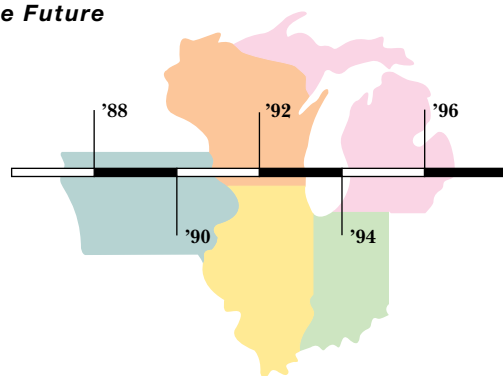


ASSESSING THE MIDWEST ECONOMY
Looking Back for the Future



Global Linkages to the Midwest Economy

Sixth in a series of workshops held at the Federal Reserve Bank of Chicago.

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An examination of the global linkages between an expanding world economy and the midwestern United States economy was the focal point of a September 18, 1996, workshop held at the Federal Reserve Bank of Chicago. This was the sixth in a series of workshops held during the past year in conjunction with the economic research department's Assessing the Midwest Economy project.

The workshop addressed a broad range of topics. The morning sessions focused primarily on issues related to international trade flows, exchange rate developments, and the impact of regional trade agreements. The afternoon sessions examined the importance and impact of foreign investment in the Midwest. The workshop concluded with a panel discussion on issues facing policymakers charged with the responsibility of facilitating and promoting international sector growth in a regional context.

Just how important is global trading to the Midwest's economic welfare, especially within a large market such as the U.S. where industry can achieve a high degree of specialization based solely on internal trade?

Introduction

The workshop was opened by William (Curt) Hunter, senior vice president and research director at the Federal Reserve Bank of Chicago. Hunter noted that the research department project, Assessing the Midwest Economy, aims to increase our understanding of the dramatic economic turnaround in the region. The Federal Reserve Bank of Chicago, in cooperation with other institutions, embarked on this project to identify public policy directions that will enable the region to sustain its recent run of good economic fortune and provide a sound footing for the region's businesses in shaping their investment and work force decisions.

While most observers are coming to appreciate the fact that global trade and investment have grown, Hunter posed the question: Just how important is global trading to the Midwest's economic welfare, especially within a large market such as the U.S. where industry can achieve a high degree of specialization based solely on internal trade? Are there other reasons, aside from growing trade volume per se, that the Midwest needs to become more fully integrated in world markets? Some observers suggest that the flow of ideas and technology is really what's at stake, said Hunter, while others maintain that participation in global markets has a beneficial competitive effect that keeps home industries on the right technological path of growing productivity.

Hunter observed that earlier workshops in the series had addressed the lowering of trade, investment, and factor flow barriers in markets *within* the U.S., for example, between states and regions. If wealth creation and specialization have been achieved through low barriers and open internal markets, doesn't it make sense to continue to focus regional policies on the elimination of explicit or implicit tariffs and nontariff barriers to trade and the promotion of labor mobility and a well-crafted transportation system? After all, such policies are being pursued by many of our foreign trading partners, such as the European Union.

Hunter stated that bringing the policy implications of the workshop findings back to the regional and local level presented the greatest but most important challenge. The workshop's concluding panel discussion would showcase the Chicago area as a case study as to how local areas might respond to the trends of globalization. Hunter recalled that the Atlanta area, where he previously resided, paralleled the Chicago area in many ways, especially in aspiring to be an international business and cultural center. While the Chicago area's ambitions have not yet included the Olympic Games, other Atlanta highlights, such as having one of the world's busiest airports and serving as a major convention destination and a center of international business, are already part of the Chicago environment. Atlanta's success as an international center, Hunter said, involved many years of continuous cooperation among leaders throughout the metropolitan area, the state of Georgia, and the business community. Finally, Hunter said that he looked forward to his own involvement in Chicago's efforts and that the Chicago area held much promise in this regard; Chicago is well on its way to being an *international city*.

International Trade—Importance to the Midwest

Foreign Exports, Domestic Exports, and the Illinois Economy

In the first presentation of the workshop, Illinois was offered as a case study of how the recent boom in manufactured exports is transforming the Midwest economy. Philip Israilevich, a senior regional economist and research officer at the Federal Reserve Bank of Chicago, and Geoffrey Hewings, director of the Regional Economics Applications Laboratory (REAL) and professor of geography at the University of Illinois at Urbana-Champaign, have constructed unique models of the structure and behavior of Midwest states over time. Most recently, they addressed how Illinois exports are shifting the composition of employment and output by industry and how exports are influencing the composition of labor force occupations.

From 1987 to 1994, manufactured exports from Illinois to foreign countries (measured in dollars of constant purchasing power) increased by almost \$8 billion dollars, or 92%.

In his presentation, Israilevich observed that from 1987 to 1994, manufactured exports from Illinois to foreign countries (measured in dollars of constant purchasing power) increased by almost \$8 billion dollars, or 92%. As a result, exports now comprise a more significant share of the state's total output (see table 1)—10.5% in 1994, compared with 6.4% in 1987. Rates of growth varied markedly by industry. However, in terms of sheer volume and value of exports, much of these gains were realized in the state's mainstay industrial sectors: processed food products, industrial machinery and equipment, electronic equipment, transportation equipment, and instruments and related products.

Each dollar of foreign exports from Illinois was calculated to induce more than an additional dollar of output growth in the state. However, these export "output multipliers" appear to have edged downward over the period 1987–94. Israilevich and Hewings attribute this trend to changing relationships among industries in Illinois. Over time, Illinois industries have been relying less on each other for intermediate parts, products, and equipment purchases. For this reason, according to Israilevich, an additional dollar's sale of foreign exports no longer induces the same high volume of intermediate or forward-linked purchases in Illinois. Exports induce relatively more employment than output (see figure 1). Manufactured products are being produced using more service activities within manufacturing companies and also as manufacturers purchase service inputs from business service providers within the state. For this reason, an incremental dollar increase to foreign export sales by Illinois manufacturing industries tends to boost service employment to a greater extent today than it did in 1987.

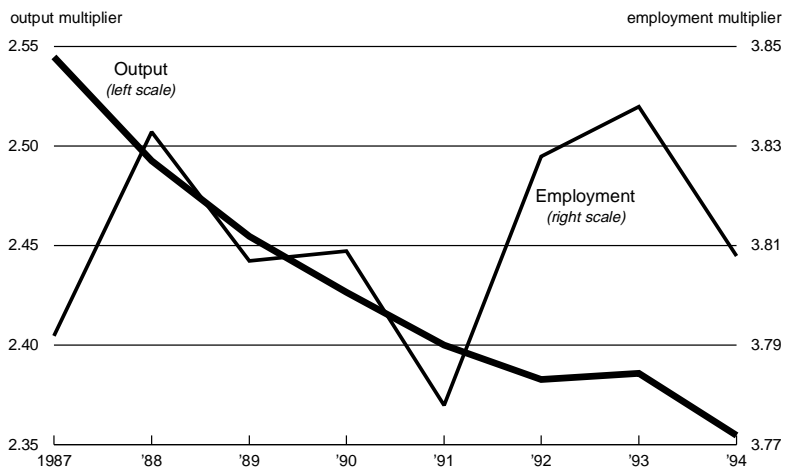
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Table 1 Illinois Exports by SIC, 1987 and 1994, in Millions of 1987 Dollars

Sector	1987	1994	Percent Change
Food and Kindred Products (20)	462.9	741.5	60.2
Tobacco Products (21)	1.5	0.6	-61.4
Apparel and Textile Products (22, 23)	32.9	83.6	154.1
Lumber and Wood Products (24)	5.4	45.6	748.4
Furniture and Fixtures (25)	22.3	84.0	276.1
Paper and Allied Products (26)	51.2	241.7	371.8
Printing and Publishing (27)	294.9	273.6	-7.2
Chemicals and Allied Products (28)	957.7	1,990.6	107.8
Petroleum and Coal Products (30)	101.2	48.5	-52.1
Rubber and Misc. Plastics Products (30)	216.2	418.2	93.4
Leather and Leather Products (31)	14.8	26.2	77.6
Stone, Clay, and Glass Products (32)	77.8	139.6	79.5
Primary Metals Industries (33)	169.4	371.3	119.2
Fabricated Metal Products (34)	373.5	617.1	65.2
Industrial Machinery and Equipment (35)	3,370.4	4,520.2	34.1
Electronic and Other Electric Equipment (36)	1,113.7	3,850.1	245.7
Transportation Equipment (37)	636.3	1,682.0	164.3
Instruments and Related Products (38)	350.4	766.8	118.8
Miscellaneous Manufacturing Industries (39)	218.8	373.9	70.9
Total	8,471.5	16,275.3	
Rates of Change		13.7%	92.1%

Source: Philip R. Israilevich and Geoffrey J. D. Hewings, "Foreign Exports, Domestic Exports, and the Illinois Economy," presentation prepared for the workshop, "Global Linkages to the Midwest," Chicago, IL, September 18, 1996.

Figure 1 Output and Employment, Export-Induced Multipliers



Source: Philip R. Israilevich and Geoffrey J. D. Hewings, "Foreign Exports, Domestic Exports, and the Illinois Economy," presentation prepared for the workshop, "Global Linkages to the Midwest," Chicago, IL, September 18, 1996.

Although the employment effects from sales of manufactured exports have helped to forestall the trend, the share of manufacturing payroll jobs in Illinois declined from 16.1% in 1987 to 14.4% in 1994.

Although the employment effects from sales of manufactured exports have helped to forestall the trend, the share of manufacturing payroll jobs in Illinois declined from 16.1% in 1987 to 14.4% in 1994. This change is consistent with the fact that U.S. (and Midwest) productivity gains continue to be characterized by labor saving in the manufacturing sector. Similarly, export growth is helping to reshape the distribution of occupations in the Illinois labor force. In sum, according to Israilevich, manufactured export growth has tended to preserve production, craft, and repair occupations, along with occupations classified as operators, fabricators, and laborers.

Taking a different tack on the importance of growing export markets and their impact on the region, Carlos Barbera, director of the international trade division of the state of Indiana, reported on efforts by Indiana's state development agency to respond to the increasingly global business environment. Recognizing the growing importance of foreign markets for Indiana's businesses, the agency is redefining its approach to economic development. According to Barbera's experience, the reactions of business to the growing internationalization range from welcoming a chance to increase sales by entering new markets to anxiety about the potential threats posed by competition from abroad. However, a recent study by Indiana University shows that 88% of the new jobs created in Indiana between 1992 and 1995 were related to exports; in addition, wages for export-related jobs were 5.5% higher than for non-export-related jobs.

Indiana's state development agency aims to encourage Indiana businesses to enter foreign markets, thereby reducing their exposure to the business cycle in the domestic economy. The agency's strategy of providing critical information to businesses entering export markets includes the following goals:

- To create a greater awareness of opportunities to export products to foreign markets through publication of a newsletter, hosting round tables, and sponsoring export-showcasing conferences.
- To become better acquainted with the business clientele in order to better provide focused export tools, especially for small and medium-sized businesses.
- To work hand in hand with businesses in order to help them gain entry into foreign markets. This effort is substantially furthered by a number of export promotion offices that the state of Indiana operates in Europe, Asia, and Latin America.

Eighty-eight percent of the new jobs created in Indiana between 1992 and 1995 were related to exports; in addition, wages for export-related jobs were 5.5% higher than for non-export-related jobs.

The strong growth we have observed in the last few years in U.S. exports to developing countries is the result of a growth phenomenon and not an exchange rate effect.

In 1970, exports represented 6.8% (and imports 5.9%) of U.S. gross domestic product; by 1995 exports' share had grown to 13.4% (and imports' share to 14.9%).

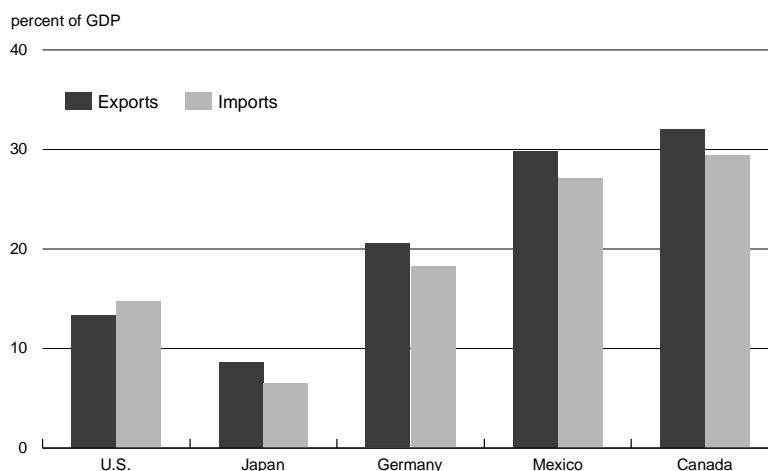
Commenting on Barbera's presentation, Brad Jensen, an economist at the U.S. Bureau of the Census, said the Census Bureau's research indicates that while plants that engage in export activity tend to perform better than other plants, with higher sales growth, productivity growth, and wage growth, the differences among plants tended to precede the initialization of export activities. In addition, he observed that, over time, there seems to be a large movement into and out of the category, "engaged in exports."

Gary Scott, deputy consul general and senior trade commissioner at the Canadian Consulate General of Chicago, said that the Canadian government has made the development of exporters a national goal; it intends to double the number of exporters through a series of programs.

Discussing the rise in U.S. exports, David Walters, chief economist and assistant U.S. trade representative for economic affairs at the Office of the U.S. Trade Representative, said that a foreign country's demand for imports is a function of the demand conditions in that country, as well as the exchange rate influence. He suggested that the strong growth we have observed in the last few years in U.S. exports to developing countries is the result of a growth phenomenon and not an exchange rate effect.

Doug Roberts, treasurer of the state of Michigan, related Michigan's perspective on recent developments in exports and foreign direct investment (FDI). While the U.S. is less reliant on trade than some of its trading partners (see figure 2), the importance of trade has grown steadily over the last several decades. For example, in 1970, exports represented 6.8% (and imports 5.9%) of U.S. gross domestic product (GDP); by 1995 exports' share had grown to 13.4% (and imports' share to 14.9%).

Figure 2 U.S. Reliance on Trade, Merchandise Imports and Exports, 1995



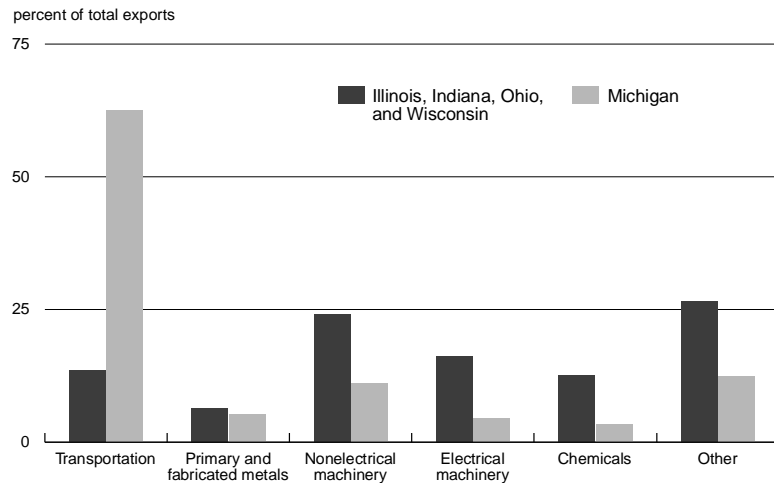
Source: Doug Roberts, reactor comments prepared from data obtained from U.S. Department of State, *Country Reports on Economic Policy and Trade Practices*, for the workshop, "Global Linkages to the Midwest Economy," Chicago, IL, September 18, 1996.

Any change in the value of the dollar relative to the yen has fundamental effects on the automobile sector, because it affects the cost difference of producing U.S.-made versus imported vehicles.

Roberts noted that Canada is Michigan's largest export market. Not surprisingly then, Michigan was also the largest North American Free Trade Agreement (NAFTA) trader among the 50 states in 1995. What distinguishes Michigan from the other midwestern states is the fact that transportation equipment is its dominant export sector (see figure 3). In terms of the sensitivity of the state's industry to exchange rate movements, Roberts pointed out that the relationship between the U.S. and Japanese currencies swamps other exchange rate effects. Any change in the value of the dollar relative to the yen has fundamental effects on the automobile sector, because it affects the cost difference of producing U.S.-made versus imported vehicles. Recently, the depreciation of the dollar against the yen has helped the U.S. auto industry reestablish market share relative to imports.

Roberts concluded that as state treasurer he not only watches the state's economy from an international trade point of view, but as he holds fiduciary responsibility for the state's pension funds, he must increasingly take an investment perspective on international issues.

Figure 3 Composition of Michigan and Great Lakes Exports, 1995



Source: Doug Roberts, reactor comments prepared from data obtained from U.S. Department of Commerce for the workshop, "Global Linkages to the Midwest Economy," Chicago, IL, September 18, 1996.

Exchange Rates Changes Look Different When Viewed from the Midwest

Jack Hervey, a senior economist at the Federal Reserve Bank of Chicago, observed that he was pleased to hear Roberts' comments on the importance of exchange rates, for he felt strongly about the necessity of closely identifying the issues when talking about exchange rate changes. Hervey emphasized the importance of that rigor when interpreting the results of the study he presented. The work, done jointly with William Strauss, also a senior economist at the Federal Reserve Bank of Chicago, examined changes in the dollar exchange rate from a regional perspective. A common view, espoused during the past decade, is that the resurgence of Midwest manufacturing since the mid-1980s has been importantly dependent on manufacturing's increased competitiveness in export markets. Proponents maintain that this increased competitiveness was strongly supported by the sharp depreciation of the dollar during 1985–87 and the more gradual depreciation since then. Hervey and Strauss disagree; they put forward the unorthodox view that except for the "aberration" in exchange rate markets during 1980–87, Midwest manufactured goods exports (especially durable goods exports) have faced an appreciating dollar exchange rate since 1974.

In 1993–94, the Midwest exported 43% of its manufactured exports to Canada and 13% to Mexico—markets in which the U.S. dollar appreciated.

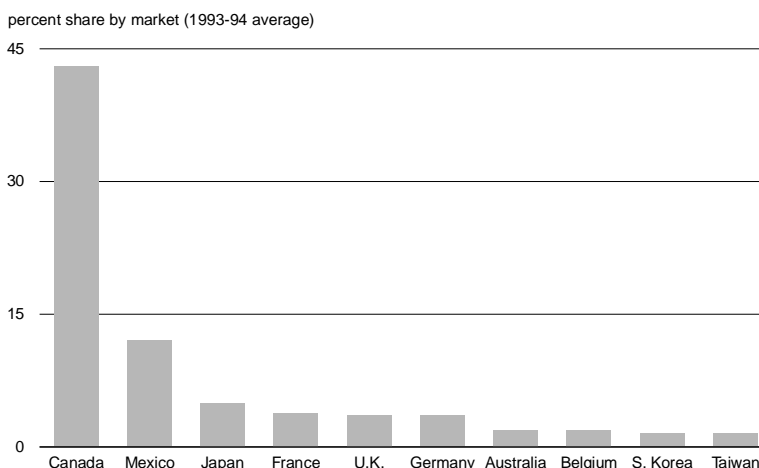
By comparison, the U.S. shipped 23% of manufactured exports to Canada and about 10% to Mexico.

In setting the stage, Hervey presented a historical perspective of exchange rate movements, highlighting two common aggregate dollar indexes—the Federal Reserve Board’s *Trade-Weighted Dollar Index* (FRB-TWD) and the J.P. Morgan *Real Broad Effective Foreign Exchange Index* for the dollar (JPMr). Hervey indicated that both of these indexes support the contention that the dollar has depreciated over the period 1970 to mid-1996. He also noted, however, that the JPMr index remained virtually flat during the period 1988–96.

Why should we be interested in a regional U.S. exchange rate? All states or aggregations of states (regions) face a common U.S. monetary policy, a common currency, and a common international border. Hervey noted, however, that different regions have different industrial mixes and foreign markets. In 1993–94, for example, the Midwest (Illinois, Indiana, Michigan, Ohio, and Wisconsin) exported 43% of its manufactured exports to Canada and 13% to Mexico—markets in which the U.S. dollar appreciated (see figure 4). A little over 5% of Midwest manufactured exports went to Japan and 13% went to Europe—markets in which the U.S. dollar depreciated. By comparison, the U.S. shipped 23% of manufactured exports to Canada and about 10% to Mexico (see figure 5). About 10% of U.S. manufactured exports went to Japan and 17% went to European markets. In short, markets in which the dollar was appreciating were considerably more important for the Midwest than for the U.S. overall.

Hervey and Strauss explored this issue by constructing an aggregate export-weighted dollar exchange rate index for eight geographical regions of the U.S., plus an aggregate export-weighted index for the U.S. overall. They contend that a dollar index of this type facilitates the examination of exchange rate movements in an environment where, over time, the dollar is observed to depreciate against some currencies (such as the Japanese yen or the German mark), appreciate against some currencies (such as the Canadian dollar or Mexican peso), and remain virtually unchanged against others (a number of developing country currencies). At this stage, interpretation of their work must be strictly limited to exports of manufactured goods, because data that would allow them to make broader statements about regional exchange rates relative to domestic markets are not readily available. Hervey and Strauss indicated that they are working on an extension of the study that will permit the addition of an import competitiveness measure.

Figure 4 Midwest Exports—Total Manufactured Goods

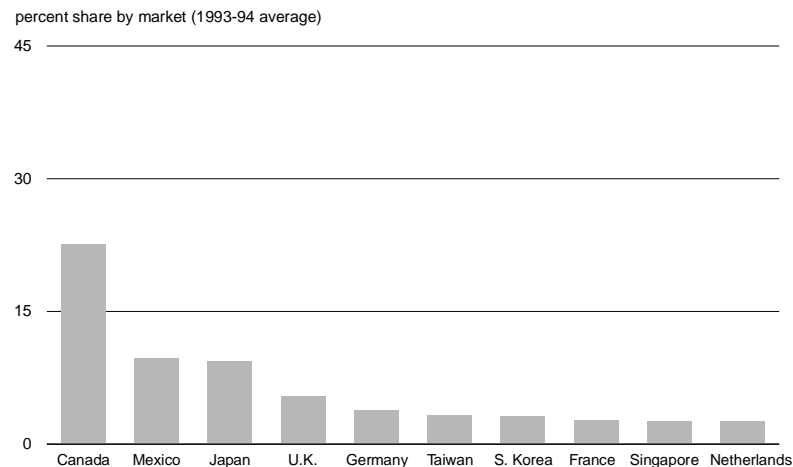


Source: Jack L. Hervey and William A. Strauss, “A Regional Export-Weighted Dollar: A Different Way of Looking at Exchange Rate Change,” data compiled from Massachusetts Institute for Social and Economic Research, “MISER,” *State of Exporter Location Data*, Series 2, 1993 and 1994, for a presentation prepared for the workshop, “Global Linkages to the Midwest,” Chicago, IL, September 18, 1996.

Except for the 1980–88 blip in the dollar exchange rate, Midwest exporters, on average, have faced an appreciating trend in the dollar since early 1974.

Midwest manufacturing exporters have become more competitive in export markets during the past ten to 15 years.

Figure 5 U.S. Exports—Total Manufactured Goods



Source: Jack L. Hervey and William A. Strauss, "A Regional Export-Weighted Dollar: A Different Way of Looking at Exchange Rate Change," data compiled from U.S. Department of Commerce, FT-900, Annual Revisions, 1993 and 1994, for a presentation prepared for the workshop, "Global Linkages to the Midwest," Chicago, IL, September 18, 1996.

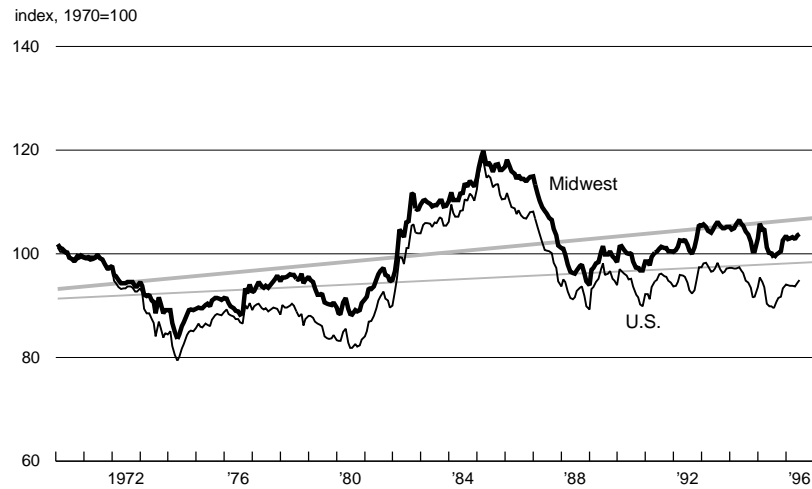
In addition to the nine exchange rate indexes, Hervey and Strauss aggregated manufacturing industries (by two-digit SIC codes) into three groupings—durable goods, non-durable goods, and total manufactured goods. Finally, the indexes are adjusted for relative wholesale price level changes between the U.S. and the 44 countries included in the indexes.

The indexes show marked differences across regions in terms of the aggregate exchange rate faced by manufactured goods exporters. Hervey and Strauss suggest that, contrary to popular perception, in the aggregate Midwest manufactured goods exporters (due to the composition of the foreign markets they serve and their heavy concentration in durable goods industries) have faced an appreciating dollar since the late 1980s. Furthermore, they maintain that except for the 1980–88 blip in the dollar exchange rate, Midwest exporters, on average, have faced an appreciating trend in the dollar since early 1974. This is most apparent for durable goods exports; as of June 1996, the aggregate real dollar exchange rate faced by Midwest durable goods manufacturers stood 4% higher than in 1970 (well before the initial formal devaluation of the dollar), 17% higher than in 1974 (following two formal dollar devaluations and the subsequent *floating* of the dollar), and nearly 7% higher than the average for 1988 (see figure 6).

Summing up, Hervey acknowledged that Midwest manufacturing exporters have become more competitive in export markets during the past ten to 15 years. Export growth has been an important part of the resurgence of Midwest manufacturing. Hervey also suggested that restructuring may have been more effective than is commonly thought. Given the foreign markets served by Midwest manufacturing, it appears that the region's increased competitiveness in export markets has been accomplished without the help of a depreciating dollar. Indeed, Midwest manufacturing has become more competitive in export markets in the face of an appreciating real dollar.

Responding to Hervey's presentation, Thomas Klier, a senior economist at the Federal Reserve Bank of Chicago, said the findings seem to suggest that the productivity effects of implementing advanced manufacturing technologies and restructuring production relations within and between plants may have been much more prevalent and effective than

Figure 6 Regional Exchange Rate Indexes, Midwest and U.S., durables



Source: Jack L. Hervey and William A. Strauss, "A Regional Export-Weighted Dollar: A Different Way of Looking at Exchange Rate Change," presentation prepared for the workshop, "Global Linkages to the Midwest," Chicago, IL, September 18, 1996.

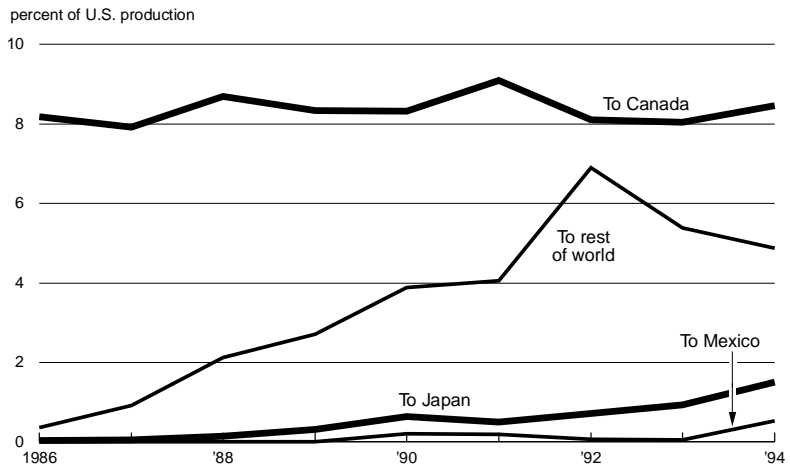
The U.S. automobile industry, concentrated in the Midwest, is essentially dominated by competition from imports and not exports.

previously thought. Klier offered two caveats to interpreting the numbers presented by Hervey. First, in carving up the country into separate regions, one ignores economic linkages that exist across these regions. To the extent that, say, products produced in the Midwest are used as inputs by plants located in other regions and shipped abroad from there, the exchange rate index for the Midwest misrepresents this region's exposure to exchange rate fluctuations. Second, as information on import weights is currently not available to the authors, their index cannot capture important elements of the Midwest's story. For example, the U.S. automobile industry, concentrated in the Midwest, is essentially dominated by competition from imports and not exports (as discussed earlier by Roberts). In 1986 only 32,000 units of U.S. auto production were exported (excluding shipments to Canada and Mexico). Even by 1995 only about 500,000 units were exported. (See figures 7 and 8.) Changes in the competitiveness of the domestic auto industry have been associated with import- rather than export-related factors, like the adoption of *voluntary export restraints* by Japanese producers in the late 1970s and the arrival of the so-called transplant assembly plants, starting with Honda's first plant in Ohio in 1982. The current index needs to be complemented by an import-weighted index, which in all likelihood would portray a different picture.

Cletus Coughlin, a vice president at the Federal Reserve Bank of St. Louis, noted the index numbers problem that haunts the various aggregate exchange rate index constructions, including the regional indexes. This is of particular concern the further in time the index moves from the base period, in this case 1993–94. The constant base period assumes that the relative importance of the various markets stays the same over time. This, of course, has not been the case over the period 1970–96. Hervey acknowledged this problem, but noted that the lack of consistent data series for exports by state, by SIC, and by country of destination limited the authors' use of data prior to 1993.

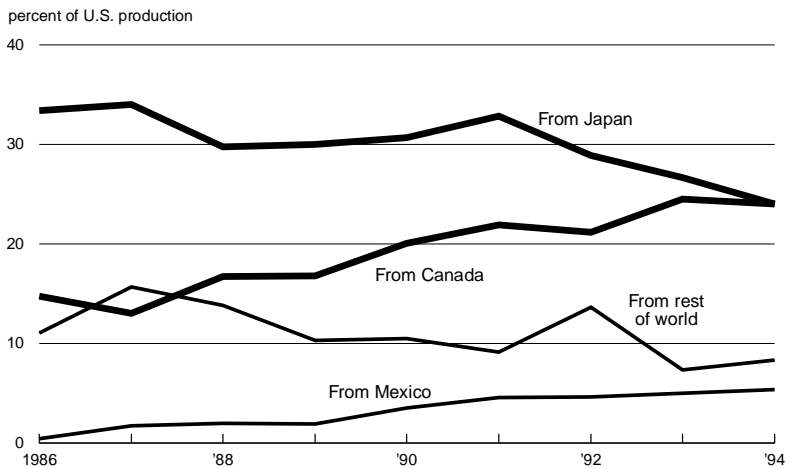
As the center of feed grain and oil seed production in the U.S. and an important producer of livestock products and processed food products, the Midwest is an important link in the chain that ties the U.S. economy to its foreign trading partners.

Figure 7 Exports of Passenger Cars



Source: Thomas Klier, reactor comments prepared from data obtained from the American Automobile Manufacturers Association, *World Motor Vehicle Data*, various years, for the workshop, "Global Linkages to the Midwest," Chicago, IL, September 18, 1996.

Figure 8 Imports of Passenger Cars



Source: Thomas Klier, reactor comments prepared from data obtained from the American Automobile Manufacturers Association, *World Motor Vehicle Data*, various years, for the workshop, "Global Linkages to the Midwest," Chicago, IL, September 18, 1996.

U.S. Agricultural Trade and Its Impact on the Midwest Rural Economy

Agricultural exports currently account for nearly 10% of U.S. goods exports. As the center of feed grain and oil seed production in the U.S. and an important producer of livestock products and processed food products, the Midwest is an important link in the chain that ties the U.S. economy to its foreign trading partners. An examination of the Midwest's ties to the world economy, without reference to the agricultural industry, would be incomplete.

Agricultural exports account for 895,000 jobs nationally, with about one-third of these jobs located in rural areas.

The number of nonfarm jobs supported by agricultural exports substantially exceeds the number of farm jobs.

The impact of agricultural exports on both farm and nonfarm employment in the Midwest was examined by William Edmondson, an economist at the Economic Research Service of the U.S. Department of Agriculture, who reported on a study conducted with Gerald Schluter, Chinkook Lee, and Lowell Dyson, also of the Economic Research Service. Edmondson pointed out that U.S. agricultural exports have risen sharply during the current decade, reaching a record level of \$55.8 billion in 1995, an increase of \$20 billion since 1988. In general, foreign sales were stimulated by rising overseas demand, a weaker dollar, and trade agreements that further opened international markets to U.S. products. But in contrast to the export boom of the 1970s, which was spurred largely by increased shipments of bulk commodities, such as wheat, corn, and soybeans, the more recent gains were driven by both bulk commodities *and* high-value or processed products, such as red meat, poultry, fruit, and vegetables. Edmondson noted that this development—the change in commodity composition of agricultural exports—presents a special challenge to regions involved in agriculture, since the shift toward high-value agricultural exports implies that the economic benefits associated with foreign sales will move to those states that produce and/or process high-value food products. This has implications for the Seventh Federal Reserve District, he said, since the region is not as well represented in food processing as in the production of bulk commodities.

To gain further insight into the employment effects of agricultural trade in the Seventh District states (Illinois, Indiana, Iowa, Michigan, and Wisconsin), Edmondson and his fellow researchers employed an input–output model. This allowed them not only to estimate the aggregate level of trade-related employment, but also to allocate employment across seven broad economic sectors in rural and metropolitan areas. The seven sectors were livestock, grains and oilseeds, other crops, food processing, manufacturing, transportation and trade, and a residual category for all other sectors. The results indicated that agricultural exports account for 895,000 jobs nationally, with about one-third of these jobs located in rural areas. The impact on rural areas is relatively greater in Seventh District states, with about 40% of the export-related jobs in rural communities. Among the five District states, Illinois reported the most jobs generated by agricultural exports. However, Iowa was more dependent on trade, with a larger ratio of export-supported jobs to total employment. Edmondson emphasized that “the effects of agricultural exports on the economy are not limited to the farm sector, but also affect upstream and downstream sectors linked to agriculture by supplying its inputs and handling its products.” The number of nonfarm jobs supported by agricultural exports substantially exceeds the number of farm jobs.

Edmondson concluded by noting that trade liberalization will continue to promote growth in agricultural trade, and that rural areas will probably benefit because they possess a significant share of the industries tied to production and shipping activities. However, metro areas are expected to reap the greater reward, given their overall strength in food processing and the shift in agricultural exports toward high-value products.

In responding to Edmondson’s presentation, Mike Singer, an agricultural economist at the Federal Reserve Bank of Chicago, noted that the growth in processed food exports was also influenced by increased demand for convenience by customers, which often accompanies income growth, and improved transportation technology. He suggested that the Midwest will continue to benefit from agricultural exports, not only as producer of grain and livestock products, but also because the region plays an important role in the food manufacturing industries associated with its production strengths.

Singer suggested three extensions to Edmondson's research. First, he suggested that the broad livestock sector of the input–output model be disaggregated into smaller divisions to evaluate the employment impact on the Midwest of recent gains in pork exports. Quantifying the local economic benefits of pork exports would be valuable to policymakers and other participants involved in the debate regarding the desirability of locating *mega* hog farms in the region. Second, a comparison across years could identify industries that exhibit a relatively greater employment response to a change in total agricultural exports or a shift in the composition of agricultural exports. An interesting comparison would be 1981, a year in which agricultural exports reached a cyclical low, versus the record year of 1995. Finally, he suggested the model be used to evaluate the impact of a change in agricultural export policy on Midwest employment. As an example, the current low level of grain stocks and the potential for a poor harvest have led some observers to raise the specter of an embargo on exports of U.S. grain. An evaluation of the consequences of such an action in advance would play an important role in policy discussions.

Regional Perspectives on Trade Agreements

NAFTA's Potential Impact by U.S. Region

During the second morning session, the focus shifted to international agreements and their influence on the economies and trade of the parties involved.

Leading the discussion of this very current and sensitive issue, Michael Kouparitsas, an economist at the Federal Reserve Bank of Chicago, presented the preliminary results of his research on the international and domestic implications of NAFTA. Kouparitsas noted that “although NAFTA has been in place since 1994, it is too early to gauge the long-run impact of its far-reaching trade liberalization program.” He added that “it is also difficult to measure the short-run impact of NAFTA because observed short-term fluctuations in North American activity are quite possibly driven by factors other than NAFTA. At this time the only guide to the short- and long-run impact of NAFTA is analysis involving quantitative theoretical models of international trade.” Kouparitsas briefly described the current state of this research and the improvements that his approach offered.

Kouparitsas' approach differs from existing analysis along one important dimension. He works within the framework of a dynamic general equilibrium model, whereas the current research typically employs static models. According to Kouparitsas, his approach provides three improvements over traditional static analyses. First, a dynamic model allows for the endogenous accumulation of physical capital, while static models limit the world supply of capital to that available in the pre-liberalized period. This is important because liberalization is expected to lead to greater capital accumulation and ultimately higher output and consumption. Second, static analysis is limited by the fact that it rules out trade in foreign assets and thereby provides no role for foreign capital inflows. Access to capital markets allows relatively smaller economies, such as those of Canada and Mexico, to maintain smooth consumption paths during the period of adjustment to the liberalized environment. Finally, the greatest advantage of a dynamic model is that it allows the researcher to speculate on the path of adjustment following the implementation of NAFTA and provides a means by which to measure the costs of adjusting to the liberalized environment.

Kouparitsas then described the level of protection and trade patterns that existed at the time of the initial signing of the NAFTA agreement in December 1992. He argued that the effective levels of protection from nontariff barriers (NTBs) were significantly higher than those associated with explicit *ad valorem* tariffs. In most cases the tariff-equivalent NTB rates exceeded their tariff-equivalent counterparts by more than 20 percentage points.

At the time of the initial signing of the NAFTA agreement in December 1992, the effective levels of protection from nontariff barriers (NTBs) were significantly higher than those associated with explicit ad valorem tariffs.

NAFTA is expected to permanently raise Mexico's consumption level by 1%. The gains in terms of percentage changes are smaller for Canada and the U.S., but quite large in absolute terms.

NAFTA is likely to have a positive impact on the Midwest region through an expansion of durable goods manufacturing activity.

Kouparitsas' discussion of trade flows focused on the low volume of bilateral trade between Canada and Mexico. Using 1992 IMF *Direction of Trade Statistics*, he observed that less than 2% of Mexican and Canadian exports/imports were devoted to trade with each other. These statistics show the importance of U.S.–Canadian and U.S.–Mexican trade to Canada and Mexico. At the same time, they suggest that North American trade is relatively less important to the much larger U.S. economy.

Kouparitsas concluded his presentation by reporting on simulations of his quantitative model of the North American economy. His findings are summarized in table 2. Kouparitsas' model suggests that all three North American economies gain from NAFTA. In fact, he estimates the welfare gain to Mexico to be almost 1% of its pre-liberalization consumption level (i.e., NAFTA is expected to permanently raise Mexico's consumption level by 1%). He noted that the gains in terms of percentage changes are smaller for Canada and the U.S., but quite large in absolute terms. The sectoral analysis predicts that NAFTA will lead to an expansion of all non-primary sectors in Canada and the U.S., whereas the U.S. and Canadian primary commodity sectors are expected to remain at their pre-NAFTA levels. By contrast, all Mexican sectors are predicted to expand under NAFTA. Based on these results, Kouparitsas conjectured that NAFTA would likely have a positive impact on the Midwest region through an expansion of durable goods manufacturing activity.

Commenting on Kouparitsas' presentation, Randy Eberts, executive director of the Upjohn Institute, wondered why the results of Kouparitsas' model show larger effects than those of earlier static models. Kouparitsas said this is because, unlike the static models, his model allows for capital stock accumulation.

Walters suggested Kouparitsas might be better able to gauge the welfare effects of NAFTA through further disaggregation of his model. He remarked that a highly aggregated general equilibrium model cannot measure specialization gains within sectors. Walters maintained that even though a large share of international trade is in fact intra-industry trade, the welfare effects it generates are sensitive to the level of aggregation used in the model.

Table 2 Long-Run Effects of NAFTA, Percentage Deviation from Pre-Liberalization Path

	Canada	Mexico	U.S.	Rest of World
Welfare	0.02	0.92	0.11	0.01
Real GDP	0.11	3.26	0.24	0.01
Real Consumption	0.08	2.52	0.25	0.01
Labor Hours	0.07	1.99	0.14	0.00
Real Wage	0.09	2.12	0.25	-0.01
Capital Investment	0.16	5.05	0.37	0.01
Total Imports	0.29	12.47	1.39	0.14
Total Exports	0.37	13.87	1.46	0.02
Foreign Assets/GDP*	1.29	-8.09	-0.14	0.25
Terms of Trade	-0.15	-0.72	-0.04	0.27

*Deviation from pre-liberalization path.

Source: Michael Kouparitsas, "NAFTA's Potential Impacts by U.S. Region," presentation prepared for the workshop, "Global Linkages to the Midwest Economy," Chicago, IL, September 18, 1996.

A Regional Assessment of the U.S.–Canada Free Trade Agreement (Five Years After)

The NAFTA agreement has received a great deal of attention, pro and con, during the last four years. However, its implementation less than three years ago marked the second phase in a concerted drive to open North American borders. The first phase, involving the U.S. and Canada, began nearly 30 years ago with the U.S.–Canada auto pact (which had significant implications for the Midwest) and continued with the signing of the U.S.–Canada Free Trade Agreement (FTA) in 1989. Two discussions that closed out the morning session dealt with the U.S.–Canada experience.

“Canada is this nation’s and the Midwest’s largest single export market ... [in 1993 accounting] for over one-fifth of the country’s and over 40% of the Midwest’s merchandise exports.” With that comment, Jane Sneddon Little, assistant vice president and economist at the Federal Reserve Bank of Boston, set the stage for an examination of the FTA.

A major trade liberalization between two countries holds several potential outcomes, according to Little. Falling trade barriers might encourage the consolidation of production, in one country or the other, as firms attempt to benefit from economies of scale and specialization. Firms may also want to minimize transportation costs and delivery times, which may counter moves to consolidate. But there are tensions between these goals. How has the FTA affected the nature of bilateral trade and investment flows, Little asked, and has the FTA resulted in more trade or more cross-border investment?

Little posed some related questions: How did trade expand following the move to free trade? Was growth based on comparative resource endowments (comparative advantage), or was it through increased intra-industry trade (IIT)? The distinction is important, Little said, because “growing IIT brings efficiency gains to producers in both countries and is thought to be less disruptive.” There are fewer *losers* than is the case where the expansion in trade is based on comparative advantage.

The FTA, the first stages of which went into effect January 1, 1989, ends tariffs and removes or reduces many nontariff barriers to trade in goods, services, and capital. The conditions of the agreement are to be implemented over ten years. Little noted that, at the outset, analysts believed that because of its smaller economy and higher tariffs, Canada would gain more (and risk more) than the U.S. Early effects are somewhat masked by the fact that both economies went into recession in 1990. Furthermore, Canada’s recession was more serious and its recovery was slower. Meanwhile, the Canadian dollar was depreciating against the U.S. dollar. All of these developments tended to discourage U.S. export growth to Canada. Nonetheless, Little observed that during the 1989–93 period, “Canada was the one part of the industrial world to absorb a growing share of U.S. exports.”

During the 1989–93 period, several geographical regions of the U.S. showed relatively fast bilateral export growth with Canada—East South Central, West South Central, and New England. Little explained that large differences across regions in the export product mix may account for part of the regional variation in growth rates, as different industries vary in their sensitivity to cyclical developments. In addition, tariff rate reductions across industries were phased in at different times and were more significant for some industries than others. For example, the transportation industry accounts for over 40% of merchandise exports to Canada from the East North Central (Midwest) region and only 3% from the New England region. But the FTA had little effect on this industry and, thus, a minimal impact on a large segment of the Midwest’s exports to Canada, because the auto pact had established essentially free trade in autos between the U.S. and Canada beginning in 1965. Little observed that because of the long-standing auto pact and the cyclical influence of the recession on the auto industry, a robust rate of trade growth between Canada and the Midwest during the early stages of the FTA probably should not have been expected.

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Because firms can now serve a single market, investment location decisions are not dictated by tariff-jumping needs, but by economic considerations.

Little suggested that the increased integration of the U.S.–Canadian market brought about by the FTA has changed the role of their cross-border foreign investment and of their respective foreign affiliate firms. Because firms can now serve a single market, investment location decisions are not dictated by *tariff-jumping* needs, but by economic considerations, such as minimizing transportation costs and product delivery times. Little pointed out that the evidence suggests that U.S. and Canadian firms are “choosing to stress plant scale economies and, thus, trade.” The growth in the number of affiliates, on both sides of the border, has been slow, which suggests that U.S. and Canadian firms are shifting the focus of their bilateral activities from direct investment to trade.

Little said that the verdict is not yet in on whether this trade is based on comparative advantage or IIT. However, national trade balance data suggest that U.S.–Canada trade has generally expanded as comparative advantage would suggest. For example, industries in which the U.S. recorded a net trade surplus against Canada in 1988 generally recorded an even larger net trade surplus in 1993 (see table 3). The same pattern generally emerged for Canadian industries that recorded a net trade surplus with the U.S. in 1988. The national pattern broke down, however, when Little examined regional trade balances, in particular New England and the Midwest. Intra-industry trade, at the national level, fell slightly between 1988 and 1993. Adjusting this measure to exclude the auto industry, which already enjoyed free trade, the IIT measures increased—nationally and for those regions where transportation is an important industry (see figure 9).

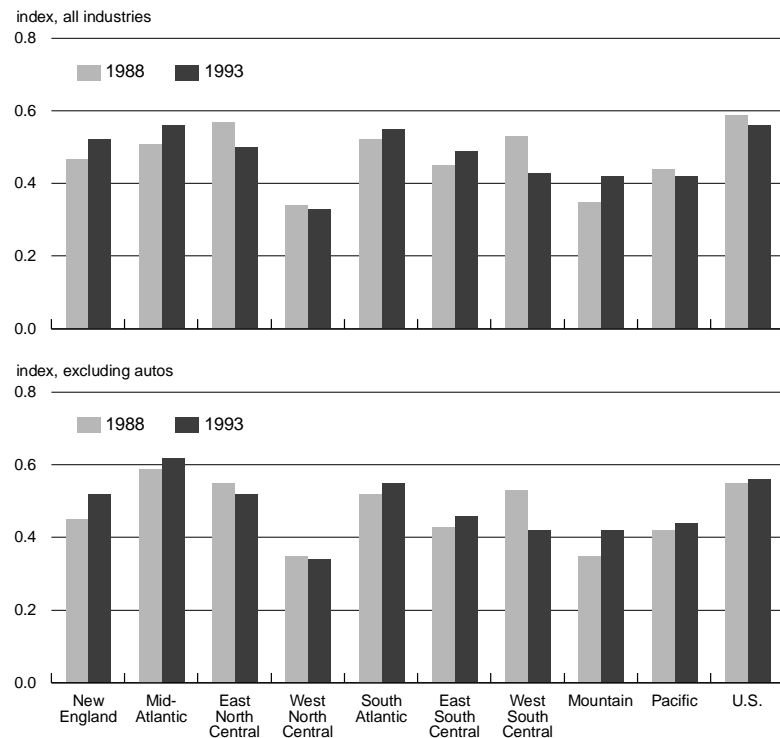
Table 3 U.S. Trade Balance by Industry Category, 1988 and 1993
(Millions of Canadian Dollars)

Code	Description	1988	1993
1–5	Animal Products	-1,826.1	-2,585.0
6–14	Vegetable Products	1,279.3	1,223.4
15	Fats, Oils, and Waxes	-15.5	-141.3
16–24	Prep. Foodstuffs, Beverages, Tobacco	-129.1	-626.8
25–27	Minerals	-9,009.5	-16,098.2
28–38	Chemicals and Allied Products	109.8	1,862.9
39–40	Plastic and Rubber	1,110.7	1,141.7
41–43	Hides, Skins, Leather, etc.	-35.4	-68.1
44–46	Wood and Articles	-3,605.3	-7,098.5
47–49	Pulp and Paper	-7,948.2	-6,568.2
50–63	Textiles	816.0	1,033.9
64–67	Footwear	-14.5	-38.1
68–70	Stone, Ceramics, Glass	350.8	582.5
71	Pearls, Stones, Jewelry	-102.4	-1,134.4
72–83	Base Metals and Articles	-4,224.5	-3,195.8
84	Industrial Machinery	8,475.7	9,296.1
85	Electric and Electrical Machinery	4,408.1	5,458.1
86–89	Transportation	-6,823.7	-18,026.9
90	Instruments, Scientific and Measuring	1,610.8	2,451.0
91–92	Instruments, Photographic and Musical	54.6	41.6
93	Arms	125.0	212.5
Total*		-14,830.2	-36,669.1

*Including industries not shown.

Source: Jane Sneddon Little, “U.S. Regional Trade with Canada in the First Five Years of Free Trade,” presentation prepared from data from *Statistics Canada* for the workshop, “Global Linkages to the Midwest Economy,” Chicago, IL, September 18, 1996.

Figure 9 Index of U.S.–Canada Intra-Industry Trade



Note: Averages of indexes calculated at the two- or four-digit levels, weighted by each industry's share of total trade between the United States and Canada. Calculations for industries in harmonized code 84 through 90 were based on the four-digit data. All other calculations were based on two-digit data.

Source: Jane Sneddon Little, "U.S. Regional Trade with Canada in the First Five Years of Free Trade," presentation prepared from data from *Statistics Canada* for the workshop, "Global Linkages to the Midwest Economy," Chicago, IL, September 18, 1996.

The physical proximity of the Midwest to the Canadian market and the presence of a key metropolitan area in the region appear to bode well for the Chicago area as a focal point for Midwest–Canada trade.

Finally, using a measure of changes in the industrial composition of exports and imports, Little observed that structural change is much greater at the regional level than the national level. The data indicate that regions with a relatively large gain in IIT often experienced a relatively large structural change in exports and imports. In short, it is not clear that increasing two-way trade necessarily smooths the transition to free trade.

Implications for the Midwest economy that can be drawn from this work are based on early regression analysis. Little suggested that to the degree that domestic U.S. economic activity shifts to other regions of the country, the Midwest may face slower export growth to Canada than otherwise would be the case. On the plus side, the analysis suggests that the physical proximity of the Midwest to the Canadian market and the presence of a key metropolitan area in the region appear to bode well for the Chicago area as a focal point for Midwest–Canada trade.

A Canadian View of the FTA and NAFTA

Gary Scott, deputy consul general and senior trade commissioner from the Canadian Consulate General of Chicago, concluded the morning session with a discussion of the FTA from a Canadian perspective. He said that foreign investors have viewed the Canadian economy more favorably since Canada signed NAFTA. The increased openness of the North American market means that foreign investors can choose the best overall location in North America to satisfy their needs and still have access to the entire market. According to Scott,

The recent economic recovery of the Canadian economy was export led and U.S. demand was an important part of that development.

Industries that have recorded losses in market share in the Canadian market have recorded gains in the U.S. market

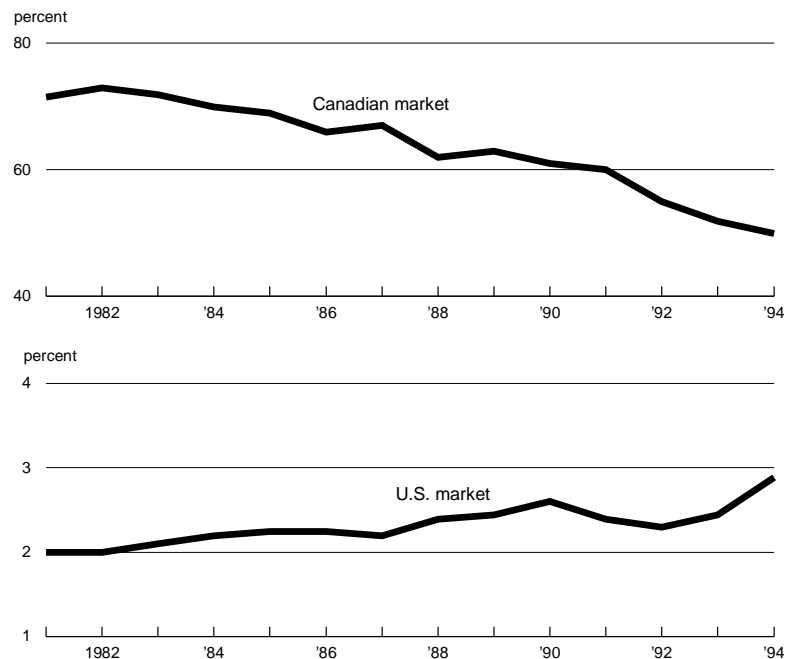
foreign direct investment from all sources has increased significantly since NAFTA was implemented in 1994. Growth in Canadian exports has also been impressive, he said, with gains dating back to the implementation of the FTA. The recent economic recovery of the Canadian economy was export led and U.S. demand was an important part of that development.

Scott noted that the more open North American economy is promoting increased productivity and regional specialization in industries. Nonetheless, he observed that there is still much work to be done to fully achieve the objective of a free trade area. Over 30 working groups and committees have been set up to insure effective implementation and administration of NAFTA rules. Important areas of continuing discussion include: rules of origin, customs, agricultural trade and subsidies, standards, government procurement, temporary entry, and trade remedies.

According to *Statistics Canada* data, the U.S. and Canada trade more than \$1 billion per day in goods and services. To put this in perspective, Scott said, the province of Ontario buys more U.S. products than Japan. One of the results of the FTA has been an increase in the cross-border dependence of the two countries. One of the characteristics of a free trade agreement, a characteristic that suggests the FTA is doing what it is supposed to do, is the increased specialization of trade. This goes along with the increased interdependence of the two economies. If jobs and growth increasingly depend on the cross-border relationship, it would seem that the focus of policy should be on ensuring that the relationship is strengthened.

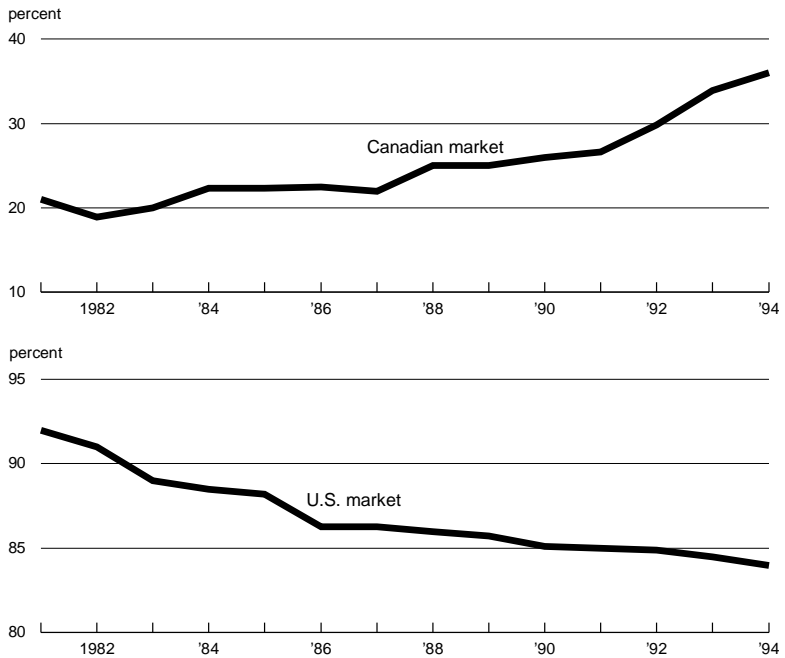
The FTA has, of course, produced winners and losers. Based on the combined markets of the two countries, Canadian manufacturers have lost market share since 1989. However, Scott observed that industries that have recorded losses in market share in the Canadian market have recorded gains in the U.S. market (see figure 10). Similarly, "U.S. manufactures have experienced a gentle decline in their share of the U.S. market, while gaining steadily in Canada," said Scott (see figure 11).

Figure 10 Canadian Share of Market



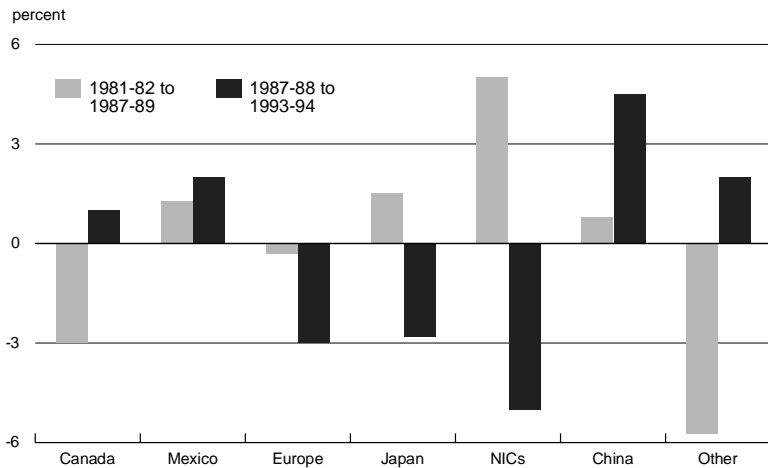
Source: Gary Scott, reactor comments prepared from data obtained from the Government of Canada, *Proceedings of the Standing Committee on Foreign Affairs*, various years, for the workshop, "Global Linkages to the Midwest Economy," Chicago, IL, September 18, 1996.

Figure 11 U.S. Share of Market



Source: Gary Scott, reactor comments prepared from data obtained from the Government of Canada, *Proceedings of the Standing Committee on Foreign Affairs*, various years, for the workshop, "Global Linkages to the Midwest Economy," Chicago, IL, September 18, 1996.

Figure 12 Change in U.S. Import Market, Percent Change in Market Share by Trading Partner



Source: Gary Scott, reactor comments prepared from data obtained from the Government of Canada, *Proceedings of the Standing Committee on Foreign Affairs*, various years, for the workshop, "Global Linkages to the Midwest Economy," Chicago, IL, September 18, 1996.

Scott also looked at gains and losses among other major suppliers of imports to the U.S. market over two periods, 1981–82 to 1987–89 and 1987–88 to 1993–94 (see figure 12). During the earlier period, the major gainers in U.S. market share were the newly industrialized countries (NICs) of Asia, Japan, and Mexico. The more recent period showed gains in U.S. import market share by Canada, Mexico, China, and other (primarily Asia), with substantial losses in market share by the NICs, Japan, and Europe.

Scott noted that some difficult issues remain to be resolved between the U.S. and Canada, issues that “reflect political and protectionist pressures that run counter to our mutual long-term economic well-being.” He cited *trade remedies* that continue to adversely affect the relationship between the two countries. Antidumping and countervailing duty actions are economic distortions that are especially serious irritants from the Canadian perspective. Scott emphasized that “these kinds of actions weaken not only the agreement (FTA) itself, but the willingness of the spirit necessary to have such agreements in the first place.” In conclusion, Scott said that, despite these issues, “95 percent of our bilateral trade continues to move successfully across the border.”

Trade and the Economy: International Linkages in an Open Market

Luncheon speaker David Walters, chief economist and assistant U.S. trade representative for economic affairs at the Office of the U.S. Trade Representative, provided his perspective on the growing importance of trade to the economy and the effect that trade policy can have on expanding trade opportunities. Walters discussed the growing recognition that international trade and economic opportunity are inexorably linked and that the promotion of trade benefits all participants whether they be developing or industrialized nations.

Before examining potential trade opportunities and trends, Walters first addressed his concern that the econometric tools for modeling and measuring the benefits from trade are inadequate and may even be getting worse. First, most trade models are static and, therefore, fail to accommodate dynamic effects. Dynamic modeling is significantly more difficult, but it produces results that are more accurate given the rapid structural change in the economy. (In this context, he commended Kouparitsas for his efforts at examining the NAFTA experience in a dynamic framework.) Second, more industrial sectors need to be added to trade models. Because of data limitations, significantly less is known about the effects of trade in the service industries than in the manufacturing sector. Given the prominence of the service sector in the U.S. economy in particular, understanding the effects of trade on service firms is critical. Third, too many of the current models have been designed primarily to evaluate the effects of tariff reduction while, increasingly, the more important issues in trade negotiations have to do with internal, nontariff barriers to entering markets. Walters indicated that working to correct these flaws is important so that we might better understand the gains that can occur through freer trade. For example, Walters noted that current estimates indicate that gains from the Uruguay round of the General Agreement on Tariffs and Trade (GATT) negotiations will add 3% to U.S. gross domestic product over ten years.

Turning to the forces that are currently expanding trade opportunities, Walters highlighted the following four factors:

- Technology, which makes trade and what can be traded easier;
- The shrinking physical size of many products;
- The rapid growth of emerging markets; and
- Improvement in trade agreements.

All of these factors have led to strong growth in the value of goods and services exported from and imported into the U.S. economy. The total value of exports and imports of goods and services (including return on investment) rose from 13% of GDP in 1970 to almost 30% in 1995. The dollar value of this trade increased from \$1.6 trillion in 1992 to \$2.1 trillion in 1995. In turn, the benefits from trade spill over to the firms that export. Workers with export-related jobs earn 17% more than the U.S. average and the industries in which they work have higher rates of growth and productivity. Walters also noted that, according to academic studies, average wages in import-competing industries have fallen below the U.S. average. Trade affects the direction of resources by shifting the composition of job growth to export jobs.

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Three-fourths of the future growth in export opportunities will come from low- and middle-income nations rather than from the already developed economies.

Walters stressed that the big gains from future trade will come from emerging markets, especially China. This development brings policy challenges. Since China is not a participant in the World Trade Organization, a great deal of attention will have to be paid to how a nation with one-fourth of the world's population is included in the trend toward liberalizing trade. What is clear, Walters said, is that the movement to market-driven economies and structures (as a model for participating in the benefits from trade) is occurring in virtually all emerging markets. Understanding these markets is critical since three-fourths of the future growth in export opportunities will come from low- and middle-income nations rather than from the already developed economies. The good news is that the structure of U.S. trade favors serving low- and middle-income nations. The U.S. has traditionally had a comparative advantage in capital goods trade, which will be in demand among these low- and middle-income nations. Consumer goods have never been a particular comparative trade strength for the U.S. economy. In fact since 1760, the U.S. has only run a surplus in consumer goods trade in the post World War II years of 1947 and 1948.

Addressing trade prospects for the Midwest, Walters asserted that prospects appear favorable. The region already captures nearly one-fourth of U.S. goods exports and its 30% growth in exports between 1993 and 1995 was higher than the U.S. average. Perhaps even more important, growth rates for Midwest exports to the emerging markets of Latin America and Asia are relatively robust.

Walters concluded by observing that the health of the U.S. economy and its ability to compete and trade in world markets must be seen as interconnected.

Foreign Investment and the Midwest Economy

There is a tendency when examining interactions in international markets to concentrate on developments that are directly associated with the export and import of goods. This is probably because, among all international transactions, goods transactions are the most easily defined. Trade in services has only recently received greater attention in the analysis of international transactions. Foreign investment is another component of the broader international trade assembly that has dramatically increased in importance within the U.S. economy during the past 20 years. As the U.S. trade deficit has grown since the early 1970s, it has had to be financed through the importation of foreign capital. An important part of that capital inflow has been in the form of foreign direct investment (FDI). The first afternoon session addressed this important and growing component, which is contributing to the internationalization of the U.S. and Midwest economies.

FDI in Manufacturing in the Southeast and Midwest

Cletus Coughlin, vice president and associate director of research at the Federal Reserve Bank of St. Louis, presented his recent analysis of the location of new foreign-owned manufacturing plants in the U.S. Coughlin noted that the share of output attributable to foreign-owned firms in the U.S. rose from 2.3% in 1977 to 6.2% in 1994. Coinciding with that development has been a rise in the percentage of U.S. workers employed by foreign-owned firms. Between 1977 and 1994, employment at nonbank foreign affiliates rose from 1.7% to 5.0% of all U.S. nonbank employment. Among sectors of the economy, manufacturing attracts the largest share of foreign direct investment in the U.S. (FDIUS), representing 38% of the stock of FDIUS in 1995. Within manufacturing, FDIUS employment in the five-state district of the Federal Reserve Bank of Chicago is substantial; the 353,200 workers employed in 1994 by foreign-owned firms in the region represented one-sixth of the U.S. total, with Illinois being the fourth leading state nationwide and Indiana the eighth.

In his current research, Coughlin focuses on one aspect of manufacturing FDIUS, the spatial distribution of FDI in new plants throughout the U.S. His empirical work analyzes 316 new manufacturing plants that were planned to be built between 1989 and 1993.

Within manufacturing, FDIUS employment in the five-state district of the Federal Reserve Bank of Chicago is substantial; the 353,200 workers employed in 1994 by foreign-owned firms in the region represented one-sixth of the U.S. total, with Illinois being the fourth leading state nationwide and Indiana the eighth.

A new foreign plant is more likely to choose a county that can provide a labor force with a relatively high education level, relatively large manufacturing employment, access to an interstate highway, and a large regional market.

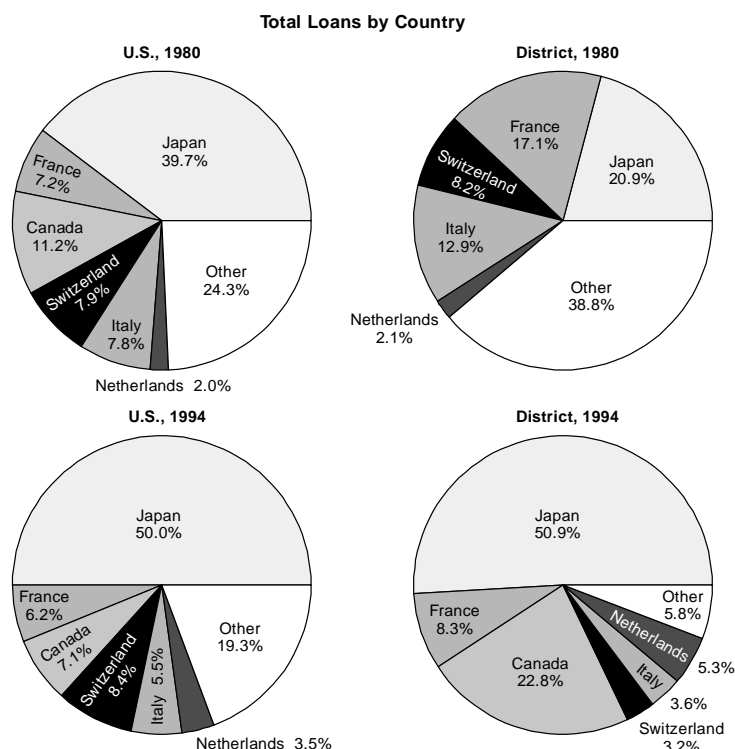
Econometric analysis is employed to explain the observed spatial distribution of these plant locations at the county level. The underlying assumption of the model is that a foreign firm will choose to invest in a particular county only if doing so will maximize its profit. The modeling of the location decision includes various categories of potential determinants: cost factors, such as wage rates, unionization rate, and local taxes; revenue factors, such as regional personal income; work force characteristics, such as education levels; and transportation accessibility of the area. Consistent with previous studies, Coughlin's preliminary modeling results indicate that a new foreign plant is more likely to choose a county that can provide a labor force with a relatively high education level, relatively large manufacturing employment, access to an interstate highway, and a large regional market (as measured by the area's personal income and its population density). Preliminary analysis using only the Midwest observations reveals similar results.

Foreign-Owned Banks in the Midwest

Tim O'Neill, executive vice president and chief economist of the Bank of Montreal addressed a number of issues associated with the emergence and role of foreign banking operations in the U.S. and Midwest.

O'Neill observed that more than 650 banking offices (including agencies, branches, commercial banks, Edge Act banks, and New York state investment companies), representing 61 countries, operate in the U.S. In mid-1995 foreign banks accounted for 33.3% of all commercial and industrial (C&I) loans, compared with a 21% share in 1983. Foreign bank assets of about \$1 trillion make up 22.6% of total U.S. bank assets. Japanese banks maintain the largest foreign presence, in terms of loans, in the U.S. market, followed by Canadian and French banks (see figure 13).

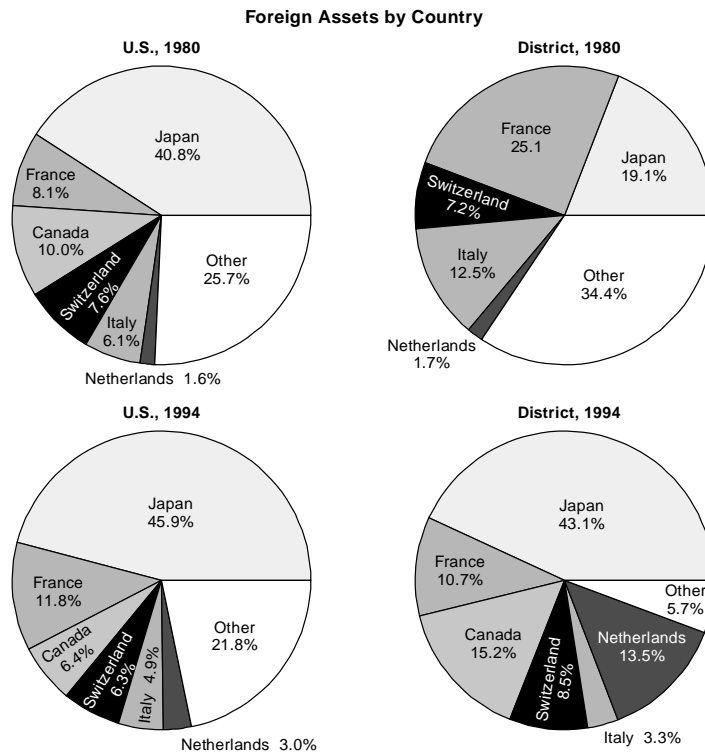
Figure 13 Major Countries' Loans, U.S. and District



Source: Tim O'Neill, reactor comments (chart prepared from an article by Linda Aguilar, "A Current Look at Foreign Banking in the U.S. and Seventh District," *Economic Perspectives*, Federal Reserve Bank of Chicago, January/February 1995, pp. 20-28) from the workshop, "Global Linkages to the Midwest Economy," Chicago, IL, September 18, 1996.

In the Midwest, foreign banks account for about the same share of C&I loans, 32%, as in the U.S. Foreign banks' regional share of assets, however, is somewhat smaller, at 17%. Japanese banks also represent the largest foreign presence by asset size in the Midwest. Canadian and Dutch banks follow, heavily influenced by the acquisition of two major Chicago banks during the first half of the 1980s (see figure 14.)

Figure 14 Major Countries' Assets, U.S. and District



Source: Tim O'Neill, reactor comments (chart prepared from an article by Linda Aguilar, "A Current Look at Foreign Banking in the U.S. and Seventh District," *Economic Perspectives*, Federal Reserve Bank of Chicago, January/February 1995, pp. 20-28) from the workshop, "Global Linkages to the Midwest Economy," Chicago, IL, September 18, 1996.

Measured by asset growth, foreign banks located in the Midwest expanded tenfold during the 1980s, compared with an increase just shy of fourfold for foreign banks in the nation.

O'Neill observed that foreign banks grew dramatically in the Midwest during the 1980s. Measured by asset growth, foreign banks located in the Midwest expanded tenfold during the decade, compared with an increase just shy of fourfold for foreign banks in the nation. Over the same period, domestic banks' assets increased only 1.7% in the Midwest and 2.1% nationally. O'Neill also noted that foreign banks maintain a somewhat different customer base than domestic banks, concentrating primarily on wholesale lending to corporations. This leads to somewhat different loan portfolios, with the national and Midwest experience being roughly comparable in this regard. Foreign banks' C&I loans make up 51% of their total U.S. loans, while real estate loans account for 22%. Domestic banks hold only 23% of their total in C&I loans and 43% in real estate (see table 4). This reflects the fact that domestic banks are more active in retail banking and may also have a knowledge-base advantage in real estate lending.

Table 4 Real Estate and Commercial Loans, Percent of Total Loans

	U.S.-Owned Commercial Banks		Total Foreign Banking Offices	
	Real Estate	C&I	Real Estate	C&I
Total U.S.				
1985	27.1%	31.3%	10.8%	43.4%
1990	39.9	26.3	20.5	48.7
1994	42.7	23.3	22.1	51.0
Seventh District				
1985	27.3	31.4	7.2	49.5
1990	39.0	29.5	19.3	58.0
1994	42.9	26.6	16.5	61.9

Note: 1994 figures are for the second quarter.

Source: Tim O'Neill, reactor comments prepared from an article by Linda Aguilar, "A Current Look at Foreign Banking in the U.S. and Seventh District," *Economic Perspectives*, Federal Reserve Bank of Chicago, January/February 1995, pp. 20–28, for the workshop, "Global Linkages to the Midwest Economy," Chicago, IL, September 18, 1996.

The turbulence in U.S. financial markets during the mid-1980s to early 1990s provided an opportunity for foreign banks to increase market share, especially among the more competitive commercial and industrial customers.

A number of factors have been cited as being influential in contributing to the rapid growth in foreign banking in the U.S. during the 1980s. They include an expansion in banking in support of increases in foreign direct investment (FDI), the reduction in regulatory barriers, technological changes, and the unbundling of banking functions into separable product lines, or *commoditization*. O'Neill said that these factors might explain why foreign banks would move beyond their domestic borders, but not necessarily why they would locate in the U.S. or the Midwest. Indeed, he added that FDI growth was faster in other industrial countries during the 1980s than in the U.S. and that banking deregulation came later in the U.S. Why did foreign banking in the U.S. grow relatively rapidly during the mid-1980s to early 1990s?

O'Neill suggested that the turbulence in U.S. financial markets during that period—including problems with loans to less developed countries, the savings and loan crisis, and purported credit crunch problems—provided an opportunity for foreign banks to increase market share, especially among the more competitive commercial and industrial customers. Many foreign banks also enjoyed a favorable cost of capital advantage relative to U.S. banks during this period—in part an exchange rate phenomenon. Foreign banks that initially came to the U.S. in order to service their home-based FDI were able to extend these banking relationships to include U.S.-based firms. Finally, the sheer size and dynamics of the U.S. market serves as an important drawing point for foreign institutions. In some cases, firm-specific conditions influenced foreign banks' entry into the U.S. market, especially regional markets like the Midwest. O'Neill suggested, for example, that increased openness to branch banking in the Midwest was a factor in Bank of Montreal's (BoM) recent expansion in the retail banking market; BoM's experience with branching in the Canadian market was viewed as a plus on entering this portion of the Midwest market. Physical proximity was also considered a positive factor.

In the Midwest, foreign banks have brought expertise in branching, have strengthened global links to an increasingly international market, and have increased the number of credit facilities available for local borrowers.

The slowdown in foreign bank growth in recent years may be, in part, a result of a decline in their efficiency relative to domestic banks as the regulation of domestic banks has become less onerous.

Growth in foreign banking has slowed since 1992. O'Neill observed that market shares of foreign banks operating in the U.S. have plateaued and, in some cases, declined. He cited several possible reasons for this development, including a slowdown in economic growth in the banks' home countries and a deterioration in the relative cost advantages enjoyed by the foreign banks when they first entered the U.S. market. For example, foreign banks' cost of capital relative to U.S. competitors has increased from the levels of the 1970s and 1980s. In addition, U.S. banks became more efficient and competitive during the 1980s, making it more difficult for foreign banks to expand market share through their existing facilities and more expensive to acquire market share through the purchase of existing U.S. institutions.

Has the expansion of foreign banking in the U.S. been beneficial? O'Neill observed that to the extent that "public interest is increased (or, at minimum not diminished) by foreign banks entry, then it should be applauded." Overall, he said, efficiency in the industry has been enhanced by foreign bank entry. Foreign banks have also contributed to the industry's innovativeness, bringing in new products and services in response to the changing needs of the U.S. economy. In the Midwest, foreign banks have brought expertise in branching, have strengthened global links to an increasingly international market, and have increased the number of credit facilities available for local borrowers.

Responding to O'Neill's presentation, Hunter noted that initially foreign banks were able to enter the U.S. market and compete effectively because they were more efficient. In addition, there was a tendency among foreign banks to increase their loan portfolios through the purchase of existing loans rather than *growing loans* through more aggressive lending activity. The slowdown in foreign bank growth in recent years may be, in part, a result of a decline in their efficiency relative to domestic banks as the regulation of domestic banks has become less onerous.

R&D Activities and Innovativeness of Foreign-Owned Firms in Ohio

Asim Erdilek, professor and chairman of the department of economics at Case Western Reserve University, presented recent work on the research and development activities of foreign-owned firms in Ohio. He discussed the relative importance of foreign-owned firms to the region's economy (see table 5) and introduced recent U.S. Department of Commerce

Table 5 Share of Manufacturing Employment at Foreign-Owned Firms

	1988	1989	1990	1991	1992	1993	1994
Illinois	9.5	10.9	11.8	12.6	12.8	12.6	12.3
Indiana	8.4	10.0	13.7	13.0	13.6	13.4	13.3
Michigan	7.0	7.2	7.6	7.8	8.3	8.8	8.6
Ohio	7.9	10.1	11.2	11.9	12.3	12.3	12.2
Wisconsin	7.2	7.6	8.3	8.5	8.2	7.6	7.5
U.S.	8.2	9.5	10.4	11.0	11.2	11.3	11.4

Source: Asim Erdilek and Milton A. Wolf, "R&D Activities and Innovativeness of Foreign-Owned Firms in Ohio," presentation prepared for the workshop, "Global Linkages to the Midwest Economy," Chicago, IL, September 18, 1996.

About two-thirds of all foreign-funded R&D in the U.S. is concentrated in a few high-technology sectors in which foreign-owned firms have established strong export positions.

data regarding the extent of research and development (R&D) activity of foreign-owned firms. While in 1992 the U.S. affiliates of foreign-owned companies accounted for 6% of U.S. GDP, their R&D activity represented 17% of the privately funded R&D performed by U.S. businesses. However, about two-thirds of all foreign-funded R&D in the U.S. is concentrated in a few high-technology sectors in which foreign-owned firms have established strong export positions. Erdilek's study addressed the following questions:

- Do foreign-owned firms transfer technologies to their U.S. subsidiaries or do they rely primarily on U.S. technologies in establishing a presence in the U.S. market?
- To what extent does R&D activity performed by foreign subsidiaries spill over to the host economy?

Examples from the Midwest, such as the arrival of Japanese auto assembly plants and the restructuring of the U.S. steel industry under foreign influence, suggest that inward direct foreign investment can play a significant role in developing the host country's technological capabilities.

Erdilek and his coauthor Milton Wolf, Ph.D., analyzed the activities of firms with at least 10% foreign ownership, operating in Ohio. Their analysis is based on 180 returned questionnaires, 86% of which are from firms engaged in manufacturing. The data show that more than half the firms in the sample did not engage in R&D. In addressing the technology transfer issue, the authors looked at foreign-owned firms' payments for technology to either U.S. companies or home country companies, as well as technology-related receipts by the foreign-owned company. It appears that the vast majority of firms do not make or receive technology payments. For the ones that do, however, the U.S. is the most important source of both technology and technology receipts. This result suggests that the technology transfer flows in both directions. Finally, in terms of technology spillover, the authors report that Ohio's economy benefited mostly through the opening of the new business, which sometimes represented the first manufacturing activity in a new industry. According to information provided by the foreign-owned firms in Ohio, major beneficiaries of the companies' innovations are their customers. However, Erdilek and Wolf were unable to distinguish the ownership/nationality of these suppliers. In conclusion, Erdilek cited Honda's assembly operations in Ohio as an example of successful technology transfer with spillover to the regional economy.

Ed Malecki, professor of geography at the University of Florida, responded to Erdilek's presentation by putting the analysis of the Ohio-specific data in a broader context. He distinguished four primary types of foreign investment of transnational corporations: 1) *listening posts* for technology acquisition or technology capture; 2) *world product mandate operations*, from which local linkages and backward spillover effects tend to be relatively large; 3) production and assembly only for the North American market, using designs from elsewhere and often using low levels of local content; and 4) product design and development for local (and possibly global) markets, which tends to have higher levels of local linkage and benefit, such as backward spillovers. Malecki said that, apart from the third type, all of these investment categories involve some degree of R&D activity.

Table 6 Largest Foreign Sources of R&D Investment in the U.S., 1993

Country	Expenditures (\$ Billions)	R&D Employees	Number of Companies	Number of R&D Facilities	Average Number of R&D Employees per Company Location
Switzerland	2.524	14,700	16	45	919
Germany	2.321	19,200	32	95	600
United Kingdom	2.295	20,000	61	109	328
Canada	2.190				
Japan	1.781	11,800	107	219	110
France	1.204	9,300	22	52	423

Note: Detailed data on Canada not included in source information.

Source: Ed Malecki, reactor comments prepared from *Science*, 1995; National Science Board, 1996, 4-47-4-48; and calculations by the author for the workshop, "Global Linkages to the Midwest Economy," Chicago, IL, September 18, 1996.

Table 7 U.S. R&D Facilities of Foreign Companies, by Country and Industry, 1994

Industry	Total	Japan	U.K.	Germany	France	Switzerland	South Korea	Netherlands	Sweden	Other
Total	635	219	109	95	52	45	26	26	22	41
Computers	39	22	0	4	0	0	7	3	0	3
Software	41	25	6	4	3	0	1	1	0	1
Semiconductors	35	19	0	3	0	0	10	3	0	0
Telecommunications	29	14	2	4	2	1	1	0	2	3
Opto-Electronics	20	11	2	3	0	0	0	0	1	3
HDTV, Other Electronics	71	33	10	9	4	5	3	4	0	3
Drugs, Biotechnology	111	22	23	18	11	17	1	5	5	9
Chemicals, Rubber, Materials	109	23	19	28	17	10	0	4	0	8
Metals	15	5	3	1	4	1	0	0	1	0
Automotive	53	34	1	11	2	0	3	0	2	0
Machinery	22	7	4	2	3	0	0	0	6	0
Instrumentation, Controls	40	1	23	3	5	4	0	3	1	0
Foods, Consumer Goods, Misc.	53	7	19	6	2	6	0	5	1	7

Note: Categories in columns may not sum to total because facilities may be included in more than one category, e.g., computers and semiconductors, or "other" categories that are not included.

Source: Ed Malecki, reactor comments prepared from National Science Board, *Science and Engineering Indicators 1996*, p. 4-47, Table 4-11, for the workshop, "Global Linkages to the Midwest Economy," Chicago, IL, September 18, 1996.

Foreign plants in the U.S. have been found to be more capital intensive, more productive, and to pay higher wages than their domestic counterparts, but plants owned by U.S. multinational companies appear to be more productive than FDI plants.

Malecki suggested a breakdown of the Ohio data by nationality and investment sector for several reasons. First, some recent data on foreign R&D in the U.S. (see table 6) suggest that the nationality of the firm makes a difference. For example, Japanese firms have twice as many R&D facilities in the U.S. as any other foreign group, yet the Japanese facilities are by far the smallest in terms of number of employees per R&D facility. This indicates their facilities operate largely as *listening posts* for technology acquisition or capture. Second, in addressing technology transfer and spillover questions, the data in table 7 suggest it might be necessary to conduct sector-specific analyses. While Japanese firms are represented heavily in the automotive and software sectors, European firms tend to concentrate in chemicals, especially pharmaceuticals.

During the ensuing discussion, Jensen mentioned interesting findings from research using U.S. Bureau of the Census data. Foreign plants in the U.S. have been found to be more capital intensive, more productive, and to pay higher wages than their domestic counterparts, Jensen said, but plants owned by U.S. multinational companies appear to be more productive than FDI plants.

Shaping Local Policy for the Global Economy

The final session of the day was devoted to a panel discussion on the policy implications of an increasingly international-oriented regional economy. How should state and local governments respond to this changing economic environment?

Moderator Donald Haider, professor of the Kellogg School at Northwestern University, opened the discussion by noting that individual cities are increasingly trying to improve their image as potential centers of global commerce. Clearly, cities see the benefits of promoting trade, but the question is do they have effective strategies for accomplishing this goal?

Peter Kresl, a professor of economics at Bucknell University, suggested that a primary reason for cities to be interested in improving their trade opportunities is that their role as economic actors has grown during an era in which globalization and international trade agreements have lessened the independent sovereignty of *nation states* in the trade process. Sweeping efforts to reduce trade barriers across regions, such as in the European Union, have reduced the role of national governments, which have ceded some of their economic, and thus political, authority to regional multinational governments. That has made it increasingly important for cities to establish an independent reputation in order to attract global investment. Kresl suggested that in these new regional economic spaces, cities will serve as the center and that doing this effectively will require cooperation with other cities.

In this vein, European cities appear to have a head start on their American counterparts. For example, the cities of Lyon, France, Barcelona, Spain, and Turin, Italy, have worked together to develop better transit connections between the three cities and in doing so ease the movement of goods. This cooperation takes advantage of each city's economic specialization and provides benefits to all three participants. Kresl suggested that the roots of such cooperative, city-based ventures date back to the Hanseatic League. This type of historical precedence does not exist among U.S. cities.

Turning to strategies for U.S. cities, Kresl noted that there are identifiable economic regions within the nation, as well as across the international borders of neighboring countries, which might be well served by promoting inter-city cooperation. Two such regions are the I-5 corridor which runs from Portland, Oregon, to Vancouver, British Columbia, and the much larger Great Lakes regional economy (see figure 15). Still, neither of these regions has built structures that promote cooperation among their respective cities.

In conclusion, Kresl proposed a strategy to create the type of cooperation that is benefiting some European cities. First, a city government needs to be clear about its aspirations. What is the city's vision for the future? Second, it must define its strategic strengths and weaknesses. Third, it must develop a set of realistic outcomes. Once it has developed its strategic plan from such a process, it will be in a position to become an effective partner with another city or cities. This in turn will enhance the city's potential global advantages.

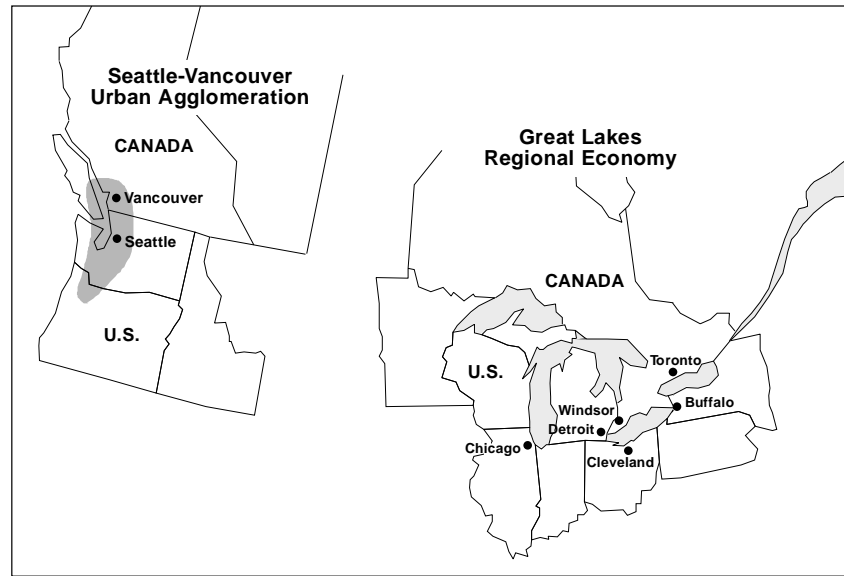
The next panelist was Arnold Weber, chairman of the civic committee of the Commercial Club of Chicago. Paraphrasing former U.S. House Speaker Tip O'Neill, Weber suggested that "if all politics are local, then all economic development is local in a global economy." He went on to propose a variety of strategies that Chicago could employ to improve its image and effectiveness as an international city. At the top of this list is the need for Chicago to develop a marketing strategy for itself. The city has numerous advantages, yet it does not communicate these advantages very well to the outside world. For example, several rankings of U.S. cities have placed Chicago first in terms of its transportation resources (in fact, the preponderant factor for selecting Chicago as a location is its transportation access). Weber argued that this advantage is not properly communicated in a marketing strategy.

Clearly, cities see the benefits of promoting trade, but the question is do they have effective strategies for accomplishing this goal?

Cities' role as economic actors has grown during an era in which globalization and international trade agreements have lessened the independent sovereignty of nation states in the trade process.

There are identifiable economic regions within the nation, as well as across the international borders of neighboring countries, which might be well served by promoting inter-city cooperation.

Figure 15 Cross-Border Regional Economies



Source: Peter Kresl, *Urban Economy and Regional Trade Liberalization*, New York: Praeger, 1992.

Next, Chicago occupies an excellent central location. It is in close proximity to a substantial portion of the nation's population and represents an excellent market. In addition, it has the infrastructure to support international business, particularly when it comes to providing critical service personnel, such as lawyers, consultants, and bankers, who are familiar with international operations. The city is also home to a significant number of foreign consulates.

Another advantage is the availability of high-quality human capital, particularly for highly skilled positions. The local college and university environment is of very high quality and attracts students from around the world. For example, 25% of graduates from the business schools at Northwestern University and the University of Chicago are from foreign countries. Similarly, Chicago's ethnic mix contributes to its flavor as an international city. For example, Weber noted that the city has a larger Polish population than any city other than Warsaw. It has attracted significant numbers of Mexicans and Asians, which has broadened the city's cultural base.

Chicago also benefits from being a major financial center with an international reputation in commodities trading. The importance of this niche in the financial services industry continues to grow, and Chicago is the city most associated with this business throughout the world.

A further advantage that the city has is its cultural institutions. From museums, to the symphony, to the opera, Chicago has exceptional cultural amenities. These are complimented by major league sports and an excellent park system, which enhances Chicago's image as a good place to live and do business.

Weber cautioned, however, that the city must address its negative attributes as well. Chicago has high taxes on business, and wage levels for workers are also well above the U.S. average. In addition, the city is perceived as having high crime rates and significant poverty. Finally, the Chicago metropolitan area does not have in place a structure for encouraging cooperation among local governments. With 1,200 governments in the Chicago metro area, developing a metropolitan-wide strategy for promoting Chicago will be a challenge.

Chicago is the city most associated with the financial services industry throughout the world.

The Chicago metropolitan area does not have in place a structure for encouraging cooperation among local governments.

The provision of outstanding infrastructure and job training will enhance Chicago's international image more than bidding for new business.

Chicago started out as a commodities trading center and has since developed this financial market into a world center for controlling all types of financial risk.

The growth of foreign competition poses a threat to Chicago's dominant position in trading in financial futures and options and commodities.

Weber concluded by suggesting several strategies to improve the city's prospects as an international city. First, a structural entity should be created to reduce fragmentation of resources in the metro area and to help leverage the advantages that the city offers. Weber noted, for example, that Miami and Houston have been very effective in this regard; they have created images and cooperative structures that enhance their respective economies. Chicago needs to clearly promote its relative advantages as a business location. It also needs to develop specific strategies for promoting key segments of the region's economy, including capital goods, financial services, and high technology products. This also means having a strategy for cultivating and promoting intermediaries, such as educational institutions and consultant organizations with a strong international orientation, such as those serving the legal, accounting, and financial services sectors.

Chicago needs to strengthen its overseas presence through strategically located export offices. Finally, Weber said, the city needs to focus its resources to provide the critical goods and services that businesses need to grow, rather than providing incentives and tax abatements to lure new business. The provision of outstanding infrastructure and job training will enhance Chicago's international image more than bidding for new business.

The next panelist, Clark Heston, executive director of the Risk Management Center, addressed Chicago's reputation as a financial center. To begin with, Chicago's financial industry has gone through significant changes, even during the last decade. Chicago is not a financial center like New York or Los Angeles where money management, commercial banking, and stock trading dominate continental activity in these areas. Chicago started out as a commodities trading center and has since developed this financial market into a world center for controlling all types of financial risk.

Heston observed that Chicago's financial services culture is somewhat unique because it is grounded in trading. This being the case, much of the focus of Chicago's financial services is on activity at the major exchanges—the Board of Trade and the Mercantile Exchange. Trading volume at the exchanges has grown impressively, from 664 million trades in 1987 to 1.7 billion in 1994. However, increased global competition has eaten into the Chicago exchanges' market share, which fell from 59% to 36% during this period. At the same time, the number of exchanges worldwide grew from 32 to 107. Clearly, the growth of foreign competition poses a threat to Chicago's dominant position in trading in financial futures and options and commodities. A second threat is presented by the growth in over-the-counter trading, which has also cut into the volume of trading at the Chicago exchanges.

Heston identified three issues that are increasing competition for Chicago. First, there appears to be some interest on the part of traders in trading in local markets. Because of time differences and because local products are tailored to local needs, local markets appeal to some traders, and this erodes interest in trading exclusively in a large centralized market. Second, technology is making it easier to participate in markets throughout the world, again eroding the competitive position of a large central market. Third, the cost of regulatory compliance is higher in the U.S. than in other markets. Heston asserted that developing the most cost-effective and efficient regulatory structures that still protect the security of these markets will need to be a top priority, if the U.S. is to maintain a dominant presence in financial markets. He observed that the Chicago exchanges' primary competition will be Tokyo and London.

Finally, Heston suggested that the Chicago markets also need to explore ways in which they can deliver their services in the most effective manner throughout the world. For example, the GLOBEX system was an attempt to extend the trading hours on the Chicago exchanges to relate better to foreign markets. (GLOBEX was initially set up as a cooperative effort between Reuters, the Chicago Board of Trade, and the Chicago Mercantile Exchange. The CBOT has since withdrawn from the system.) Such innovations need to be tried.

It is important for regions to analyze and recognize trends in the economies of their trading partners, located domestically or abroad.

As regions progressively differ less from each other, comparative advantages will increasingly rest on differences in the quality of the work force.

A final perspective on global trade was provided by Hewings of REAL and the University of Illinois at Urbana–Champaign. Hewings challenged the perception that *international* trade is critical to the well-being of the Midwest economy. He presented evidence from a joint University of Illinois–REAL study that modeled the Chicago metropolitan economy and found that of an estimated \$140 billion in goods exported from the Chicago metro area, \$119 billion was traded to other parts of the U.S., particularly the East and West coasts. Canada accounted for \$11 billion in trade and Mexico for only about \$1 billion. Hewings suggested that this reflects the role of the Midwest as an intermediary in trade. In some cases, the Midwest produces products that are incorporated into other products, which are then sent abroad.

Hewings said that this result should not surprise people. Regions are becoming more dependent on other regions. The important issue is to identify the interconnections that differing production structures encourage. It is important for regions to analyze and recognize trends in the economies of their trading partners, located domestically or abroad. In addition, the fostering of trade tends to promote a more open economy, which in turn leads to a convergence in the industrial structure across regions. As regions progressively differ less from each other, comparative advantages will increasingly rest on differences in the quality of the work force. Hewings suggested that *occupational capital*, defined as having the skilled labor force available to meet the growing occupational demands of a region's economy, could become the most important regional comparative advantage.

Finally, Hewings suggested that, given that Chicago's key trading partners are in the domestic U.S. economy, perhaps the city should stop trying to establish *sister city* relationships with foreign cities, such as Paris, and concentrate on developing its relationships with East Lansing, Michigan, Indianapolis, Indiana, or Madison, Wisconsin.

During the closing discussion, Haider asked whether there was any evidence that trade promotion programs really helped export volume. He noted that such economic development programs were often the first to go when state economies slowed and that few studies had shown that these programs were cost effective. Coughlin noted that work done at the Federal Reserve Bank of St. Louis suggests that export promotion programs do contribute to exports. On the other hand, Jensen observed that Census Bureau research suggests that public export promotion programs are not effective. Other participants observed that while there may be certain forms or structures of export promotion that are ineffective, there certainly are structures that are effective. If that were not the case, exporting firms would not be *paying* for private consulting services that involve export promotion activities.

Participants also highlighted the importance of the regulatory environment and its impact on the ability of industries and firms to compete in international as well as domestic markets. National, state, and local regulations (the latter primarily in the form of taxes) can easily place an industry or location at a competitive disadvantage. Financial markets, which rely heavily on electronic transactions, are seen as particularly vulnerable to an adverse regulatory environment, with the bulk of electronic transactions likely to go to the lowest cost market, whether it be Chicago, London, or Singapore.

Summing Up

An Increasingly Interdependent World Market

An examination of the global linkages to the Midwest economy seems a fitting conclusion to the Chicago Federal Reserve Bank's year-long assessment of the Midwest economy. This workshop delved into issues that only during the last couple of decades have been recognized as important to the region's economic well-being and growth. Increased international trade in goods and services, a surge in foreign investment in the goods and services sectors and the financial sector, and political initiatives that seek to facilitate or exploit the greater interaction and interdependence of the international economy have left an indelible mark on the Midwest economy.

Although it is clear that the domestic market remains the dominant influence on the Midwest's economic condition, the fabric of the Midwest economy has become intricately interwoven with that of the international economy. For continued growth, regional industries look not only to the domestic market, but also to new or expanding markets abroad. This is especially evident when a slowing in domestic demand occurs; at such times in recent years, industry observers, policymakers, and economists have anxiously looked to foreign demand to pick up the slack. Moreover, while it has not been an easy transformation, Midwest industry owes much to the structural modifications in the economy that were forced, in part, by import competition *and* the competitive nature of foreign-owned entities that have become an integral part of the domestic market.

Manufacturing industries (be they producers of intermediate products or final goods), especially those associated with capital goods production, have dominated the Midwest's recent economic revival and expansion in exports. Production agriculture, long the region's most important primary goods producing industry, has also recorded dramatic increases in exports in recent years.

The economic revival that has occurred in the Midwest during the past decade has important underpinnings in the increasingly worldwide scope of markets. Expanded international trade in goods and services, made easier by the reduction of tariff and nontariff barriers under agreements such as the U.S.–Canada FTA and NAFTA, has contributed to Midwest economic growth. At the same time, the region has benefited from rapid economic expansion in emerging markets and continued moderate to strong demand from developed markets around the world.

Arguably the most important development contributing to the Midwest's economic revival has been the critical restructuring of its industrial base during the past ten to 15 years, a restructuring that has enhanced Midwest (and U.S.) industrial competitiveness in international markets, i.e., foreign *and* domestic markets. This characterization of the market is important to understanding the progress made by industry in its drive toward competitiveness. The *international* market can no longer be thought of as the *foreign* market only; for an industry to be competitive in foreign markets, it must also be competitive in its domestic market. Midwest industry's improved competitiveness in international markets owes much to the competitive impact of imports from abroad, technology transfers and competition from foreign direct investment in major Midwest industries, and increased interregional competition within U.S. borders.

International trade is considered a national activity. A country's borders define whether a trade or investment activity is international or domestic. Within the U.S., international agreements and, therefore, the degree of openness of borders, are within the purview of the federal government. Since the late 1940s, the U.S. has engaged in numerous trade agreements

The international market can no longer be thought of as the foreign market only; for an industry to be competitive in foreign markets, it must also be competitive in its domestic market.

National policy actions, whether related to trade or aimed primarily toward influencing the domestic economy, can be expected to have different effects on the various regions of the U.S.

that have dramatically opened the country's borders to trade. Movement toward such policies has surged in recent years. The U.S.–Canada Automotive Trade Agreement was negotiated in the mid-1960s, the U.S.–Canada FTA in 1989, and NAFTA in 1994. Even more important are the eight post World War II multilateral trade agreements, seven of which were negotiated under the auspices of GATT (the first established GATT), the most recent being the Uruguay Round which established the World Trade Organization in 1995.

National policy also influences the rate of domestic inflation, the exchange rate of the dollar relative to other currencies, financial market regulations, agricultural production decisions, and environmental, safety, and health controls. While such national policy actions may be aimed at the domestic economy, they inevitably affect the interaction of the domestic economy with the international economy. The more open the national borders are to trade and financial flows, the more important is the influence of these non-trade-specific national policies on the economy's international involvement.

National policy actions, whether related to trade or aimed primarily toward influencing the domestic economy, can also be expected to have different effects on the various regions of the U.S. As noted during the workshop, the Midwest economy has typically responded well, though not without difficult and comprehensive industrial restructuring, to the relaxation of international trade barriers. The recovery of the Midwest economy during the past ten years and its recent success in international markets are due importantly to the composition of the region's industrial mix, which is heavily oriented toward automotive and capital equipment manufacturing and agricultural production. The appreciation of the dollar exchange rate during the early 1980s and the progress toward lowering trade barriers throughout the 1960s, 1970s, and 1980s encouraged a rapid influx of imports, leading to increased competition for local industries nationwide.

Midwest industry, in particular, responded with a comparatively successful restructuring, which was clearly identified as having an international scope. Foreign direct investment in existing U.S. firms was an important factor contributing to the retention of some midwestern industries, for example, consumer electronics. Foreign financial institutions entered the region's banking market and provided new sources of competitively priced funds.

The automotive industry, heavily concentrated in the Midwest, was profoundly influenced by developments in the international sector. First was the *single market* effect of the 1965 U.S.–Canada auto pact, which promoted harmonization of the industry across the national border. Arguably the most important impact from the international sphere came as a result of international competition in the domestic market, initially from imports and more recently from the transplanting of foreign production (that is, foreign investment) to U.S. locations, in many cases the Midwest. To the domestic industry's credit, it was able to adjust to meet the competition.

Midwest industrial restructuring contributed importantly to a rapid growth in shipments to foreign markets during the late 1980s and early 1990s, a development that occurred despite the fact that the primary markets to which Midwest industry exports (the Americas) faced a dollar exchange rate that was appreciating (not depreciating as is typically thought to be the case).

Agricultural exports, both primary products and processed foods, have also surged in recent years. The Midwest is the heart of feed grain and oil seed production in the U.S.; it is also an important center for the food processing industry. Processed foods are among the fastest growing agricultural exports.

While the federal government determines the nation's international trade and investment policy, individual state and metropolitan areas also have an important role to play in the internationalization of the economy.

Much of the expansion in U.S. exports has occurred in response to growth in emerging markets. Indeed, some estimates suggest that nearly three-quarters of future growth in world trade is expected to arise from such markets. High on the list of import demand by emerging markets are capital goods, machinery and equipment, and the Midwest is well positioned to respond. Recent evidence of NAFTA's impact on market expansion to Mexico suggests that Midwest gains have accrued through an expansion in durable goods manufacturing activity.

Open borders to direct investments have assisted the Midwest in several ways, including the adoption of world-class technologies and modes of business operation. In some cases, technology transfer has occurred through information/communication channels as multinational and midwestern companies that sell worldwide have adopted new standards and processes. In other cases, foreign domiciled firms—both manufacturers and service firms—have relocated operational skills directly to the Midwest. Joint ventures between domestic and foreign firms have also helped domestic firms to invest in cutting edge technologies (e.g., integrated steel mills). Open borders at the national level made this transformation possible; regional amenities and infrastructure may also have contributed.

While the federal government determines the nation's international trade and investment policy, individual state and metropolitan areas also have an important role to play in the internationalization of the economy. In the process of a nation becoming more interdependent with the rest of the world through the reduction of trade and investment barriers, national governments cede some of their economic and, thus, political authority to multinational authorities. Some observers suggest that as a result of this process, the economic role of subnational political jurisdictions, such as states and metropolitan areas, is likely to grow. Indeed, states and metro areas in the Midwest have moved toward becoming hosts and centers for foreign investment and the export of services worldwide—business services, financial services, business travel, and tourism. However, the current model of participating in the expanding international marketplace by states and metro areas is that of interstate or intercity competition. Some observers suggest that the European model of intercity cooperation to promote cities' relative advantages would be a more productive approach, and would in turn help U.S. cities to attract global investment.

There is much more to be understood about the pattern of interregional (domestic and international) linkages and how they are evolving. Clearly, there are many questions left unanswered. However, asking the appropriate questions is more than half the battle. In this spirit, the reasonable questions that need to be addressed include: Are there significant unmeasured interstate and international flows in services as well as manufactured goods? What are the implications of policies that promote distortionary regulations, taxes, and fiscal issues that may be limiting international trade, investment, and labor flows—policies such as different weight and length limits on trucks; different state and local tax regimes; barriers and impediments to skilled labor migration; prohibitions against foreign ownership of property; and trade distortions among states or across international borders, arising from selective tax abatements and restrictions on imports?

It is clear that *international as well as intranational* economic linkages are complex, and becoming more so. The papers and discussions presented at this workshop have shed some light on these linkages. Nonetheless, what clearly emerges from this endeavor is a pattern found all too often. The search for understanding answers some pressing questions and provides some guidance for policy, but it also raises more questions.

About the Workshop

Correspondence related to the September 18 workshop should be directed to conference coordinators, Linda Aguilar, regional economist, and Jack Hervey and Thomas Klier, senior economists, of the Research Department at the Federal Reserve Bank of Chicago. Jack Hervey was the chief author and coordinator of this publication. Participants in the workshop included the following:

Michael Aiken
University of Illinois
at Urbana-Champaign

Jean Allard
Sonnenschein Nath
& Rosenthal

Gerry Aziakou
Agence France Presse

Carlos Barbera*
State of Indiana

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Reuters America Inc.

Paul Conley
Journal of Commerce

Suzanne Cosgrove
Market News Service

Cletus Coughlin*
Federal Reserve Bank
of St. Louis

Tim Coulter
Bloomberg Business News

David Crane
Toronto Star

Art Cyr
World Trade Center

Anna Driver
Dow Jones Capital Markets

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William Edmondson*
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Jeff Edstrom
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Asim Erdilek*
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Jacquelyn Harder
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William Testa*
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**Presenter, discussant,
or moderator*

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Workshop Agenda

The workshop, “Global Linkages to the Midwest Economy,” was held on September 18, 1996 at the Federal Reserve Bank of Chicago, 230 S. LaSalle Street, Chicago, IL 60604.

I. Welcome and Opening Remarks

William C. Hunter, Federal Reserve Bank of Chicago

II. International Trade—Importance to the Midwest

Moderator: *William A. Testa*, Federal Bank of Chicago

- A. Foreign Exports, Domestic Exports, and the Illinois Economy
Presenter: *Philip Israilevich*, Federal Reserve Bank of Chicago
Reactors: *Carlos Barbera*, State of Indiana
Doug Roberts, Michigan Department of Treasury
- B. Exchange Rate Changes Look Different When Viewed from the Midwest
Presenter: *Jack Hervey*, Federal Reserve Bank of Chicago
Reactor: *Thomas Klier*, Federal Reserve Bank of Chicago
- C. U.S. Agricultural Trade and Its Impact on the Midwest Rural Economy
Presenter: *Bill Edmondson*, U.S. Department of Agriculture
Reactor: *Michael Singer*, Federal Reserve Bank of Chicago

III. Regional Perspectives on Trade Agreements

- A. NAFTA’s Potential Impact by U.S. Region
Presenter: *Michael Kouparitsas*, Federal Reserve Bank of Chicago
- B. A Regional Assessment of the Canada–U.S. FTA (Five Years After)
Presenter: *Jane Sneddon Little*, Federal Reserve Bank of Boston
Reactor: *Gary Scott*, Canadian Consulate General, Chicago

IV. Luncheon

Introduction: *Michael Moskow*, Federal Reserve Bank of Chicago

Trade and the Economy: International Linkages in an Open Market

Speaker: *David Walters*, Office of the U.S. Trade Representative

V. Foreign Investment and the Midwest Economy

- A. FDI in Manufacturing in the Southeast and Midwest
Presenter: *Cletus Coughlin*, Federal Reserve Bank of St. Louis
- B. Foreign-Owned Banks in the Midwest
Presenter: *Tim O’Neill*, Bank of Montreal
- C. R&D Activities and Innovativeness of Foreign-owned Firms in Ohio
Presenter: *Asim Erdilek*, Case Western Reserve University
Reactor: *Ed Malecki*, University of Florida

VI. Panel Discussion: Shaping Local Policy for the Global Economy

Moderator: *Don Haider*, Northwestern University

- A. Urban Policies for the Global Economy
Presenter: *Peter Kresl*, Bucknell University
- B. Chicago as an International City
Presenter: *Arnold Weber*, Northwestern University
- C. The Globalization of Midwest Financial Markets
Presenter: *Clark Heston*, Risk Management Center
- D. A Regional Perspective
Presenter: *Geoffrey Hewings*, REAL and the University of Illinois at Urbana–Champaign

About the Project

The Federal Reserve Bank of Chicago is undertaking an extensive analysis of the Midwest economy. The goal of the project is to understand the Midwest's turnaround in economic performance since the early 1980s. In the Seventh Federal Reserve District—which includes Iowa and large portions of Illinois, Indiana, Michigan, and Wisconsin—unemployment rates are, at the time of this writing, lower than at any time since the 1977–78 period, as well as being below the national average.

The Midwest project will involve a series of workshops and research studies which will be carried out by Federal Reserve analysts and other researchers from the region. An advisory board representing a cross-section of Midwest leaders will provide guidance for the project (see back page). Workshops scheduled for 1996 will consider (1) the economic performance of the broad Midwest economy and the transformation of its manufacturing industries; (2) the rural economy of the Midwest; (3) labor force training and education; (4) global linkages with the region's economy; and (5) tax, spending, and regulatory influences on regional performance. The findings of the workshops will be communicated through a series of publications and broad public forums. The project will conclude with a conference and publication toward the end of 1996.

At the Bank, the “Assessing the Midwest Economy” project is being conducted through a cooperative effort of the Office of the President, Michael H. Moskow, president; Research Department, William C. Hunter, senior vice president and director of research; and Community and Information Services, Nancy M. Goodman, senior vice president.

Inquiries should be directed to William A. Testa, senior economist and assistant vice president, Research Department, or James Holland, public affairs officer.

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