikely to have growth rates below zero, so reversing the sign of the growth rate of the implied price index for transportation and distribution services gives a lower bound estimate of productivity growth in these services.

Solving for the price index for transportation and distribution services that would explain the difference between our suppliers price index and the matched CPI, we find a plausible positive rates of growth for non-durables other than apparel of 1.3 percent per year and a not inconceivable growth rate for apparel and textile products of -2.5 percent per year (table 2). On the other hand, for durable goods the implied price change for transportation and distribution is about -8 percent per year, which is too low to be believed. For computers and peripherals, the implied growth rate is almost -30 percent per year. Although strong productivity growth in distribution services is plausible, rates as high as 8 percent per year or more are not plausible. They therefore suggest that difference between the growth rates of the import and domestic producer price indexes and the growth rate of the CPI is too large to be correct.

Relation between Imports and Wholesale and Retail Distribution Margins

Price reductions that are realized by substituting foreign sources of supply for final consumption items for domestic ones are unlikely to be completely passed on to consumers. Instead, the some of these price reductions are likely to result in expansions of margins received by the wholesale and retail distribution sectors. One reason for this is that more distribution services are required to set up and manage international supply chains. In addition, distributors are likely to have higher inventory costs and greater risks of being stuck with unwanted inventory when suppliers are distant and turnaround times for restocking are long. In addition, while the process of switching to foreign sources of supply is underway, markets are likely to be in a temporary disequilibrium that allows early switchers to earn economic rents.

To test whether higher proportions of imports in the overall domestic supply of a commodity are associated with higher distribution margins, we regress trade margin levels and growth rates on import share levels and growth rates. The regression in table 3 implies that 10 percent increase in the share of domestic supply sourced from imports is associated with a 1.3 percentage point expansion in the distribution margin.

Commodities that are heavily imported—such as apparel—might also have characteristics that require lots of distribution services. If so, import share could be a proxy for the types of characteristics that make a commodity require more distribution services, resulting in upward bias in the regression coefficient in table 3. We therefore also test for a relation between the growth of imports as a share of total commodity supply and the growth of distribution margins. The growth rate regression also shows a positive and statistically significant relationship between imports and distribution margins (table 4). The regression coefficient implies that a commodity with a 10 percentage point increase in its import share would have 0.93 percentage points more growth in its margin rate than a commodity with no change in its import share. Thus, the theoretical prediction of a link between imports and margins received by the distribution industries finds some empirical support.

Conclusion

The increased international engagement of the US economy has enhanced the roles of the import and export price indexes in the measurement of real output growth. For imported final goods that enter personal consumption expenditures in the NIPAs, an upward bias in the import index would result in upward bias in the measure of GDP because these items are deflated by an import index in the M component of the formula GDP = C + I + G + X – M but then deflated by a consumer price index when they reach the C component.

In the case of nondurable goods, comparisons of import indexes and of suppliers' and purchaser's price indexes with CPIs at as detailed a level as is possible given the available data indicate no systematic differences in behavior of these indexes. But for apparel and textile items, the import prices seem to grow faster than CPIs by about 1.5 percent per year, and for durable goods they seem to grow faster by more than 2 percent year. A very large discrepancy of over 11 percent per year for computers contributes significantly to this discrepancy for durable goods. Furthermore, the implied rates of change in prices for transportation and distribution services for durable goods are implausibly negative. The index comparisons therefore suggest the presence of a significant upward bias in the import price indexes for some types of durable goods, especially computers, as well as the possible presence of a modest upward bias in the import indexes for apparel. Nevertheless, these comparisons are not definitive evidence of the existence of a problem because the CPIs used in the comparisons often differ in their detailed item composition from the indexes with which they are compared.

The results in this paper are consistent with Nakamura and Steinsson's finding of a bias towards zero in the rate of growth of the import price indexes caused by linking out of a large fraction of the price changes that occur. The substantial positive discrepancies between the growth of the import index and the growth of the CPIs occur for the apparel and durable goods items that have falling CPIs, and the largest negative discrepancy occurs for an item with a very high growth rate in the CPI, tobacco products. Further research on solutions to the linking problem identified by Nakamura and Steinsson could yield important benefits for our measures of import and export prices, and improve our measures of the growth of output and productivity, especially at the industry level.

Finally, we note that if any bias that is present in the import indexes is matched by a similar bias in the export indexes if exports and imports had the same nominal value, the net effect of the two biases on our estimates of real GDP growth would be zero. However, complete cancellation is unlikely to occur in practice because exports of goods are less than imports of non-petroleum goods (the difference is between 2 and 4 percent of GDP in most of the years in our sample) and because some sources of upward bias in the import indexes are either not present or less important on the export side. In particular, imported versions of many products are likely to have entered the US market at a significantly lower price level than the incumbent domestic version of the product. This results in a gain to consumers that should theoretically be accounted for by use of a high Hicksian virtual price in period before entry was observed to bring the imported version into the import index. Yet on the export side, when new opportunities to export a particular product arise, the Hicksian virtual price would be lower than the first observed

selling price, implying the presence of a *downward* bias in the export index. Alternatively, we could model new exports as having been caused by positive technology shocks to exporters and ask how much lower the first observed price is than the virtual price at which exports would first become profitable with technology held constant at the new level. This would yield a correction of the same sign as the one that is applicable to the import index. Yet growth of exports has been less than growth of imports, and the value of the export products that could reasonably be modeled in this way is undoubted less than the value of the new types of imports.

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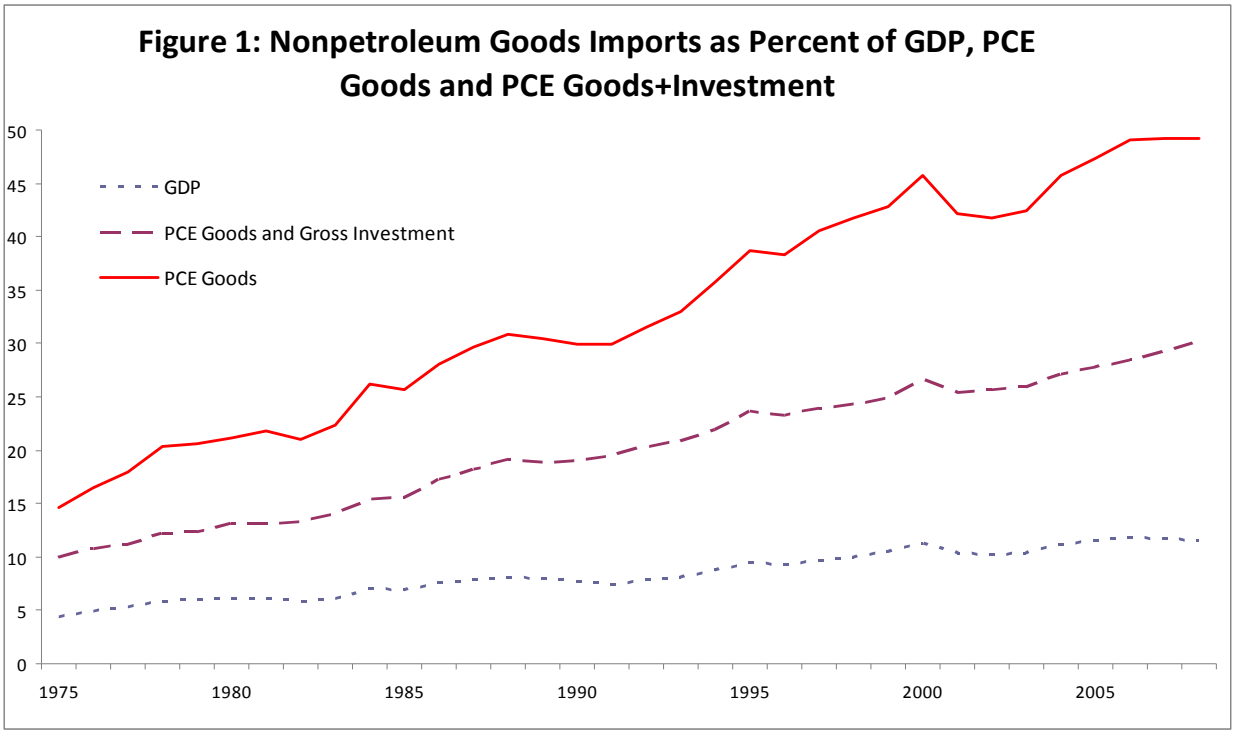
Figure 1: Nonpetroleum Goods Imports as Percent of GDP, PCE Goods and PCE Goods+Investment
50
45
40
35
30
25
20
15
10
5
0
GDP
PCE Goods and Gross Investment
PCE Goods
1975
1980
1985
1990
1995
2000
2005

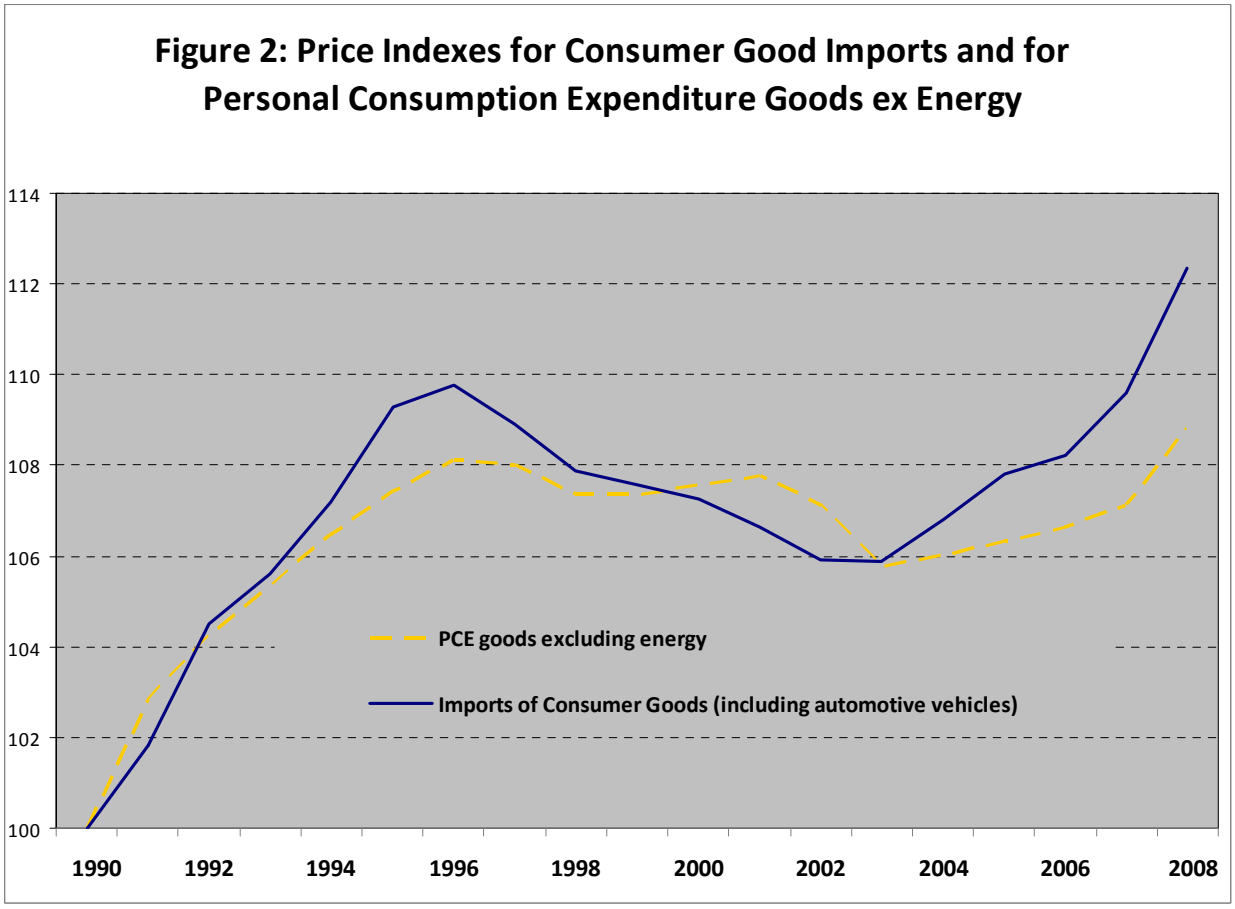
Figure 2: Price Indexes for Consumer Good Imports and for Personal Consumption Expenditure Goods ex Energy
114
112
110
108
106
104
102
100
PCE goods excluding energy
Imports of Consumer Goods (including automotive vehicles)
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008

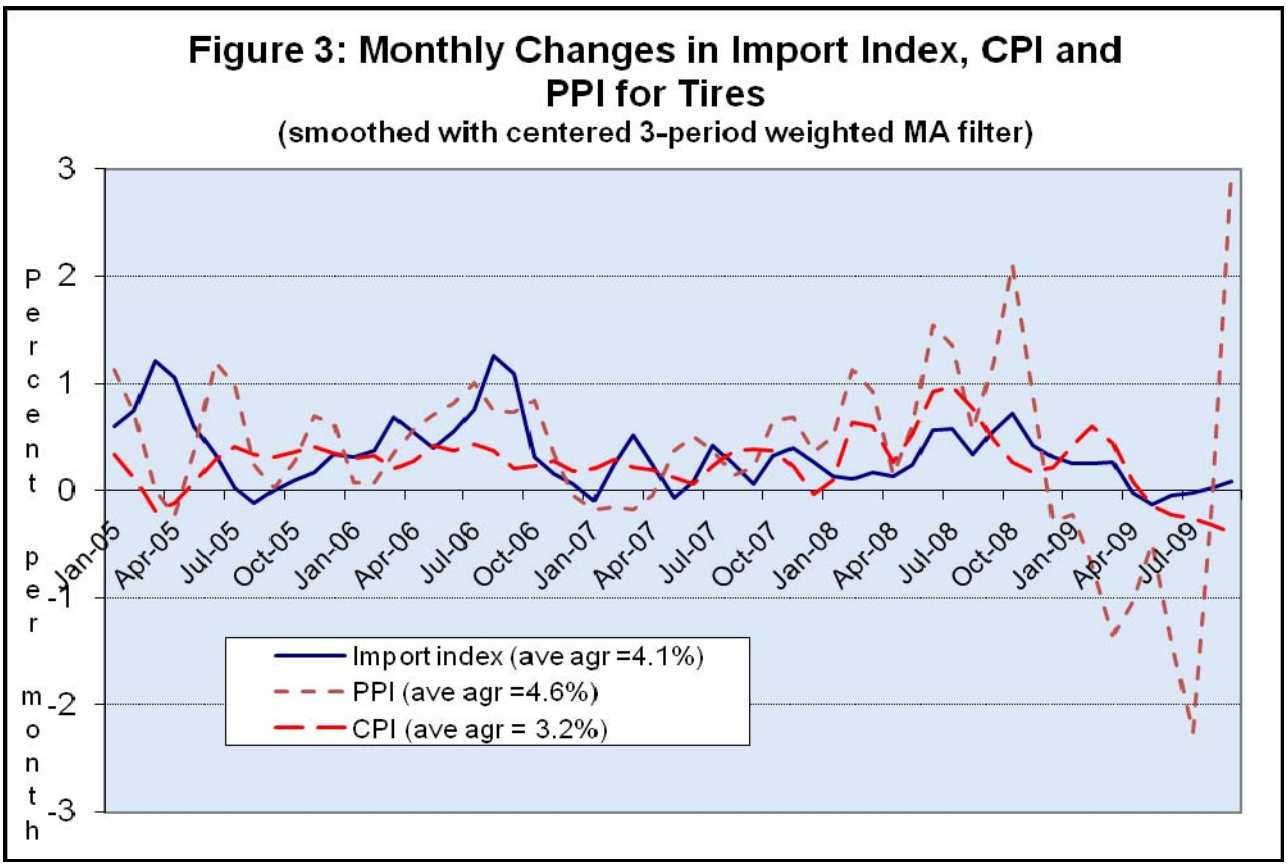
Figure 3: Monthly Changes in Import Index, CPI and PPI for Tires
(smoothed with centered 3-period weighted MA filter)
Percent per month
3
2
1
0
-1
-2
-3
Jan-05
Apr-05
Jul-05
Oct-05
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Apr-09
Jul-09
Import index (ave agr =4.1%)
PPI (ave agr =4.6%)
CPI (ave agr = 3.2%)

Table 1: Growth Rate Differences from Matched CPIs of Suppliers and Purchasers Price Industry 1997-2007

	Difference from Matched CPI				MEMO: Index of Matched CPIs
	Supplier's prices	Purchaser's prices	Import Prices	Domestic Prices	
Nondurables ex apparel	**0.3**	**-0.6**	**-0.6**	**0.6**	**2.2**
Food	0.0	-0.7	0.1	0.0	2.1
Alcohol	0.0	-0.6	-0.5	0.0	1.9
Misc. household supplies	0.6	-0.1	-0.2	1.3	1.5
Paper products, books and magazines	1.1	0.2	-0.4	1.1	1.4
Tobacco products	-0.6	-3.3	-6.6	-0.5	8.1
Durables	**1.9**	**2.0**	**2.3**	**1.6**	**-2.2**
Motor vehicles and parts	0.2	0.2	0.7	-0.1	-0.1
New cars and trucks	0.4	0.5	1.2	-0.2	-0.6
Electrical equipment ex. computers	4.2	4.8	3.5	4.3	-5.6
Computers, peripherals and software	6.4	11.7	11.8	3.8	-20.8
Furniture and wood products	2.3	1.4	1.5	2.5	-0.6
Clocks and watches	1.8	1.7	1.8	1.9	-1.4
Tools, hardware and supplies	1.8	0.9	1.7	1.7	-0.2
Other durables	3.0	1.9	3.1	2.4	-0.8
Apparel and textiles	**1.5**	**1.4**	**1.5**	**1.5**	**-1.2**
Women's and girls' apparel	1.9	1.7	1.9	1.8	-1.5
Men's and boy's apparel	1.3	1.4	1.4	0.7	-1.5
Other apparel	2.4	1.7	2.4	2.4	-1.2
Footwear	0.6	0.5	0.6	1.2	-0.4
Textile and sewing products	1.5	1.1	1.4	1.6	-0.8
All products	**1.0**	**0.6**	**0.7**	**1.1**	**0.2**
All products ex tobacco	**1.1**	**0.7**	**1.0**	**1.1**	**-0.1**

Table 2: Growth Rates of Price Index for Transportation and Distribution Services implied by Difference between Suppliers Price Index and Matched CPI, 1997-2007

	Implied price index for Transport & Distribution	Actual price index for Transport & Distribution
Nondurables ex. apparel	**1.3**	**0.5**
Food	2.2	0.2
Alcohol	1.9	0.9
Misc. household supplies	1.1	0.3
Paper products, books and magazines	0.3	0.4
Tobacco products	8.7	2.4
Durables	**-7.9**	**0.1**
Motor vehicles and parts	-1.3	0.3
New cars and trucks	-1.8	0.4
Electrical and electronic equipment ex. Computers	-11.0	0.2
Computers, peripherals and software	-29.7	0.1
Furniture and wood products	-2.7	0.0
Clocks and watches	-1.7	0.1
Tools, hardware and supplies	-1.8	0.0
Other durables	-3.3	0.1
Apparel and textiles	**-2.5**	**-0.0**
Women's and girls' apparel	-3.0	-0.0
Men's and boy's apparel	-2.6	-0.0
Other apparel	-3.0	0.0
Footwear	-0.9	0.0
Textile and sewing products	-2.2	0.0
All products	**-0.8**	**0.3**
All products ex tobacco	**-1.2**	**0.2**

Table 3: Regression of Average Level of Distribution Margin on Share of Domestic Supply from Imports

	Coefficient	t statistic
Intercept	0.3663	29.8
Share supplied by imports	0.1290	4.3
Growth of share of imports	0.0985	1.4

Table 4: Regression of Growth of Distribution Margin from 1997 to 2006 on Share of Domestic Supply from Imports

	Coefficient	t statistic
Intercept	0.0067	1.2
Share supplied by imports	0.0272	1.9
Growth of share of imports	0.0934	2.8