

What Will the Next Export Boom Look Like?

Some Hints from the Late 1980s

BY KEI-MU YI

Despite the recent decline in the value of the U.S. dollar, the U.S. trade deficit remains at historic highs. When this deficit eventually shrinks, it will likely be accompanied by an export boom. In this article, Kei-Mu Yi examines the nature of the last export boom in the United States, which occurred in the late 1980s. He documents whether the increase in exports was accompanied by an increase in the number of export markets, export industries, or exporting firms and plants.

Since February 2002, the value of the dollar, adjusted for differences in inflation rates, against a broad set of world currencies has fallen about 15 percent.¹ Standard economic reasoning suggests that the weaker value of the dollar will make foreign goods more expensive for U.S. consumers and

¹This is based on the Board of Governors' price-adjusted broad dollar index as of October 2006. The price adjustment is made so that the purchasing power – in terms of goods and services – of the currencies can be compared.



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firms and, simultaneously, make U.S. goods cheaper for foreign consumers and firms. According to this logic, these two forces should eventually lead to lower imports and higher exports, thus yielding a smaller trade deficit.² In the short run, however, the dollar depreciation may lead to a worse deficit because it takes time for consumers and firms to adjust to the new prices.

Indeed, in 2003 and 2004, the U.S. trade deficit widened sharply as imports grew considerably faster than exports. However, more recently, there have been signs that export growth is picking up steam. In 2005, real exports — that is, exports adjusted for inflation — were 7 percent higher than in 2004, while imports were only 6.4 percent higher. This is consistent with the economic logic discussed above, but it should be noted that the U.S. trade

²A trade deficit exists when a country imports more goods and services than it exports.

deficit continued to widen in 2005.³

Of course, many economic forces besides the value of the dollar affect the U.S. trade deficit. Most prominent among the causes is the fact that, in recent years, the U.S. economy has grown faster than the economies of most of its important trading partners, thus leading to a greater rate of increase in U.S. demand for imports than in foreign demand for U.S. exports, thereby widening the trade deficit. Nevertheless, the fact that growth of U.S. gross domestic product (GDP) continues to exceed growth of GDP in foreign countries suggests that the dollar's decline has been a force behind the recent strong performance of exports.

Two recent articles, one by Caroline Freund and Frank Warnock and the other by Freund, have documented the pattern of macroeconomic adjustment following the trough of a large trade deficit. Freund and Warnock identify 26 such adjustment episodes in OECD countries from 1980 to 2003.⁴ They focus on the broadest measure of international trade balances, the current account. The current account deficit is the sum of the trade deficit in

³The growth in the deficit occurred because imports currently exceed exports by 50 percent. Consequently, even though exports grew at a faster rate, the total increase in imports in dollar terms was greater than the total increase in exports.

⁴The Organization for Economic Cooperation and Development is an international organization of industrialized countries whose membership includes most European countries; the countries belonging to the North American Free Trade Agreement (NAFTA) – the United States, Canada and Mexico; and Japan, South Korea, Australia, and New Zealand.

goods and services, and the “income” deficit, which is the difference between income earned by U.S. residents from investments in foreign countries and income earned by foreign residents from investments in the United States.

A major finding of these articles is that when the current account deficit shrinks — as they all eventually do — it is accompanied simultaneously by an export boom.⁵ By contrast, imports are flat or may even continue to grow. This is an important finding because as a simple matter of accounting, it is entirely possible that a decrease in the current account deficit could be brought about via a fall in imports with little or no change in exports. These papers find little evidence for that type of adjustment. The papers do not investigate the fundamental causes of this adjustment, but regardless of the causes, their evidence suggests that the United States will likely experience an export boom when its current account deficit begins to shrink.

What will this boom look like? More specifically, will the United States expand the number of countries it exports to? Will it expand the number of goods it exports? If the latter happens, will the number of goods expand because existing plants begin exporting or because new plants start to export? Or will the U.S. simply export more of the same goods to the same countries? The manner in which export expansion occurs will have ramifications for how sustained the export boom will be because in order to export a good to a new market, firms often need to incur costs, known as “sunk” costs, to establish business relationships, distribution channels, and marketing.

⁵Two other key findings are that GDP growth tends to slow and the real exchange rate — that is, the exchange rate adjusted for differences in purchasing power — tends to depreciate.

If a large share of the growth in U.S. exports is from new exporters or new plants, we would expect that even if the forces that led to the export boom diminished or disappeared, many U.S. firms would choose to stay in the export market, rather than pulling out and re-incurring the sunk costs at some point in the future, should the market become desirable again.

A further decline in the dollar might be necessary for new markets — especially industries and plants beginning to export — to be developed.

This would help to ensure that future declines in exports will be less severe than in the absence of this “stay put” behavior.

We will examine the last great U.S. export boom — the export growth that occurred in the late 1980s and early 1990s — to see if it led to new export markets for goods. Specifically, we will look at the extent and nature of U.S. exports from 1986 to 1990, including changes in the total value of exports, as well as changes in export destinations and the types of goods exported. Finally, we will discuss findings from a very detailed study of U.S. exports during roughly the same period.

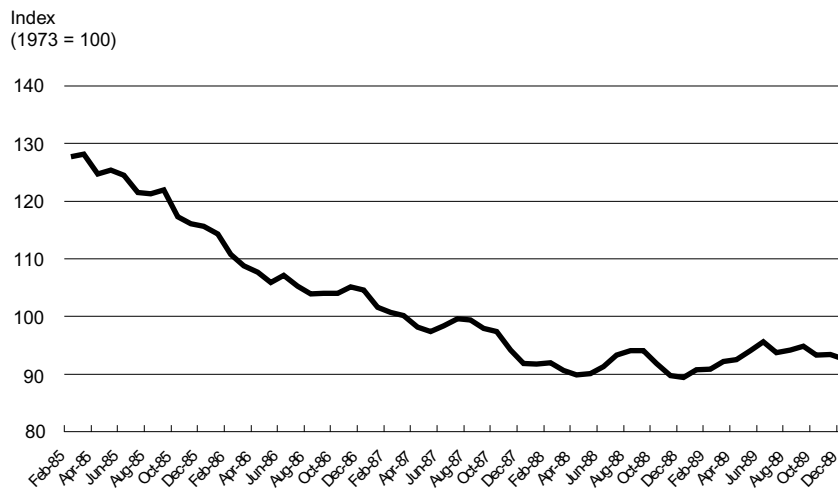
The main findings are: (1) Exports responded significantly, but high growth rates did not occur until 1987 and 1988, more than two years after the dollar started depreciating. (2) Geographically, no major new markets were developed. The U.S. did not expand the geographic reach of its exports; rather, the U.S. simply

exported more to its existing trading partners. (3) In terms of industries, no new markets were developed, as well. There were no industries that began to significantly export; rather, the U.S. simply exported more products from the same industries. (4) In terms of goods or, more specifically, manufacturing plants, some new markets were developed, as discussed in a recent article by Andrew Bernard and Bradford Jensen. The authors find that almost 40 percent of U.S. manufacturing export growth between 1987 and 1992 was by “new” exporters, i.e., manufacturing plants that had not previously exported. However, there are good reasons to believe that this growth was driven by the sharp and prolonged depreciation of the dollar in the mid-1980s. Consequently, a further decline in the dollar might be necessary for new markets — especially industries and plants beginning to export — to be developed. Otherwise, the adjustment in the U.S. will mainly take the form of exporting more of the same goods to the same destinations.

BROAD OVERVIEW OF THE U.S. TRADE EXPERIENCE: MID AND LATE 1980s

Starting in early 1985, the value of the dollar started declining. Between February 1985 and April 1988, the real value of the dollar fell 30 percent (Figure 1).⁶ When the dollar’s value declines, or depreciates, foreign firms exporting their goods to the United States that want to maintain their earnings in *their currency* must raise the prices they charge in *dollars*. At the same time, U.S. firms can lower their prices in the currency of the countries they sell in, and they can still earn the same amount, or more,

⁶Real value means the value of the dollar adjusted for different inflation rates so that it measures changes in purchasing power between the United States and its trading partners.

FIGURE 1**Broad Real Dollar Index
February 1985 - December 1989**

Source: Federal Reserve Board

in terms of dollars.⁷ As suggested in the introduction, this makes the price of U.S. imports rise, while the price of U.S. exports falls.

These price changes have apparently affected U.S. trade. Between 1986 and 1990, the trade deficit in goods and services shrunk by about \$55 billion, equivalent to 1.6 percent of GDP.⁸ The decline in the trade deficit was spread pretty evenly among

⁷ If the dollar declines 30 percent, for example, U.S. firms that do not change the prices they charge in terms of foreign currency will earn approximately 30 percent more in dollars. U.S. firms could reduce the prices they charge in terms of foreign currency by up to 30 percent, and they would still earn the same amount or more in terms of dollars.

⁸ Because of data availability, unless there is an explicit reference to real data, that is, data adjusted for inflation, the numbers in the text hereafter are nominal dollars, or dollars not adjusted for inflation. Measured in real terms (and with 2000 as the base year), the U.S. net export deficit shrunk by \$100 billion, or 1.7 percent of GDP, between 1986 and 1990.

its trading partners: When we look at the data, most bilateral trade deficits — that is, the U.S. trade deficit vis-à-vis each of its trading partners — shrunk or surpluses grew. For example, the U.S. deficits with its two largest trading partners at the time, Canada and Japan, each shrunk by about \$15 billion.⁹

The components of the U.S. trade deficit are, of course, exports and imports. Between 1986 and 1990, exports of goods and services rose 72 percent. Part of this increase simply reflected higher prices for these goods and services. But real exports of goods and services — that is, exports adjusted for inflation — still rose 56 percent during this period. In fact, real export growth was at 9 percent or higher for four consecutive years (1987-1990), the

⁹ Data on bilateral deficits, that is, deficits with a particular trading partner, refer to deficits in goods only.

largest rate of growth in any four-year period over the past 25 years.

Growth of real exports in 1985 and 1986 was low, just 3 percent and 7.7 percent, respectively. Most of the growth was in the ensuing years, with 1988 being the peak year for export growth. Note that 1988 was more than three years after the dollar started declining.

Imports continued to grow, but at a slower rate than before. While our focus is on exports, it is worth mentioning that imports continued to increase. But in each year between 1987 and 1990, inflation-adjusted imports grew at a slower rate than exports, averaging only 4.5 percent per year.

DID THE U.S. DEVELOP NEW MARKETS (COUNTRIES)?

The top 20 U.S. export partners (as of 1985) accounted for 78.2 percent of U.S. merchandise exports in 1986. In 1990, these partners accounted for a slightly higher share, 79.8 percent. Had the United States been shipping goods to new destinations, the share of U.S. trade going to these top trading partners would have decreased; this fact suggests that the export boom did not significantly involve new destinations. Instead, most of the increase in U.S. exports went to the top 20 countries. These top export destinations can be broken out into broad regions, such as East Asia, Europe, the NAFTA countries, and others.¹⁰ Figure 2 shows that U.S. export shares to these regions also changed only slightly.

We can use a scatter plot to show the change over time in each individual export partner's share of total U.S. exports (Figure 3). The horizontal axis of Figure 3 measures the share of total U.S. exports going to each destination

¹⁰ In January 1994, the U.S., Canada, and Mexico ratified the North American Free Trade Agreement (NAFTA).

in 1986. The vertical axis measures the share of total U.S. exports going to each destination in 1990. Each dot represents a different export partner (country). If the share of U.S. exports going to a destination did not change between 1986 and 1990, the dot for that destination would be on the diagonal line. The figure shows that most export destinations are very close to the diagonal. There is very little change between the two years with the exception of Mexico (increase from 5.7 percent to 7.2 percent), South Korea (increase from 2.9 percent to 3.7 percent), and the United Kingdom (increase from 5.3 percent to 6.0 percent).

In summary, there is no evidence that the U.S. export boom in the late 1980s led to the opening up of new markets in terms of countries. The United States simply exported more to its largest trading partners. Some partners, such as Mexico and South Korea, experienced strong economic growth during this period; hence, their demand for U.S. goods rose more rapidly than other countries' demand.

DID THE U.S. DEVELOP NEW MARKETS (INDUSTRIES)?

To examine whether the U.S. developed new markets in terms of industries or, more specifically, whether the U.S. export surge included industries that had not historically been very export-intensive, we examine two levels of industry data. The first divides U.S. merchandise exports into 67 industries (two-digit Standard International Trade Classification, or SITC). The second divides U.S. merchandise exports into 635 industries (three- and four-digit SITC).¹¹

¹¹ An example of an SITC (revision 2) two-digit industry is industry 76, "telecommunications, sound recording, and reproducing equipment." An example of a three-digit industry is industry 761, "television receivers." An example of a four-digit industry is industry 7611, "television receivers, color."

FIGURE 2

U.S. Export Share of Top 20 Destinations Grouped by World Regions

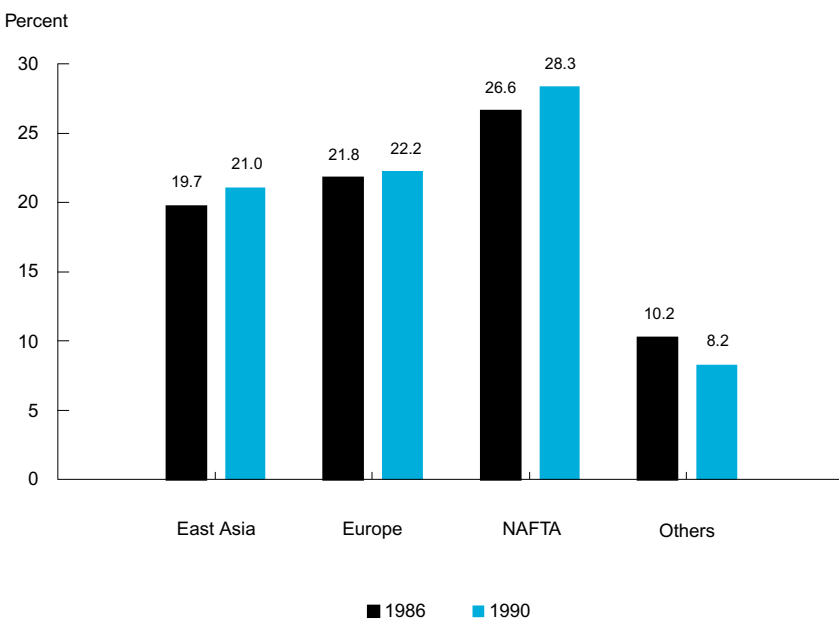
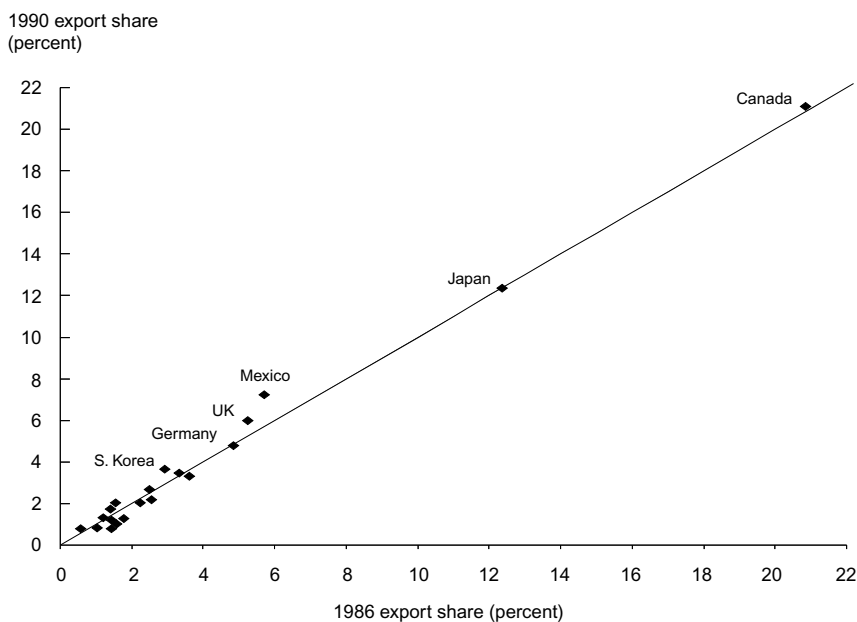


FIGURE 3

Scatter Plot of 1986 and 1990 Top 20 U.S. Export Destinations



We have plotted the share of total U.S. exports by each of the 67 industries in Figure 4. This figure is similar to Figure 3: The horizontal axis gives the share of total U.S. exports by each industry in 1986, and the vertical axis gives the share of total U.S. exports by each industry in 1990. Each industry is captured by one point on the figure. If the shares for a particular industry did not change, its data point should be on the 45-degree line. The figure shows little evidence that the U.S. began exporting in new industries. With the exception of the categories “other transport equipment” (airplanes), “electric machinery,” and “miscellaneous manufactured articles,” export shares increased little.¹²

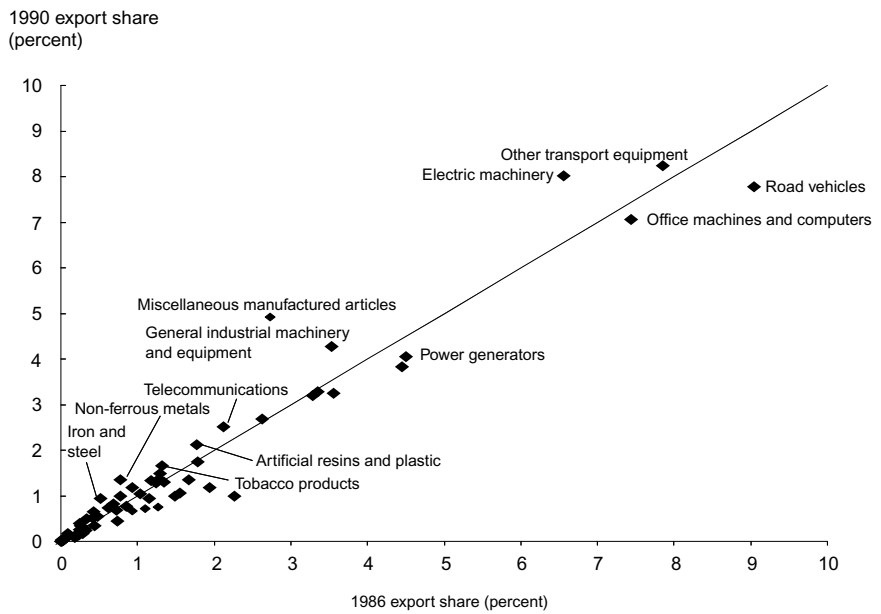
Showing a scatter plot of 635 industries is cumbersome. In Figure 5, the data are presented somewhat differently, following the method used by Timothy Kehoe and Kim Ruhl: Rank all industries by exports in 1986 starting with the industry that exports the least and ending with the industry that exports the most. Starting from the lowest industry, add industries until the group comprises 10 percent of total U.S. (merchandise) exports. This represents the first bin of industries. Continuing from this point, add up the next group of industries until they comprise another 10 percent of U.S. exports. At the end of this process there are 10 bins, each accounting for 10 percent of exports. This is what the black bars in Figure 5 represent. Because the first bin includes relatively small exporters, it takes 415.1 industries to fill it with the first 10 percent. Analogously, it requires only 1.7 industries to fill the final bin with the last 10 percent.

The blue bars in that figure indicate the share of total U.S. mer-

¹² The share of exports accounted for by road vehicles declined by a not unsubstantial amount.

FIGURE 4

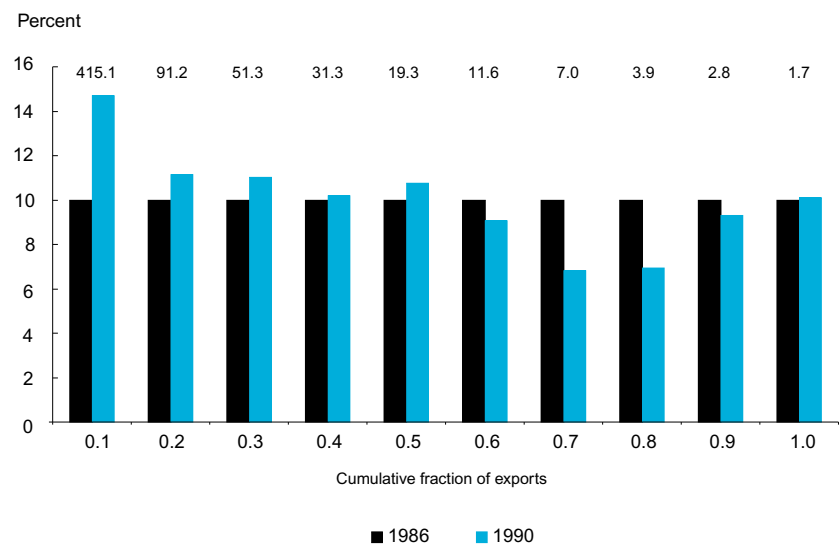
Scatter Plot of 1986 and 1990 Top U.S. Export Categories*



* Based on 2-digit SITC codes.

FIGURE 5

Change in Composition of U.S. Exports between 1986 and 1990*



*Based on 3- and 4-digit SITC codes.

chandise exports in 1990 by each bin's industries. If all industries' exports grew at the same rate (or, less restrictively, if each bin of industries' exports grew at the same rate), the black bars would be the same height as the blue bars. Each bin of industries would have the same 10 percent share of total U.S. exports that they did in 1986. For the most part, the figure shows little change. However, the first bin did show an increase. Specifically, those lowest exporting industries that collectively accounted for 10 percent of U.S. exports in 1986 accounted for 14.7 percent of U.S. exports in 1990. This suggests some, but not much, development of new markets at the industry level. In other words, more industries were exporting goods in 1990 than in 1986.

A closer look at the exporting industries in the bottom 10 percent indicates that they tend to be industries that produce intermediate goods, that is, goods that will themselves be used in producing a final good. For example, the industries include producers of parts made of iron, steel, and aluminum, as well as materials made from glass, wool, and cotton. However, the machinery and transport equipment industries are not heavily represented.

DID THE U.S. DEVELOP NEW MARKETS (GOODS)?

Having examined two levels of the data, we now turn to a slice of the U.S. trade data that is broken down into very fine detail. Andrew Bernard and Bradford Jensen's article examines the U.S. export boom in the late 1980s using data that draw from the 1987 and 1992 Census of Manufactures. This census covers almost the entire population of plants that produce manufactured goods.¹³ So the level of

¹³ Over 220,000 plants are surveyed. But in their analysis, Bernard and Jensen exclude plants that have fewer than 20 employees.

detail is much greater than what we examined above.

In the following discussion, we will assume that each plant makes a different good. With this assumption, Bernard and Jensen's results can shed light on whether new markets were developed during the last export boom. This may not be completely accurate because part of the export boom may have included an expansion in the number of plants that, for example, make a particular type of ball bearing for sale abroad. This would not be a

The numbers suggest that new markets — even at the level of goods, or more accurately, plants — were not really developed.

new market per se. A better interpretation might be that Bernard and Jensen's results can provide an upper bound, or ceiling, on the number of new markets developed during this period.

Bernard and Jensen find that existing plants (those that operated in both periods) accounted for 87 percent of the \$80.9 billion increase in U.S. manufacturing export growth in their sample between 1987 and 1992. Plant turnover (new plants and plants that failed) accounted, on net, for 13 percent of export growth. (See the left panel of Figure 6.) The top right panel of Figure 6 shows that new plants alone accounted for 29 percent of export growth, but this was offset by a decline in exports equal to 16 percent of total growth by plants that failed.

The numbers above suggest that new markets — even at the level of goods, or more accurately, plants — were not really developed. However, plants that operated in both periods (those plants that accounted for 87 percent of total export growth) can

be further differentiated: those that exported in each year; those that exported in 1987 but not in 1992; and those that did not export in 1987 but exported in 1992. The bottom right panel of Figure 6 shows that plants that exported in both years accounted for 61 percent of total manufacturing export growth. Plants that were in operation in both years but exported only in 1992 accounted for 38 percent of total export growth. This number must be balanced against the export behavior of plants that were in operation in

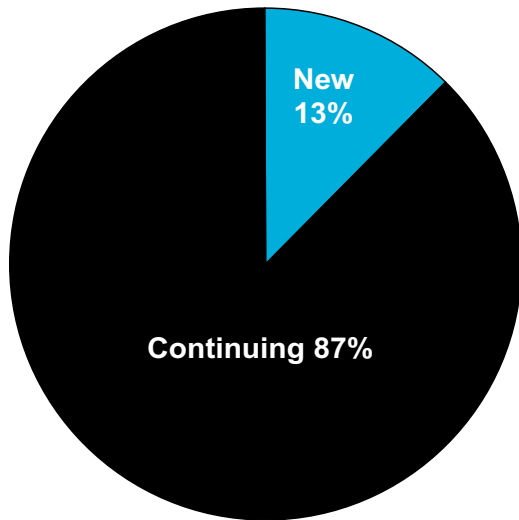
both years and that exported in 1987 but not in 1992. These plants accounted for a decline in exports equal to 12 percent of total export growth. On net, then, existing plants that exported in only one of the years accounted for 26 percent (38-12) of export growth.

Another way to interpret these numbers is to view export growth as coming from two sources: existing exporters and new exporters. New exporters can be new plants that exported or existing plants that began exporting. From this perspective, 61 percent of export growth is due to existing exporters, and the remaining 39 percent is due to new exporters. This number is significantly larger than suggested by the preceding discussion. Of the export growth due to new exporters, 13 percentage points are due to net new plants that began exporting, and 26 percentage points are due to existing plants that (on net) began exporting. Nevertheless, it is still the case that the majority of export growth is in existing goods or markets; moreover, the 39 percent number should be

FIGURE 6

U.S. Manufactured Export Growth: 1987 to 1992

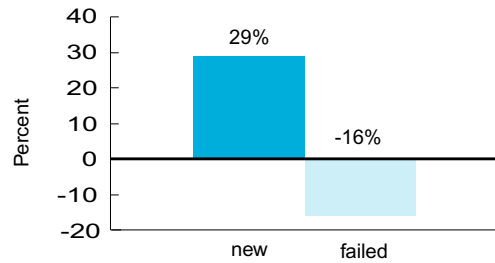
Share of export growth by plant type



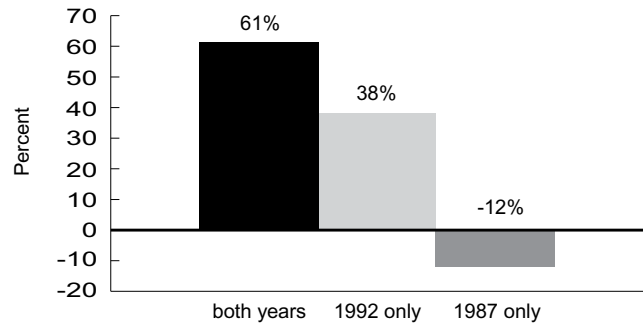
All percentages are of total change in exports by plants covered in Census of Manufactures from 1987 to 1992 = \$80.9 billion

Source: Bernard and Jensen

Share of export growth from plant turnover



Share of export growth by continuing plants (by exporting year)



thought of as a ceiling on the amount of exports that involved new markets.

That the majority of export growth is in existing goods or markets should not be surprising when we remember that it is costly to develop new markets. Depending on whether the plant already exports, these costs include establishing business relationships, setting up distribution channels, and marketing. Many of these costs are often sunk costs and not easily recouped. Hence, when exchange rates change, potential exporters will want to know if the change is temporary or permanent before they enter a new market. Unless the change is perceived to be permanent, it is natural to expect

that existing exporters would stick with their existing markets. Relative to these existing exporters, an exporter deciding on whether to enter a new market would face additional costs. It is likely that a firm or plant that is not exporting at all will bear even greater costs.

However, the magnitude of the change in the exchange rate matters, as well. Even temporary changes in the exchange rate may induce firms to make costly sunk investments in new production and markets if the change is large enough. The data for the late 1980s support the view that a sizable share of exports did indeed involve firms making such investments.


CONCLUSION

Although the value of the U.S. dollar has declined recently and U.S. exports have risen, they have not yet boomed. If they do boom, we can get a sense of what might happen by examining the last great U.S. export boom in the late 1980s and early 1990s. In that period, exports did not boom right away; at least two years passed before the boom began to kick in. In terms of destinations and industries, we find very little development of new markets. Rather, the United States continued to export heavily to its top trading partners, and it continued to ship goods in industries in which it already had a large export presence.

However, research by Bernard and Jensen, who examined plant-level data for the manufacturing sector, finds that 39 percent of export growth between 1987 and 1992 can be accounted for by plants that (on net) had not previously exported.

The overall pattern of results is not too surprising when we remember that it is costly to develop new markets

and that many of the costs are sunk costs. In the absence of permanent or large temporary changes in the exchange rate, it is natural to expect existing exporters to stick with their existing markets. The fact that the value of the dollar dropped 30 percent in the mid 1980s is apparently a key reason behind the large share of export growth due to newly exporting plants.

During the most recent depreciation, between February 2002 and the present, the dollar has fallen 15 percent, about two-fifths of what it fell by in the late 1980s. Unless the dollar depreciates further, exporters are unlikely to respond to the current depreciation by developing new markets, suggesting that the overall export response this time will be considerably smaller. 

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