A Note to Our Readers

The three feature articles in this issue were written before the tragic events of September 11. The delays at our borders with both Mexico and Canada subsequent to September 11 underscore the thrust of the article on U.S.–Mexico trade. And the sharp decline in stock prices the week of September 17, when the markets reopened, reinforces John Duca’s conclusion that the stock market plays a very important role in the U.S. economy.

Harvey Rosenblum
Senior Vice President and Director of Research
September 24, 2001

How Does the Stock Market Affect the Economy?

Stock wealth plays a role in most mainstream econometric models of the U.S. economy. For example, according to the Federal Reserve Board’s model, a 20 percent decline in stock prices lowers GDP by about 1.25 percent after one year. Nevertheless, economists disagree about the extent to which lower stock prices directly slow growth and the extent to which they simply reflect worsening fundamentals that are slowing the economy.

This article briefly addresses the controversy surrounding these issues. First, I review how stock prices may affect firms and discuss some of the uncertainties about these effects. Then, I turn to the effects of stock wealth on households’ consumption, discussing the mainstream view and several criticisms of it. Although some of these criticisms have validity and there is uncer-

(Continued on page 9)
trucks and their cargo as well as better coordination between U.S. agencies at the border. While the prototype promises greater efficiency, researchers admit that its implementation is still years away, and thus, after almost seven years of NAFTA, old processes persist. The result is that surface trade with Mexico continues to be markedly more expensive than trade with Canada, our other NAFTA partner.

The costs of trade, as well as the benefits, are felt most in Texas since it bears the brunt of U.S.–Mexico trade. In fact, 40 percent of the total value of U.S.–Mexico overland merchandise trade passes through just one Texas city, Laredo. On the Texas–Mexico border as a whole, 15,000 commercial trucks, 205,000 vehicles and 97,000 pedestrians cross each day. As a result of the growing trade, the transportation, distribution, warehousing and federal government sectors have expanded rapidly on the U.S. side of the border. The strong peso and growing northern Mexico popula-
tion have also driven retail trade, as increasing numbers of Mexican residents cross the border to shop in U.S. stores. Chart 2 shows rates of Texas border job growth since 1986 outstripping the nation in every year except 1995 and 1996, when Mexico was still recovering from the 1994 peso devaluation.

Changing Trade

Before opening up to trade in the late 1980s, Mexico exported mostly raw materials. As shown in Table 1, its top exports included oil, natural gas, vegetables, seafood and silver. Since then, Mexico has moved far up the chain of production. Besides oil, Mexico’s top exports now include world-class manufactured goods such as motor vehicles and electrical equipment. In the late 1980s, the elimination of Mexico’s import substitution policies spurred profound transformation and growth in Mexico’s manufacturing sector. Trade protectionism had nurtured inefficiency and widespread manufacturing quality-control problems, but after Mexico joined the General Agreement on Tariffs and Trade (GATT) in 1986, trade became a quickly growing share of the Mexican economy.

After Mexico joined the General Agreement on Tariffs and Trade in 1986, trade became a quickly growing share of the Mexican economy.

<table>
<thead>
<tr>
<th>Rank</th>
<th>1983</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Crude oil</td>
<td>All motor vehicles</td>
</tr>
<tr>
<td>2</td>
<td>Telecommunications equipment</td>
<td>Crude oil</td>
</tr>
<tr>
<td>3</td>
<td>Oil (not crude)</td>
<td>Telecommunications equipment</td>
</tr>
<tr>
<td>4</td>
<td>Internal combustion piston engines</td>
<td>Automatic data processing machines</td>
</tr>
<tr>
<td>5</td>
<td>Vegetables, roots and tubers</td>
<td>Equipment for distributing electricity</td>
</tr>
<tr>
<td>6</td>
<td>Crustaceans</td>
<td>Special purpose motor vehicles</td>
</tr>
<tr>
<td>7</td>
<td>Natural gas, whether or not liquefied</td>
<td>Parts and accessories of motor vehicles</td>
</tr>
<tr>
<td>8</td>
<td>Equipment for distributing electricity</td>
<td>Television receivers</td>
</tr>
<tr>
<td>9</td>
<td>Silver, platinum and other platinum group metals</td>
<td>Special transactions not classified by kind</td>
</tr>
<tr>
<td>10</td>
<td>Electrical apparatus for switching or protecting</td>
<td>Electrical apparatus for switching or protecting</td>
</tr>
</tbody>
</table>

NOTE: Rank based on customs value.

Table 1


Maquiladora employment began to trend upward in 1986 and more steeply in 1994, coinciding with the signing of NAFTA. Maquiladoras—which were initiated by the Mexican government in the 1960s—import inputs duty-free and produce or assemble goods for export. Because of special U.S. regulations, these firms pay tariffs only on the value added by assembly of the products re-exported to the United States. Under NAFTA, the value added to maquiladora output is typically excluded from duties, while inputs have to be of North American origin to be duty-free.¹

The changing nature of U.S.–Mexico trade, as well as the growth and agglomeration of the maquiladora industry, determines the nature of cross-border trade flows. Where the maquiladora industry is heavily concentrated, as it is in Ciudad Juárez (across from El Paso) and Tijuana (across from San Diego), maquiladora trade accounts for as much as 80 percent of import trade with Mexico.² At crossings in Texas’ Rio Grande Valley and in Arizona—where agricultural imports are still prevalent—maquiladora trade accounts for about 50 percent of import trade.

Maquiladoras determine both the volume and type of trade through their corresponding ports of entry. Where electronics producers dominate, as in Tijuana, trade inflows consist largely of electrical appliances such as televisions and sound equipment. In Ciudad Juárez, where maquiladoras are also part of the auto and apparel industry, maquiladora trade consists of motor vehicle parts, motor vehicles, electronics and clothing.
The port of Laredo, because of its strategic location along the main highway leading to Mexico City, is unique. Although Nuevo Laredo has its share of maquiladoras, the majority of trade through Laredo is coming from or going to the Mexican interior. More than 80 percent of the southbound trade through Laredo goes to the Mexican interior, principally to Mexico City.3

**Barriers to Trade**

Despite the impressive gains in volume and composition of U.S.–Mexico trade, barriers to trade persist and even multiply as new obstacles are erected.4 The restricted movement of commercial vehicles across the border, Mexican customs broker practices, limited agency staffing and inspection facilities, and cumbersome U.S. customs processing and inspections all cost shippers time and money. These transactions costs reduce the volume of trade and increase the price of traded goods. Both producers and consumers bear the burden of higher transactions costs.

On the Southwest border, clearing international freight entails many steps. The extent of transactions costs, however, depends on the direction of trade. In general, northbound trade incurs more costs from U.S. government inspections, many of which are meant to deter the entry of illegal drugs and unauthorized immigration. Southbound trade, although also subject to government inspections, is most encumbered by Mexican customs broker practices. In both cases, transactions costs include duties, broker and customs user fees, value-added taxes, freight forwarding and short- and long-haul service costs, bridge tolls and wait times for inspections.

**Empty Trucks Everywhere.** As truck trade has grown, congestion has been magnified because the increase in shipments has been mirrored by an increase in empty trucks. A March 2000 General Accounting Office (GAO) study notes that 47 percent of 3.6 million containers that crossed the border from Mexico in fiscal year 1998 were empty.5 As shown in Chart 4 for northbound shipments, all major ports of entry had at least 25 percent empty trucks and most had greater than 40 percent. The GAO study points out that government officials must process empty trucks as they do loaded ones to ensure compliance with U.S. laws and regulations. The large number of empty trucks is ostensibly slowing down cross-border trade. The empty trucks are mainly short-haul carriers, either returning from or on their way to shuttling a load across the border. The requirement that Mexican customs brokers preclear trucks coming into Mexico—and the fact that they do so on the U.S. side of the border—is an important cause of short-haul trucking. This does not, however, entirely explain...
A Mexican customs broker sends a freight forwarder to bring the cargo to the customs broker’s warehouse, where it is unloaded, inspected, appraised and classified. The paperwork, duties and fees are completed and paid. Usually the load is stored in the warehouse while the freight forwarder and the customs broker make preparations for the crossing. A short-haul truck then takes the shipment over the border and through Mexican customs and government inspections. The drayman then drops the load in a lot on the Mexican side and returns empty to the United States. The load is eventually transferred onto a Mexican truck that completes the delivery. In sum, the load is transferred at best twice but, most likely, three times involving three to four parties. A report by the U.S. Department of Transportation recently estimated that this process adds three to five days to a southbound move.6

The bottom line is that Mexican customs brokers face no competition from U.S. brokers and have considerable pricing power, as well as control over when and how goods are transported.7

As an example, a southbound truck typically drops its load at a border terminal. A Mexican customs broker sends a freight forwarder to bring the cargo to the customs broker’s warehouse, where it is unloaded, inspected, appraised and classified.7 The paperwork, duties and fees are completed and paid. Usually the load is stored in the warehouse while the freight forwarder and the customs broker make preparations for the crossing. A short-haul truck then takes the shipment over the border and through Mexican customs and government inspections. The drayman then drops the load in a lot on the Mexican side and returns empty to the United States. The load is eventually transferred onto a Mexican truck that completes the delivery. In sum, the load is transferred at best twice but, most likely, three times involving three to four parties. A report by the U.S. Department of Transportation recently estimated that this process adds three to five days to a southbound move.6

The bottom line is that Mexican customs brokers are closely allied with freight forwarders and drayage carriers, and competition between these service providers is limited. Inspection, storage, freight forwarding and drayage all earn brokers a monetary return, so they have little incentive to minimize these activities to expedite processing. Border cities also earn substantially more revenue in bridge tolls as a result of the empty truck traffic.

In contrast, U.S. and Canadian brokers play a limited role in the border-
crossing process. Since U.S. trucks can deliver to Canada, direct lining implies brokers don’t have to arrange for the transfer of cargo. Also, they can operate in each other’s countries—U.S. brokers can cross into Canada to forward freight back into the United States and vice versa. The competition keeps fees down. Moreover, the government doesn’t hold brokers liable for the freight they handle, and the paperwork is less onerous. Finally, in the United States and Canada, duties don’t have to be paid at the border. Importers can pay duties by invoice for up to 10 days after importation.

Cumbersome Inspections. On both sides of the U.S.–Mexico border, the sheer volume of commercial trucks has overwhelmed government agencies charged with inspections and exacerbated inefficiencies in the inspection processes. In its border traffic study, the GAO found six primary factors that contribute to northbound congestion at the border. “They are multiple inspection requirements, difficult staffing and human resource problems, limited use of automated management information systems for processing commercial traffic, insufficient inspection space, inadequate roads connecting ports of entry, and limited coordination and planning among U.S. inspection agencies and between the United States and Mexico.”

The study notes that the lack of coordination between agencies within countries, as well as across countries, stands in the way of reducing shippers’ transactions costs. Agencies in the United States and Mexico generally do not share facilities, but operate at different locations and during different hours. Depending on the type of load, trucks have to pass through customs, agriculture, drug, immigration and safety inspections. With 50 to 100 percent increases in commercial vehicle traffic since 1994, government funding for additional staff and facilities has fallen behind. Processing is still paper-based as federal agencies have also been slow to adopt new “intelligent transportation” technologies that could drastically reduce processing times.

Solutions for Better Border Trade

The cumbersome processing of northbound shipments could be improved by better cooperation among U.S. government agencies and greater use of available technology. The GAO recommends that the customs commissioner oversee the entire processing function to better coordinate inspections for northbound trucks. The customs commissioner should also work with the State Department’s Border Liaison Mechanism to help coordinate activities, such as operating hours, with the Mexican side. The GAO report also recommends using this joint effort to determine how technology could improve efficiency. Another suggestion is collecting data on wait times to better model the border congestion problem and potential solutions.

Regarding the adoption of advanced technology, researchers at the Texas Transportation Institute at Texas A&M University and at the Center for Transportation Research at the University of Texas at Austin have developed a prototype inspection station for northbound traffic that heavily utilizes new technologies. The prototype station combines the use of the International Trade Data System, a consolidated electronic database currently under development by the Treasury Department, and Intelligent Transportation Systems, which transpond data back and forth from truck to border processing agent. By digitizing the paper trail, the system promises to significantly reduce delays without compromising the objectives of U.S. law enforcement and other government agencies. Rather than retrofit an existing border port, the researchers hope to apply the prototype to the next new border facility completed along the Texas–Mexico border.

Another important improvement would be to enforce the NAFTA trucking agreement and allow Mexican trucks to transport goods directly into the United States and likewise for U.S. trucks into Mexico. It would increase the incidence of direct lining and decrease the demand for drayage, storage and warehousing. The reduction in drayage carriers would cut costs to shippers and, since these carriers normally do not backhaul, would reduce congestion on the border by lowering the number of empty trucks. At the same time, however, the demand for backhauls—which increases with distance traveled—would likely increase the demand for certain transportation brokerage services.
Opening the border to trucks, however, will not change things overnight. James Giermanski, a border transportation and logistics expert and professor at Belmont Abbey College, argues that initially the implementation of the trucking agreement would probably only affect northbound shipments, as some Mexican trucks take advantage of the new rules and travel to their final destination in the United States. For southbound shipments, Giermanski predicts the Mexican customs laws will allow brokers to continue to delay shipments, making it unprofitable for the long-haul shipper to wait for preclearance; thus, the drayage system will continue. In addition, the poor road quality; expensive tolls; lack of service, parts, and repair facilities; expensive fuel; and high incidence of hijacking will all deter a large or sudden incursion by U.S. trucking firms into the Mexican interior.

One hopeful development is the creation of foreign trade zones within Mexican border states. Giermanski believes more foreign trade zones, along with recent questions concerning the U.S. federal tax liability of Mexican customs brokers who operate in the United States, may begin to shift Mexican customs broker operations south of the border. This movement would significantly reduce southbound drayage and empty truck crossings. Giermanski concludes, “If all goes really well... I expect we can see the reduction and eventual elimination of drayage as we know it within two to three years of the border opening.”

— James Giermanski
sophisticated system of production sharing that has contributed to economic growth on both sides of the border. The increased trade has generated some improvements in processing and inspections; however, significant border barriers remain. Shippers face many unnecessary costs, and steps can be taken to improve the situation.

Solutions to bottlenecks in cross-border transportation require changes in both government and business practices. The cost to border cities may be less growth in the transportation and warehousing sector. The payoff, however, as local resources are put to more efficient use, will be reduced air pollution and congestion and a competitive edge in attracting shippers, shoppers and new industrial firms. The ultimate return, however, will go to U.S. and Mexican consumers as prices of traded goods fall.

— Pia M. Orrenius
Keith Phillips
Benjamin Blackburn

Orrenius is a senior economist in the Research Department of the Federal Reserve Bank of Dallas. Phillips is a senior economist at the San Antonio Branch of the Federal Reserve Bank of Dallas. Blackburn was a research assistant at the San Antonio Branch at the time this article was written.

Notes

The authors thank Jim Giermanski and the other speakers at “The Road Most Traveled: Texas Trade Corridors in the New Economy” conference sponsored by the San Antonio Branch of the Federal Reserve Bank of Dallas, August 3, 2001. We also thank Bill Gruben, Hajime Hadeishi and Anna Berman.

1 For more detail on the rules that affect maquiladora operations and how those have changed under NAFTA, see Lucinda Vargas, “NAFTA, the U.S. Economy and Maquiladoras,” Federal Reserve Bank of Dallas Business Frontier, Issue 1, 2001.


3 In 1995, more than half Laredo’s exports (51.4 percent) were destined for Mexico City and the state of Mexico, 33.7 percent for other interior states and 14.9 percent for the border states of Tamaulipas and Nuevo León. (Source: “Maquiladora Ports Information Report,” Border Trade Institute, Texas Center for Border Economic and Enterprise Development, Texas A&M International University).

4 The U.S. Congress’ recent moves to block implementation of the NAFTA trucking agreement are an example of new barriers. See the box titled “Are Mexican Trucks Safe?”