
Will the Tenth District Catch the Asian Flu?

By Ricardo C. Gazel and Russell L. Lamb

Recently, a number of Asian economies have been roiled by financial problems, including devaluations of their currencies on international markets and sharp declines in the market valuations of publicly traded companies. The recent problems in Asia have led many analysts to sharply reduce their forecasts for Asian economic growth over the next few years and, consequently, to expect exports to Asia either to fall sharply or face stagnant growth until these problems are resolved. Lower growth in Asian exports in turn could slow growth in the U.S. economy.

While the impacts of Asian financial turmoil on the United States have been widely discussed and studied, few analysts have looked closely at the likely impact on the Tenth District economy. Two important sectors of the Tenth District economy are likely to be affected by the Asian economic crisis: manufacturing and agriculture.

District manufacturing activity is concentrated in several industries that could be negatively affected by the Asian crisis, especially electronics

and food processing. Moreover, manufacturing activity has risen sharply in Tenth District states in recent years and manufacturing employment now accounts for almost 13 percent of total employment in the district, making declines in manufacturing activity potentially serious for the district.

Another important sector in the Tenth District economy is agriculture, which accounts for a large share of economic activity in some district states. Moreover, agriculture is heavily dependent on exports to support demand for its products and boost prices. Recently, agricultural exports have boomed and Asian countries have been important customers, leading most analysts to be concerned about the impact of the Asian crisis on U.S. agriculture.

This article examines the negative impacts of the Asian financial turmoil on the Tenth District economy and finds that, while the overall impact of Asia on the district economy is likely to be moderate, some segments of the economy could be hurt significantly. In particular, some important manufacturing sectors could suffer, such as electronic and electric equipment, instruments and related products, and industrial machinery and equipment. In agriculture, specific commodities such as wheat, soybeans, and red meats are also

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Table 1
DEPRECIATION IN ASIAN EXCHANGE RATES

	Percent change from:		
	July 1, 1997	Dec. 31, 1997	July 1, 1997
	to Dec. 31, 1997	to May 1, 1998	to May 1, 1998
Indonesia	-55.8	-31.2	-69.6
Korea	-47.5	26.7	-33.5
Malaysia	-35.2	5.7	-31.5
Philippines	-34.5	.6	-34.9
Thailand	-47.6	21.2	-36.5
Japan	-11.9	-1.9	-13.6
China	.1	.4	.5
Hong Kong	0	0	0
Taiwan	-15.2	-.8	-15.8
Singapore	-15.4	7.0	-9.5

Source: Board of Governors of the Federal Reserve System.

likely to be affected by the Asian crisis as export demand from Asian countries shrinks, putting downward pressures on prices.

The first section of the article summarizes the recent developments in Asian financial and equity markets, focusing on those countries that have had the most severe problems or present the greatest risk for the United States. The second section discusses the impact of the crisis on district manufacturers by examining the share of district output that is exported to Asia and the major export markets for district goods. The third section examines the impact on agriculture, focusing on the importance of Asian markets for U.S. agricultural exports generally and on exports of major agricultural commodities individually.

I. HOW SEVERE IS THE ASIAN CRISIS?

The recent turmoil in Asia has been widely dis-

cussed in both the popular and business press. Yet the magnitude of the problems confronting these economies and, more important, the varieties of experience across Asia are perhaps still not fully appreciated. To determine the impact on Tenth District businesses, it is important to understand which economies have been severely affected, which economies remain susceptible to currency or other financial problems, and the sources of remaining risks in Asia.

The magnitude of currency and financial market volatility in various Asian countries is shown in Table 1. Five countries have undergone sharp declines in currency and equity values and have been singled out as “severely distressed”—Indonesia, Korea, Malaysia, the Philippines, and Thailand. These countries are referred to as the “Group of Five” in this article. It is important to note that while most of these countries experienced sharp declines in the value of their currency (relative to the dollar) between mid-1997

Table 2
DEPRECIATION IN ASIAN STOCK INDICES

	Percent change from:		
	July 1, 1997 to Dec. 31, 1997	Dec. 31, 1997 to May 1, 1998	July 1, 1997 to May 1, 1998
Indonesia	-45.4	14.5	-37.0
Korea	-51.6	11.9	-45.8
Malaysia	-45.7	6.2	-42.3
Philippines	-32.4	16.7	-21.1
Thailand	-35.7	12.7	-27.5
Japan	-24.4	2.5	-22.6
China	1.5	13.7	12.0
Hong Kong	-28.6	-3.5	-31.0
Taiwan	-9.5	1.9	-7.7
Singapore	-13.8	-8.9	-21.3

Source: Board of Governors of the Federal Reserve System.

and the beginning of this year, the values of most of the currencies have rebounded in recent months. The sharpest decline in currency valuations has occurred in Indonesia, where the value of the rupiah has plunged 70 percent against the dollar since mid-1997. South Korea, Malaysia, the Philippines, and Thailand have posted currency declines ranging from 30 to 35 percent since July 1, 1997.

The Group of Five has also undergone sharp declines in domestic equity values. The sharpest declines in equity values have been in Korea and Malaysia, where the stock market has declined almost 45 percent since the middle of 1997 (Table 2).¹ However, other countries' stock markets have plunged by almost as much, with the Indonesian market losing 37 percent of its value and the Thai stock market declining by almost 28 percent. Equity values in the Philippines are one-fifth below their level in mid-1997.

While the Group of Five has experienced the sharpest declines in currency and equity values in Asia, perhaps an even more important key to understanding the impact of the Asian turmoil is Japan. Japan represents a much larger market for U.S. agricultural and manufacturing exports than the Group of Five economies, and is a much more threatening competitor for U.S. companies in the U.S. and world marketplaces. The Japanese yen was off from its mid-1997 level by almost 14 percent as of May 1. Equity values in Japan fell in the second half of last year but have regained some of that ground in the first half of 1998, and were about 23 percent below their mid-1997 levels as of May 1.

Another group of Asian countries has experienced less severe currency and equity devaluations to date but could be imperiled in the future if the Asian crisis persists. These "Group of Four" countries—China, Hong Kong, Taiwan,

Table 3
GDP GROWTH PROSPECTS FOR ASIA
(Amounts in percent)

	1990-96	1997	1998
Japan	2.3	.9	.0
Indonesia	8.0	5.0	-5.0
Korea	7.7	5.5	-.8
Malaysia	8.8	7.8	2.5
Philippines	2.8	5.1	2.5
Thailand	8.6	-.4	-3.1
China	10.5	8.8	7.0
Hong Kong	5.0	5.3	3.0
Taiwan	6.3	6.9	5.0
Singapore	8.5	7.8	3.5

* Average real GDP from 1990 to 1996.

Source: International Monetary Fund, May 1998.

and Singapore—should be considered potential victims of the Asian crisis. Taiwan and Singapore have suffered currency devaluations of 15.8 percent and 9.5 percent, respectively, since mid-1997. In contrast, Hong Kong, whose currency is fixed against the dollar, has seen a 31 percent drop in equity values. In China, equity values have actually risen somewhat since mid-1997. The experience of these countries has varied, making it difficult to discern a clear pattern.

These recent financial problems have led analysts to lower their forecasts of economic growth in most Asian countries (Table 3). While many of these economies have posted double-digit growth for many years, most analysts now expect them to be stagnant at best or to shrink in 1998. Among the Group of Five, for example, the Indonesian economy could see output fall by as much as 5 percent. On the other hand, output could grow by 2.5 percent in the Philippines, a much slower growth rate than in previous years, but still an expansion. For Group of Four countries,

growth prospects are better, although growth will moderate from its pace in recent years. Japan's economy is expected to be essentially flat in 1998. Lower domestic growth associated with weaker exchange rates will result in lower import demands, including U.S.-produced goods.

II. HOW WILL THE ASIAN CRISIS AFFECT DISTRICT MANUFACTURERS?

The recent financial turmoil in Asia is likely to have substantially different impacts across district manufacturing sectors and across district states. Although the average impact is expected to be small, and smaller than for the nation as a whole, some district manufacturing sectors, such as electronic and other electric equipment and food processing, are more vulnerable since they depend more heavily on exports to Asia.² Similarly, the Asian crisis is likely to have a larger impact on some district states, such as Wyoming and Colorado, which are relatively

more dependent on Asian markets. In addition to seeing reduced export demands from Asia, district manufacturing may also face stronger competition from Asian products within U.S. domestic markets.

This section uses manufacturing export data to explore the potential impacts of the Asian financial turmoil across district manufacturing sectors and district states. The data come from the State of Origin of Movement (OM) series published by the Massachusetts Institute of Social and Economic Research, hereafter the MISER data. The OM series track the point of origin (state) from which a shipment started its journey to the port of export.³

How important is the manufacturing sector for the district economy?

Manufacturing activity has played an important role in the district's economic performance since the 1991 recession, due partially to increased export demand. During the period from 1991 to 1997, district manufacturing employment grew a total of 5.3 percent. The 59,000 manufacturing jobs added in the district during this time represented 40 percent of the net job gains in manufacturing in the entire country.⁴ Currently, the manufacturing sector accounts for 13 percent of total district nonagricultural employment.⁵ The increased role of manufacturing in the district economy suggests that a decline in orders from foreign countries, without an increase of similar magnitude in domestic demand, will hurt the district economy more than in the past.

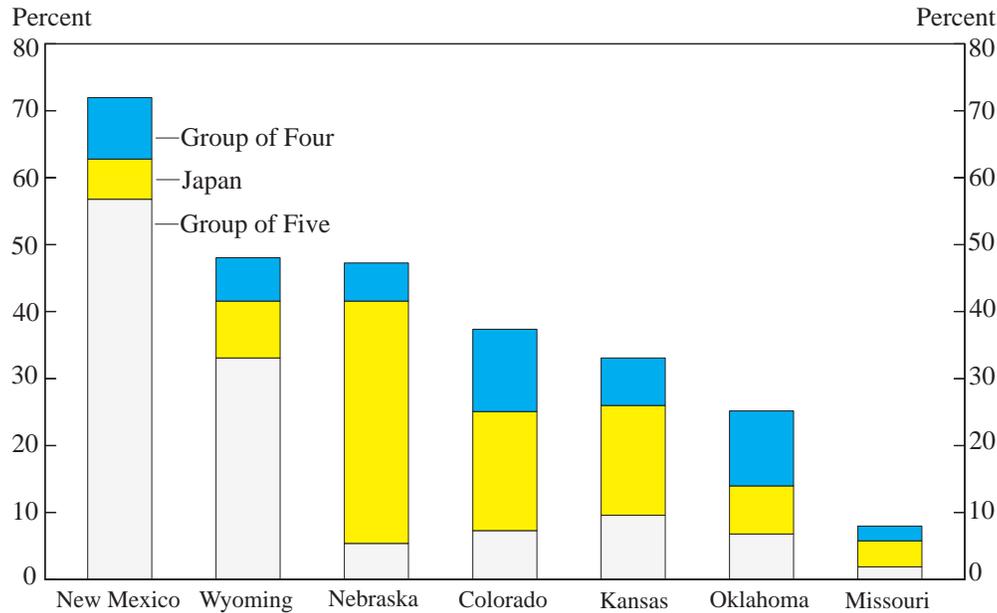
The relative economic importance of manufacturing varies substantially across district states, however, suggesting that declining export demand is likely to impact states with varying degrees of intensity. For example, manufacturing jobs accounted for 16.1 percent of total nonagricultural employment in Kansas in 1997 but accounted for less than 5.0 percent in Wyoming. However, manufacturing employment growth

has also been unequal among district states, with nontraditional industrial states registering higher growth rates than traditional manufacturing states. From 1991 to 1997, manufacturing employment grew 15 percent in Wyoming and Nebraska, but declined 1.2 percent in Missouri.⁶ It is also important to note that exports' share of total output and the contribution of increased export demands to recent growth of manufacturing activity varied substantially across district states. For example, in Colorado manufacturing exports increased substantially, from 9.3 percent of total output in 1990 to over 13 percent in 1995. Meanwhile, manufacturing exports as a share of total output in New Mexico declined from 4 percent in 1990 to 3 percent in 1995. Moreover, the shares of manufacturing exports going to Asian countries also varied substantially from state to state within the district, as discussed below.

Asia accounts for a relatively large share of district manufacturing exports

Asia represents an important export market for district manufacturing plants. Slightly less than one-quarter of district manufacturing exports in 1996 went to ten countries in that region, with Japan accounting for close to half of that amount (Chart 1). More important perhaps is the fact that a large share of district manufacturing exports went to Asian countries severely affected by the recent financial turmoil. For example, the Group of Five accounted for one-third of district manufacturing exports to Asia. The remaining district exports to Asia, around one-quarter, went to the Group of Four, countries which were less affected by the recent financial crisis. Led by strong exports to Japan, all district states except Missouri shipped at least one-fourth of their manufacturing exports to Asia in 1996. However, with the exception of New Mexico and Wyoming, all other district states sent less than 10 percent of the value of their exports to the Group of Five.

Chart 1
 PERCENTAGE OF STATE MANUFACTURING EXPORTS
 TO SPECIFIC ASIAN COUNTRIES, 1996



Source: MISER.

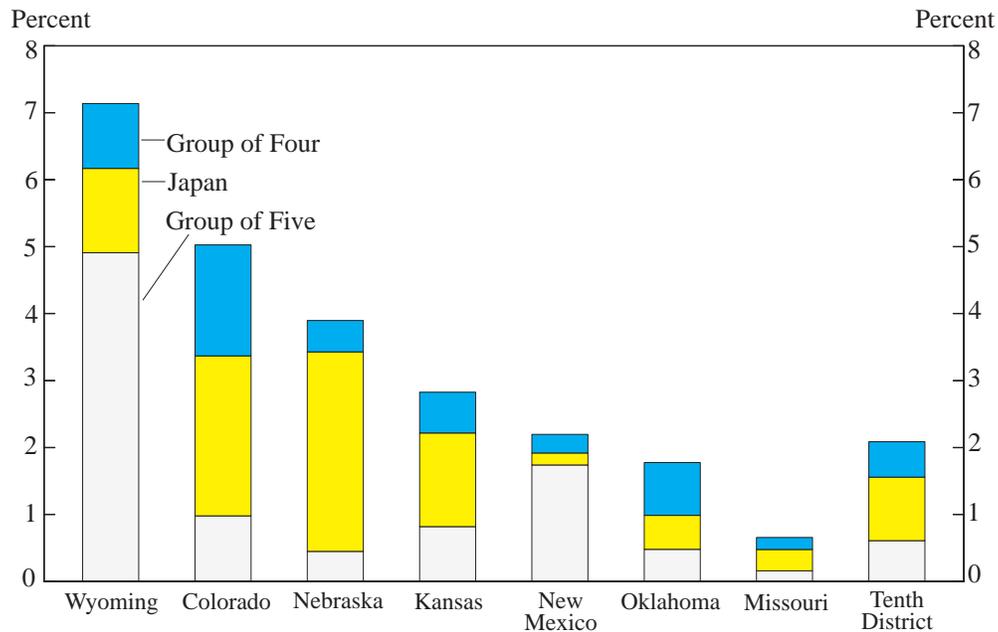
Looking simply at the value of exports going to Asia, however, does not tell the whole story of how vulnerable a state's manufacturing sector may be to the recent financial turmoil in that region. It is also significant to consider exports compared with the total value of manufacturing output. In 1996, for example, New Mexico shipped nearly two-thirds of its exports to the Group of Five, while Wyoming sent one-third of its exports to those countries. But exports represented only 3 percent of output from New Mexico plants, compared with 15 percent in Wyoming. Consequently, exports shipped to the Group of Five in recent years represented only 1.7 percent of the value of manufacturing output in New Mexico compared with 5.0 percent in Wyoming. Among all district states, Missouri

showed the lowest share of exports to the Group of Five as a percentage of total output, only 0.2 percent on average. Chart 2 shows the shares of manufacturing output exported to different Asian countries by state in 1997.

Which manufacturing industries depend most on Asia?

Some district manufacturing sectors are more dependent than others on exports to Asia. For example, close to 30 percent of the district exports of leather and leather products in 1996 went to the Group of Five, and two-thirds of the exports of food and kindred products were shipped to the ten Asian countries. In contrast, only 6.0 percent of transportation equipment

Chart 2
STATE EXPORTS TO SPECIFIC ASIAN COUNTRIES IN 1996
Percent of total manufacturing output



Source: MISER.

exports went to the ten countries, with less than 1.0 percent going to the Group of Five (Chart 3).

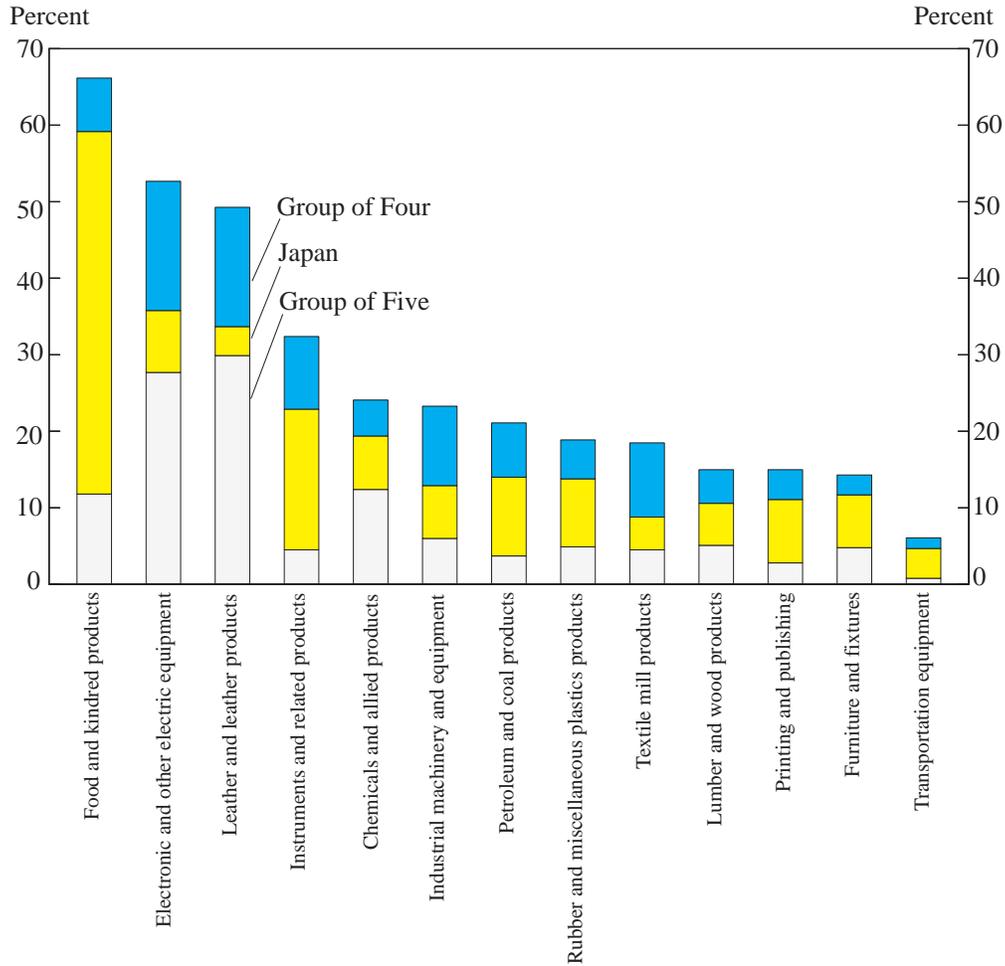
While the impact of the Asian crisis will depend on the share of total exports going to Asia, the share of total output exported is also a key variable, and this share varies substantially across industries. The share of total output accounted for by exports to Asia ranges from a high of 7 percent in the leather industry to as low as 0.2 percent in the petroleum and coal sector (Chart 4). Additionally, some sectors depend more on exports to those Asian countries most severely affected by the recent financial turmoil, and thus are more likely to be affected by the financial crisis in that region. For example, exports to Asia as a share of total output are simi-

lar in two district manufacturing sectors, electronic and electric equipment and instruments and related products. However, while most exports of instruments and related products went to Japan, almost half of electronic and electric equipment exported was shipped to the Group of Five, making electronic and electric equipment far more vulnerable to the current Asian crisis (Chart 4).

Competition in the domestic markets

In addition to softening export demand for some products manufactured in the district, the Asian crisis will also intensify competition from Asian products within the United States. Faced with lower income growth at home and a sub-

Chart 3
 PERCENTAGE OF DISTRICT EXPORTS TO ASIA BY SECTOR IN 1996



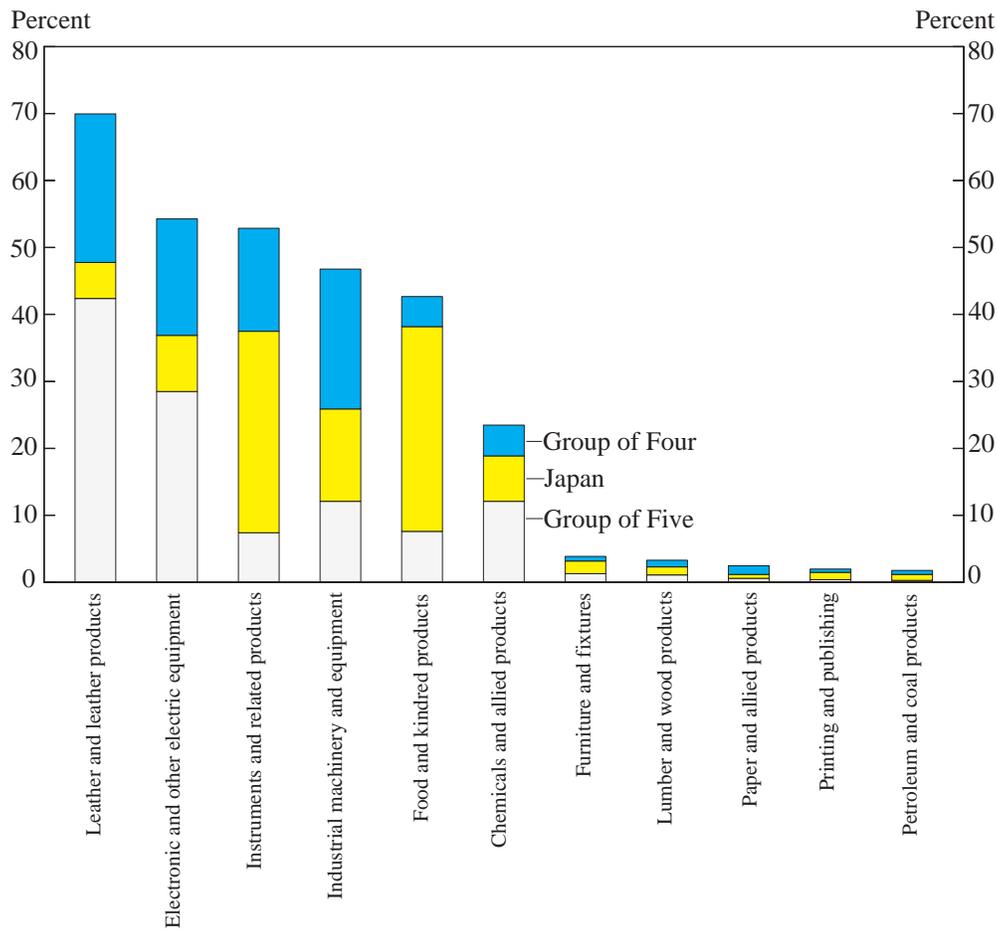
Source: MISER.

stantial decline in domestic wealth, many producers in Asia will price their products more aggressively in U.S. markets. In addition, the recent strong devaluation of their currencies vis-a-vis the U.S. dollar makes their products cheaper in the United States, further enhancing their competitive advantage. Thus, the United States, historically a large market for Asian

exports and currently enjoying strong economic growth, is likely to experience increasing competition from Asian imports.

Some limited evidence of declining import prices at the national level already exists, suggesting that district producers of similar goods may face more competition within domestic

Chart 4
EXPORTS TO ASIA AS A SHARE OF SECTOR TOTAL OUTPUT IN 1995



Source: MISER.

markets in the near future.⁷ The Bureau of Labor Statistics reported that the U.S. Import Price Index fell 1.2 percent in January and an additional 0.8 percent in February. For the 12 months ending in February, the Import Price Index fell 6.1 percent. Part of the decline in import prices was due to falling petroleum prices. However, the 0.6 percent decline in nonpetroleum import

prices in January was the largest monthly decline in the last five years. This index fell another 0.3 percent in February.

Besides the general U.S. Import Price Index, The Bureau of Labor Statistics also reported additional indexes of import prices for selected categories of goods and for import prices from

specific countries, most of them declining in February. For example, import prices for machinery, electrical equipment, TV image, sound recorders, and parts fell 0.9 percent in January and 0.6 percent in February. Similarly, import prices fell 0.7 percent for products of the chemical or allied industries in February after a 1.3 percent decline in January. In contrast, import prices for vehicles, aircraft, vessels, and associated transport equipment were flat in February, after a small 0.1 percent decline in January. These declining prices for imported goods competing with similar ones produced in the district will certainly put pressure on the manufacturing sector.

The U.S. Import Price Indexes by place of origin also registered declines in February and January. Prices for imports from some Asian countries (Hong Kong, Singapore, South Korea, and Taiwan) fell 5.9 percent for the year ended in February. This index has been declining steadily since October 1997, with monthly declines of 1.2 percent in November, 0.8 percent in December, 1.3 percent in January, and 0.2 percent in February. In other words, most of the decline for the last 12 months took place in the last four months, after the Asian financial turmoil started.

While U.S. producers will certainly face price pressures from cheaper Asian products, the impact on Tenth District producers will likely be limited, since most manufacturing output in the district is in sectors for which U.S. imports from Asia are small. For example, the district transportation sector is often cited as being susceptible to strong competition from Asia, and transportation accounted for almost one-fifth of district manufacturing output in 1995. However, most U.S. imports from Asia in the transportation sector are automobiles, while most district transportation output is in aircraft, and the two do not compete with each other.

In summary, while exports have become increasingly important for the district manufacturing sector over the last few years, the contribution of

exports to total manufacturing production in the district is still small.⁸ Considering that exports accounted for around 9 percent of the district manufacturing output in 1996, exports to Asia (all ten countries) represented only 2.1 percent of the district's total manufacturing output in 1996. Moreover, those economies which have been most severely impacted by the Asian crisis are even less important to district manufacturing. Exports to the Group of Five accounted for just 0.6 percent of the total value of all manufacturing goods shipped by district plants in 1996. It is also important to note that import prices have been declining and district producers may face more competition from Asian manufacturing goods within domestic markets. The small share of district manufacturing output sent to Asia will result in a modest impact on district manufacturers.

III. HOW WILL THE ASIAN CRISIS AFFECT DISTRICT AGRICULTURAL PRODUCERS?

While Asia seems likely to have only a modest impact on the district's manufactured exports, the impact could be greater for district agriculture. Asia is a big market for the region's abundant production of grain and meat. Asia will likely cut back on imports of U.S. agricultural products, although by how much remains uncertain. Those cutbacks could push down U.S. agricultural prices and reduce income for district farmers over the next few years. Understanding the potential impact of Asia on markets for agricultural commodities and products is therefore crucial for producers, lenders, and policymakers.

In gauging the impact of the Asian crisis on district agriculture, two questions arise: How important is the Asian market to district agriculture? And, what impacts are likely for individual commodities and products? Asia is a critical market for district agriculture, but a few countries account for the lion's share of agricultural exports to Asia, with Japan playing an especially important role. Moreover, the importance of

Asia ranges widely across agricultural commodities. Recognizing these differences across agricultural products and individual countries is crucial to understanding the potential impact on the region's agricultural sector.

Asia accounts for a large share of district food and agricultural exports

Asia is a critical export market for Tenth District agriculture. While detailed information is available for exports of manufactured food products, detailed information on agricultural exports of bulk commodities is not available at the state level.⁹ However, the extensive data available on U.S. agricultural exports provide good clues on state exports. Since agricultural commodities are, by definition, nearly perfect substitutes for each other, it is reasonable to assume that states share equally in exports of bulk commodities. State-level data on commodity production can be used to divide the nation's agricultural exports among the states. Such an approach can give a fairly accurate guide to district agriculture's vulnerability in the current Asian crisis.

The district has two major stakes in the Asian food market. The first stake represents sales of processed food products, such as beef or pork. While technically classified as part of manufacturing, it is nonetheless useful to discuss food-product sales here, since falling sales of products like meat have broader implications for district agriculture. The second stake represents sales of bulk commodities, such as wheat or corn. The district produces an abundance of both food products and bulk commodities. Evidence suggests that both bulk commodities and processed food items could be hurt by the Asian crisis.

The Asian crisis has put roughly half the district's combined sales of food and agricultural products at risk. The district exports more than \$10 billion in food and agricultural products (Chart 5). About \$7 billion is in the form of bulk

commodities, with the remainder in processed foods. Asia is the leading destination for the region's bulk grains, accounting for about 43 percent, or \$3.2 billion, of total sales abroad. It is even more important to exports of processed food, accounting for two-thirds of such sales, or roughly \$2 billion (Chart 6).

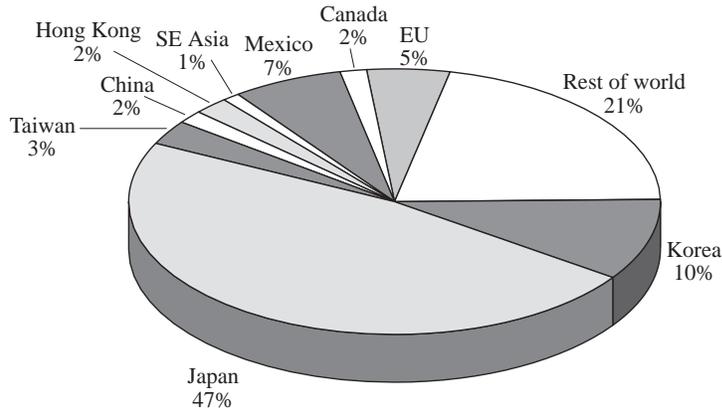
While all of Asia accounts for over 40 percent of total U.S. agricultural exports, not all countries are equally important. The Group of Five accounts for a relatively small share of agricultural exports to Asia. Indonesia, Thailand, the Philippines, and Malaysia, for example, account for less than 5 percent of exports to Asia combined. On the other hand, Korea accounts for over 15 percent of agricultural exports to Asia. Likewise, the Group of Four economies are not a huge market for our agricultural products, although China and Taiwan account for about 12 percent of our bulk exports to the region.

In spite of the relatively small share of exports accounted for by the most severely affected countries, the problems there do set off alarm bells, since food demand in those countries may suffer disproportionately as incomes fall. Economic research has shown that as incomes rise in low-income countries, consumers devote much of the increased income to raise the quantity and quality of food they consume. Conversely, even moderate declines in income may translate into a large drop in food consumption.

While the Group of Five economies account for a relatively small share of agricultural exports, Japan is a huge market for U.S. agricultural products. Japan accounts for about 17 percent of total exports of bulk commodities from the Tenth District and over 40 percent of total exports of processed food items. Of course, Japan has not experienced the kind of currency or stock market declines that the Group of Five countries have experienced. Moreover, the impact of the problems in Japan is likely to be muted for other reasons. Since Japan is a mature,

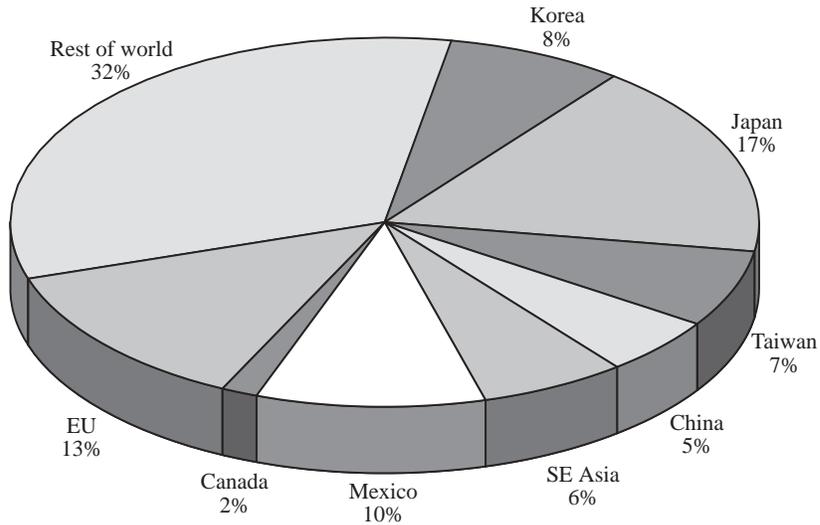
Chart 5

TENTH DISTRICT SIC 20 EXPORTS BY DESTINATION



District SIC 20 Exports = \$3 billion

TENTH DISTRICT BULK EXPORTS BY DESTINATION

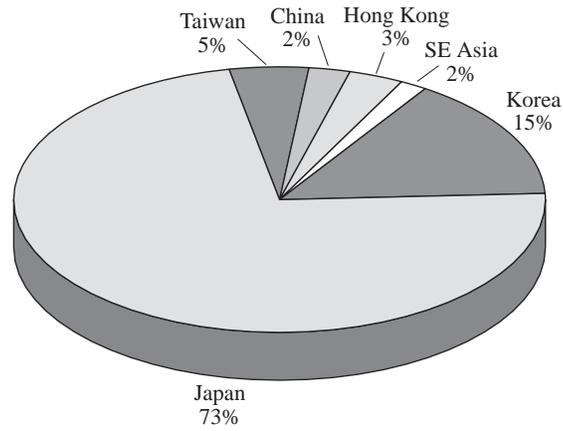


District Bulk Exports = \$7.2 billion

Source: U.S. Department of Agriculture.

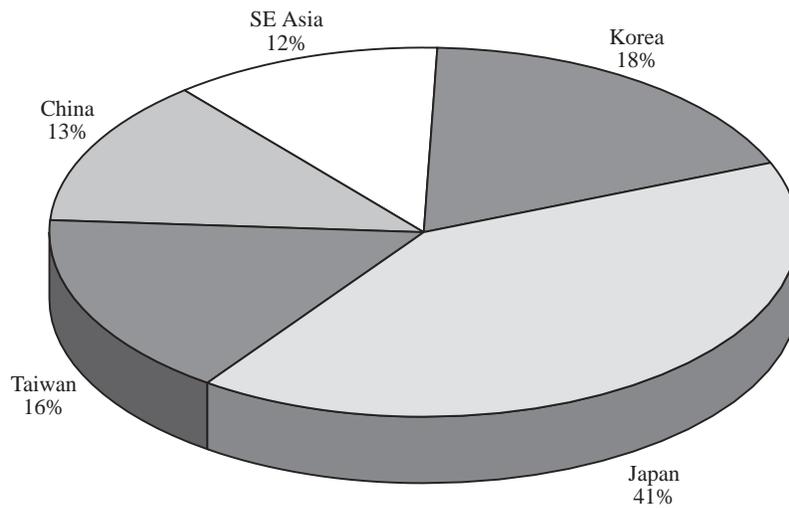
Chart 6

TENTH DISTRICT SIC 20 EXPORTS TO ASIA



District SIC 20 Exports to Asia = \$1.9 billion

TENTH DISTRICT BULK EXPORTS TO ASIA



District Bulk Exports to Asia = \$3.2 billion

Source: U.S. Department of Agriculture.

wealthy economy, a moderate decline in incomes is not likely to translate into a sharp decline in food consumption. At least for now, the Japanese market for U.S. agricultural goods does not appear to be at risk in the current Asian crisis.

Nonetheless, the dominant role of Japan in Asia clearly calls attention to the importance of containing the economic crisis in Southeast Asia. If the economic crisis spreads to Japan and turns stagnation into recession there, then the impact on district agriculture will compound correspondingly. The threat of such contagion poses one of the most pressing concerns in the Asian crisis, both for agricultural exports and the broader economy.

Which agricultural commodities are likely to be affected by Asian problems?

While Asia appears to have important implications for overall agricultural trade, the impacts are likely to vary across products for several reasons. First, some products are more dependent on export markets, making any change in export demand more important. In addition, some products are heavily dependent on Asia as their primary export market; so even if exports are not a large share of production, changes in Asian demand will become important for those products. Within Asia, some countries figure prominently as export markets for some crops, making the impact of problems in those markets troublesome.

In general, the economic slowdown in Asia will hurt commodities and food products whose demand in Asia is most sensitive to changes in income and prices. For example, studies show that demand for processed foods, such as red meats, tends to be much more sensitive to changes in income than demand for staples, such as cereal grains. In addition, crops that serve as feedstuffs to the Asian livestock industry could also be somewhat more vulnerable, as consumers there cut back on meat consumption overall. Therefore,

it is useful to assess the outlook in terms of three broad categories of food and agricultural products: meat products, feedstuffs, and food grains.

Meat products. Although exports account for a relatively small share of total red meat production, the district still exports billions of dollars' worth of red meat products to Asia, mostly beef and pork. However, most district meat exports go to Japan, where the Asian crisis will probably have the smallest impact on meat consumption, and this will probably mitigate the impact on red meat exports to some extent.

While a relatively small share of total U.S. red meat output is currently exported, Asian countries are the dominant buyers (Table 4). Japan alone accounts for about one-half of our exports of red meat. Korea, a country that has already suffered serious financial problems, accounts for another 8 percent. So despite accounting for a relatively small share of exports in total production, the Asian countries still represent a huge market. Thus the current crisis could still have a big impact on meat prices.

While meat exports are only 6 percent of total U.S. meat production, export markets are much more important from an overall perspective. Since these data measure exports by volume, not value, they likely understate the importance of exports for beef. The district tends to export higher valued beef products, especially to Japan. These higher valued beef cuts account for a large share of the retail value of the beef carcass, and thus declines in the demand for these products tend to have a large impact on the price of slaughter cattle. Indeed, many livestock analysts have attributed the recent weakness in cattle prices in part to the effects of the Asian crisis.¹⁰ The impact of Asia's problems on meat prices could be accentuated by current trends in meat production. Supplies of beef and pork on the market right now are relatively large, and prices sagged during the first quarter of 1998; so a further significant drop in exports could cause prices to fall further.

IMPORTANCE OF FARM COMMODITIES IN TENTH DISTRICT STATES

District states differ significantly in terms of the importance of various crops in total agricultural production. For example, in Colorado cattle are by far the most important component of the farm economy, and crops contribute far less to total production. In Kansas, on the other hand, output is more

evenly divided between production of crops and cattle. In Nebraska, corn and cattle dominate the composition of agricultural output. Such variations are important in determining the impact of the Asian financial crisis, since not all products will be affected equally by events in Asia.

Table A1

VALUE OF PRODUCTION

\$1,000

	1994-97				1994-96	
	Corn	Wheat	Soybeans	Sorghum	Cattle and calves	Hogs
Colorado	357,902	372,444	0	19,069	1,169,088	124,871
Kansas	941,836	1,371,172	482,068	644,229	2,213,075	259,470
Missouri	784,788	187,458	1,041,509	107,985	717,823	572,592
Nebraska	2,940,795	312,135	847,198	179,856	2,475,612	748,765
New Mexico	41,055	22,842	0	18,641	338,005	2,346
Oklahoma	67,810	500,362	49,751	54,566	1,229,450	189,549
Wyoming	19,617	29,285	0	0	371,083	11,132
Tenth District	5,153,802	2,795,698	2,420,526	1,024,346	8,514,138	1,908,724

Source: U.S. Department of Agriculture.

This makes developments in Japan even more important for meat markets than the actual shares of meat exported to that country might suggest.

Feedstuffs. District-grown feedstuffs, especially corn and soy meal, are subject to the same dampening effects from Asia as meat exports. As their incomes fall, Asian consumers will cut back on both foreign and domestically produced meat products. Many livestock products pro-

duced in Asia are fed district corn and soy meal—feedstuffs that are costly to grow in Asia. With district grain bins full after last year's abundant harvest, crop prices are vulnerable to any reductions in foreign demand. Nonetheless, some economic forces could act to cushion the blow to district feedgrain producers.

While corn is a primary feed, the district may not be hurt significantly by Asia since most of

Table 4

U.S. AGRICULTURAL EXPORTS

	Wheat	Red Meat	Corn	Soybeans
Share of:				
Production exported	41	6	19	32
Exports shipped to:				
Asia	36	67	36	43
Japan	13	54	23	16
Korea	6	8	2	6
China	1	3	1	6
Other Asia	16	2	8	14
Production exported to:				
Asia	15	4	7	13
Japan	5	3	4	5
Korea	2	0	0	2
China	0	0	0	2
Other Asia	7	0	2	4

Note: Red meat includes beef and pork. Corn export shares include other feedgrains.
Source: U.S. Department of Agriculture.

the corn grown here is fed to domestic livestock herds. Only 19 percent of total corn production is exported, but Asia is a fairly important market. All of Asia accounts for more than one-third of U.S. corn exports, and Japan alone imports over one-fifth of all U.S. corn exports. On the other hand, the more seriously troubled Asian economies account for a very small share of our corn exports. The most serious implications for corn exports would arise only if the Japanese economy were to suffer from spillover effects of the Asian crisis.

Exports of soybeans, and of soy meal in particular, may be more at risk in the current Asian crisis. Soybeans are fairly dependent on export demand, and a larger share of total soybean production is exported than is the case for corn and nearly as large a share as for wheat. Moreover, Asia is a large market for U.S. exports of soybeans, and soy exports are fairly evenly distributed

across Asian economies. Japan accounts for 16 percent of soybean exports, China and Korea account for roughly 6 percent each, and other Asian economies account for about 14 percent of soybean exports. This distribution suggests that exports of soybeans could fall as the Asian crisis persists or if it spreads more broadly across Asia.

Except perhaps in Japan, falling incomes in Asia will lead to a falloff in demand for red meat. As consumption of meat products falls, the (derived) demand for soybean meal as animal feed will slacken as well, perhaps leading to a sharp decline in demand for soybean products. Any reduction in soybean prices would have a significant impact on district farmers, since soybeans have been gaining in importance among district producers, reflecting the impact of the Freedom to Farm legislation passed by Congress in 1996.

Food grains. Wheat and other food grains may

endure the smallest relative cutback in Asian consumption. Any reduction will be felt keenly, though, since exports are so important to district wheat growers to support prices. As shown in Table 4, more than 40 percent of the district's wheat crop has been exported on average over the past five years.¹¹ Asia is a critical market for U.S. and district wheat growers, accounting for roughly 36 percent of total U.S. exports of wheat. Within Asia, Japan is the dominant market, accounting for 13 percent of total U.S. exports. The Philippines is also an important market for U.S. wheat exports, accounting for about 10 percent over the past five years. The other Asian economies represent a relatively small share of the U.S. export market. Taken together Indonesia, Thailand, and Malaysia—three of the severely troubled economies—account for only 2 percent of U.S. wheat exports.

Since wheat is so dependent on export markets, any drop in exports could have a big effect on wheat prices. The Philippines have been racked by the recent turmoil and could see a sharp drop in economic activity and incomes. A drop in

incomes there would likely lead to some substantial decline in food purchases, affecting demand for U.S. wheat. A more important concern at this point, however, is Japan. If the Asian crisis spreads there, wheat exports are likely to fall, pushing down prices for U.S. wheat substantially.

CONCLUSIONS

This article examined two important sectors of the Tenth District economy that are likely to be affected by the Asian economic crisis: manufacturing and agriculture. While the overall impact on district manufacturing will be moderate, some industries, such as electronics and electric equipment and food processing could be hurt significantly. Moreover, some district states, such as Wyoming and Colorado, have a bigger stake in the Asian crisis than others, since Asia is a bigger export market for their manufactured products. In agriculture, the overall effects are likely to be somewhat larger than for manufacturing. And some specific commodities, such as wheat, soybeans, and red meats, are likely to be more seriously affected by the Asian crisis.

ENDNOTES

¹ This is the decline in the stock market index valued in domestic currency. When valued in U.S. dollars, the index would have fallen much more, of course, reflecting the sharp decline in the Indonesian rupiah.

² The economic impacts in the district as a whole are likely to be less severe than those for the entire nation for two reasons. First, the shares of manufacturing production exported from the district plants in recent years have been relatively small compared with national averages. Second, the shares of the district manufacturing exports going to the Asian countries which were more affected by recent financial problems are also relatively small. Thus, only small shares of district total manufacturing shipments have been exported to Asian countries severely affected by recent financial problems. Consequently, one should expect a smaller impact on the district manufacturing sector

due to declines in export demands from Asia than those estimated for the entire country.

³ The OM series do not measure the origin of production of manufacturing exports, but the point of origin from which the export starts its journey to the port of export. For example, the state listed as the point of origin for the export of a specific good is not necessarily the same state where it was produced. However, for manufacturing exports, the origin of movement and the origin of production are often the same, according to studies carried out by the Census Bureau.

⁴ This figure shows only net manufacturing job gains, not gross job creation. It is calculated as manufacturing jobs in 1997 minus manufacturing jobs in 1991.

⁵ The most recent data on gross state product are for 1994. In that year, manufacturing employment represented 13.5 percent of the district total nonagricultural civilian employment and 16.4 percent of the district gross domestic product.

⁶ The large percentage gains in manufacturing employment in nontraditional industrial states such as Wyoming are due to the small manufacturing base employment in 1991. Thus, even small nominal changes in manufacturing employment result in large percentage changes.

⁷ Additionally, prior to the recent Asian financial turmoil, the U.S. dollar was already strong in the international markets, making it difficult to separate the effects on imports from the strong dollar to those resulting from the Asian financial problems.

⁸ Export's share of total manufacturing output grew from 7.0 percent in 1988 to around 9.0 percent in 1995. This report uses value of shipment data as a proxy for total output. The value of both series should be very close except for years, such as recession years, when the value of inventories changes substantially from the beginning to the end of the year.

⁹ To examine the direct state-level impact of the Asian crisis, state-level data for agricultural exports would be useful. However, the absence of data on state-level exports is not as important as it might appear. Very good data exist at the national level for the direction of agricultural exports. Moreover, since agricultural commodities are, by definition, near-perfect substitutes for each other, one can assume that the pattern of exports at the national level also holds at the state level. Even if the actual units exported to a given country do not come from a particular state, that state's production is, by definition, a perfect substitute for the exported product. For many states in the Tenth District, moreover, the state itself accounts for a relatively large share of total national production (e.g., wheat in Kansas), reinforcing the argument that national trade flows may be assumed to hold at the state level for district commodities.

¹⁰ There are, however, large supplies of both cattle and hogs coming to market. This is likely pushing down the price of both cattle and hogs, separate from the impact of Asia.

¹¹ Since both exports and production are quite volatile, it is useful to average over a number of years to avoid overemphasizing one year's data.