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EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL OF ECONOMIC ADVISERS
WASHINGTON, D.C. 20500

November 4, 1993

MEMORANDUM: LAURA TYSON
ALAN BLINDER
JOE STIGLITZ

FROM: SHERMAN ROBINSON *SR*

SUBJECT: Short Papers on NAFTA

We have been working jointly with: the Office of the Assistant Secretary for Economic Policy, U.S. Treasury (Brad DeLong); Chief Economist, U.S. Trade Representative (David Walters); and the Economic and Statistics Administration, U.S. Department of Commerce (Paul London) on a number of short studies on the economics of NAFTA. I attach the studies we have produced to date:

- (1) "Studies of the Economic Impact of NAFTA." CEA, October 20, 1993.
- (2) "NAFTA and Relative Wages in the U.S. and Mexico." CEA and Treasury, October 26, 1993.
- (3) "U.S.-Mexican Manufacturing Trade: Overcoming Tariff Barriers and NAFTA." Dept. of Commerce, October 26, 1993.
- (4) "NAFTA and the Employment of Union Workers." CEA and Treasury, October 28, 1993.
- (5) "NAFTA and the Size of the Mexican Market." Treasury, November 1, 1993.
- (6) Comments on a Staff Study by the Joint Economic Committee: "Potential Economic Impacts of NAFTA: An Assessment of the Debate." CEA, November 2, 1993.
- (7) "The Macroeconomics of NAFTA." CEA and Treasury, November 2, 1993.

We plan another study on the impact of NAFTA on union employment. We have additional memoranda on issues of migration, Rep. Gephardt's speech, investment diversion, the effects on Mexico and the U.S. of a failure to pass NAFTA, and the impact of NAFTA on African-American employment opportunities.

The attached papers are all cleared for release.

The Macroeconomics of NAFTA

U.S. Treasury, Office of the Assistant Secretary for Economic Policy
Council of Economic Advisers, Executive Office of the President

November 2, 1993

Summary

Studies of NAFTA that focus on efficiency gains predict substantial net benefits to the United States from NAFTA. Critical studies focus on macroeconomic consequences, and rely on two misconceptions: the belief that an increase in investment in Mexico would come at the expense of investment in the United States, and the belief that investment in Mexico somehow reduces the welfare of the United States. There is no reason to believe that increases in investment in Mexico would reduce investment in the United States, and no reason to believe that increased investment and growth in Mexico works to the detriment of the United States.

The Macroeconomic Impact of NAFTA

Most studies of NAFTA—nineteen out of the twenty studies of the comprehensive impact of NAFTA on the economy as a whole surveyed by the Council of Economic Advisers—find significant net economic gains for the United States from the free trade agreement. Indeed, all of the studies that focus on the potential impact of NAFTA on economic efficiency conclude that it offers substantial benefits to Americans as well as Canadians and Mexicans.

By contrast, critics of NAFTA focus not on the efficiency gains, but on macroeconomic mechanisms. Such critics include Koechlin and Larudee writing in *Challenge*, Harley Shaiken writing in *The American Prospect*, Jeff Faux's Economic Policy Institute, and,

most recently, Aaron Bernstein writing in the November 8 *Business Week*.

These critics focus on two issues: the diversion of American investment to Mexico, and the long-run effect on America of a more productive Mexico. However, their arguments are based on two fundamental fallacies: (i) that an increase in foreign investment in Mexico must somehow lead to a decrease of investment in the U.S.; (ii) that a job gained in Mexico must somehow lead to a job lost in the U.S.

The Investment Diversion Fallacy

Koechlin and Larudee, for example, write in the September-October 1992 issue of *Challenge* that "NAFTA will motivate a

sizable increase in U.S. investment flows to Mexico...at the expense of investment in the United States.” They estimate the likely increase in U.S. investment in Mexico as a result of NAFTA by drawing an analogy between NAFTA and the inclusion of Ireland and Spain in the European Community [EC].

They extrapolate the increase in U.S. investment in Ireland and Spain when those countries joined the EC, conclude that additional U.S. investment in Mexico will amount to \$31 to \$53 billion between now and 2000, and go on to assess the impact of “[t]he relocation of \$31 to \$53 billion of investment from the United States to Mexico.”

But if they had taken their EC analogy one step further, they would have seen that their argument has a hollow core. When Spain and Ireland joined the EC, many feared that these countries would drain investment from the rest of the EC—that investment in Germany and France would fall as producers relocated operations to low-wage Spain and Ireland.

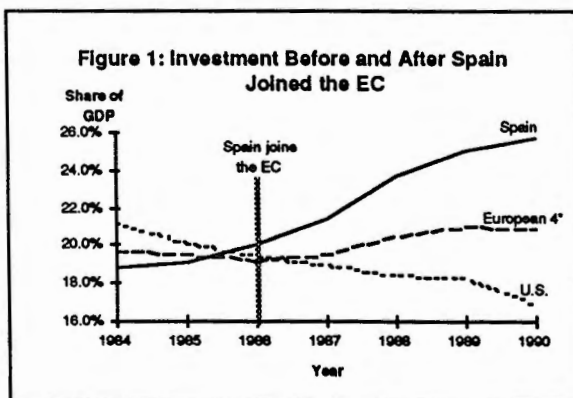


Figure 1 shows that investment in Spain

did indeed rise significantly after 1986, when Spain joined the EC. But the figure also shows that the increase in investment in Spain was not at the expense of investment in the rest of the EC. Instead, aggregate investment in the EC as a whole—and in the four largest rich countries that make up its core—increased after the accession of poorer additional countries. Increased investment by European companies in Spain did not reduce total investment in the rest of the EC.

The Congressional Budget Office [CBO], in its recent *Budgetary and Economic Analysis of the North American Free Trade Agreement*, headlines one section “Increased Investment in Mexico Is Not at the Expense of Investment in the United States.” The CBO argues that new foreign investment in Mexico represents a very small share of U.S. aggregate investment, and that any diversion could be made up by tiny changes in either domestic savings or capital inflows into the U.S. from the rest of the world. The CBO developed a multi-country macroeconomic model to examine these issues, and the results support their arguments.

The Zero-Sum Jobs Fallacy

The second fallacy is essentially an argument that anything that makes Mexico richer somehow makes the U.S. poorer. For example, Majority Whip David Bonior argues that if the U.S. exports capital goods to Mexico “we are exporting our factories, and our jobs.”

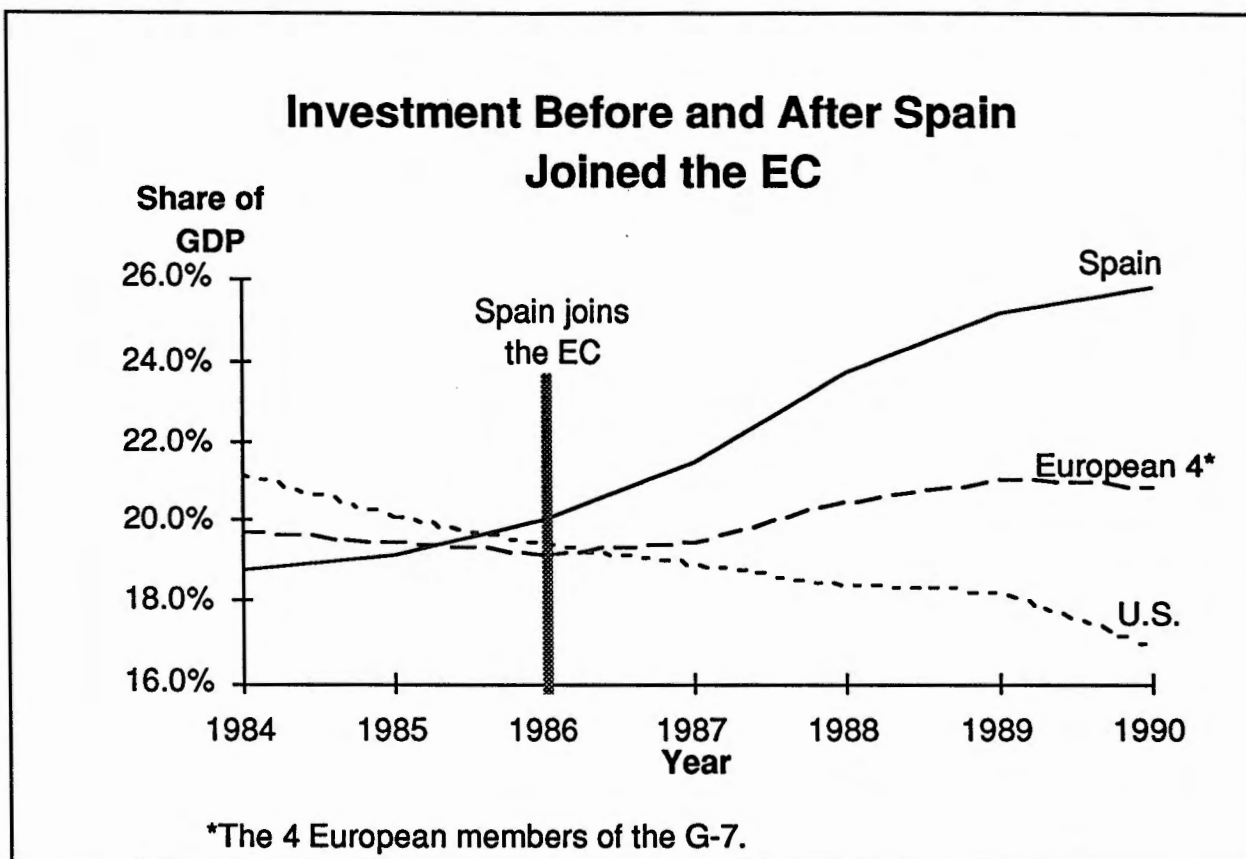
The argument is that exports of capital goods to Mexico will be used in the long run to expand Mexican exports to the U.S.,

presumably leading Mexico to run a balance-of-trade surplus with the U.S., with negative effects on industry and employment. But this argument is not correct for two reasons:

- First, with NAFTA Mexico is likely to continue to run a trade deficit with the United States for a generation. The CBO study supported this conclusion, and it is consistent with the past experience of other semi-industrialized countries.
- Second, the bulk of investment in Mexico is to expand Mexican capacity to supply their domestic market. NAFTA will lead to increased Mexican growth, and a more

prosperous Mexico is good for the U.S., providing an expanded market and increased trade.

Finally, the experience of many countries, including Mexico over the last six years, indicates that increased direct foreign investment leads to an increase in the demand for goods produced in the investing country. Increased U.S. investment in Mexico translates into increased U.S. trade with Mexico. Higher trade with Mexico allows the U.S. to employ more workers in high-wage export jobs, and raises American productivity levels and standards of living.



- In 1986 Spain joined the European Community [EC]. Many feared that businesses located in the rich, high-wage core industrial countries of Europe would relocate to low-wage Spain, depressing investment in the rest of the EC.
- After 1986 investment in Spain did boom—but not at the expense of investment in the rest of the EC. The average investment rate in the four European members of the G-7 rose after 1986 as well.
- The enlargement of the EC made it a more attractive place to invest in general. This more than offset any diversion of investment from other EC countries to Spain.
- The rise in investment in the EC after 1986 was not part of a global trend: investment in the U.S. fell after 1986.

EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL OF ECONOMIC ADVISERS
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November 2, 1993

**Staff Study by the Joint Economic Committee:
“Potential Economic Impacts of NAFTA: An Assessment of the Debate”**

The Joint Economic Committee (JEC) recently released a staff study which surveys some of the studies of the potential economic impacts of NAFTA. The JEC study maintains that these studies are of limited use in determining whether NAFTA should be approved because of the simplifying assumptions they make in modeling the way the economies in North America operate. The JEC study argues that many of these assumptions are unrealistic and bias many studies toward finding that NAFTA is good for the U.S., Canada, and Mexico. Finally, the JEC study argues that there are credible studies, making different assumptions, which find that NAFTA is potentially bad for the U.S.

Our evaluation of the available research and independent surveys by others indicate that the JEC study does not make its case. The very few studies finding that NAFTA is potentially bad for the U.S. are seriously flawed and are not credible compared to the many studies finding that NAFTA is good for all three countries.

All economic models rest on simplifying assumptions, and the models that have been used by numerous researchers to predict the effects of NAFTA on the U.S. economy are no exception. Several different models have been developed to explore the empirical importance of the many changes by which NAFTA will affect the three economies in North America. What is exceptional is that the overwhelming majority of studies, using a variety of different modelling techniques and different assumptions about the economic forces at work, conclude that NAFTA will benefit all three countries. For the U.S., these studies indicate that NAFTA will benefit labor, leading to either increased employment, increased wages, or both. While the JEC attempts to argue that the assumptions underlying the few negative studies are more realistic or valid, this argument has not been found persuasive by any of the independent reviewers of the economic work on NAFTA.

There have been a number of reviews of the economic studies of NAFTA by impartial researchers at institutions such as the Congressional Budget Office, the General Accounting Office, the International Trade Commission, and the Brookings Institution. These reviews have critically examined the various studies, evaluating the validity of their methodologies and underlying assumptions. The reviews are unanimous in their conclusion: NAFTA will benefit all three countries. In a recent letter to the President, 286 academic economists, including 13 Nobel prize winners, representing different theoretical and political traditions, make the same point. Although they disagree on many things, most academic economists agree that NAFTA will create jobs and encourage economic growth in the United States.

Selection of Studies to Survey

There have been a number of surveys of economic studies of NAFTA in the past year. Some have been encyclopedic, but most have been selective, analyzing examples of different types of models. The JEC survey considers a sample of sixteen studies which "provide estimates of aggregate impacts on the U.S. economy." In its survey, the JEC focuses on a single scenario considered by each study: "In general, the scenario with the largest US impacts, whether positive or negative, is chosen."

The JEC report compares its selection of studies with that of a brief survey recently done by the Office of the Special Counselor to the President on NAFTA. The Counselor's survey provides a complete bibliography of NAFTA studies available at the beginning of September 1993. The bibliography classifies studies in various categories: it includes twenty "comprehensive" studies, eleven studies with a variety of focuses, and seven reviews of the empirical literature on the effects of NAFTA. The bibliography also includes closely related papers by the authors of the listed studies.

With the exception of a very recent study by James Stanford, which was not available when the Counselor's bibliography was compiled, all of the studies surveyed by the JEC are included in the Counselor's bibliography. There is an overlap of twelve studies between the JEC's list of sixteen "aggregate" studies and the Counselor's list of twenty "comprehensive" studies. The JEC chose examples of studies of certain types, while the Counselor's list was more inclusive. For example, the JEC excluded multiple papers by the same authors, arguing that these represent "double counting." In fact, there are significant differences in structure and policy focus between the models used in many of the studies excluded from the JEC list and those included.

Assumptions, Models, and Policy Analysis

The JEC review considers the role of models in policy analysis, stating:

"All economic models are in fact scenarios that must exclude consideration of some questions and simplify others. . . . Because all results from economic models rest in large part on these assumptions, the credibility of the assumptions must be a central consideration when evaluating the results from the models. When these assumptions are not credible, the conclusions should not be a major factor in deciding public policy."

The review goes on to list six issues that are the focus of the debate over NAFTA: (1) investment, particularly diversion of investment from the U.S. to Mexico; (2) trade, both structure and volume; (3) immigration; (4) net job changes in the U.S.; (5) gross job losses in the U.S.; and (6) wages in the U.S.

After briefly discussing the key provisions of NAFTA, the report provides a critical analysis of how the sixteen studies address the six issues, focusing on the role of different assumptions in determining the model results. The report then goes on to discuss the model results, indicating the role of various assumptions in generating the empirical results.

The JEC survey raises a number of valid questions that policymakers should keep in mind when evaluating the different studies. However, the JEC's focus on a single scenario from each model is misleading in that it misses the richness of the analysis in many of the studies.

Although the studies from policy think tanks tend to focus on a narrow range of assumptions and causal links that support their particular viewpoint, all the academic studies surveyed were done by researchers who are well aware of the strengths and limitations of the methodologies they used. All of the researchers discussed the sensitivity of their results to variations in assumptions and considered a variety of scenarios under a variety of assumptions.

Computable General Equilibrium Models

For example, consider the academic studies using computable general equilibrium (CGE) models. CGE models are used in nine of the sixteen studies reviewed by the JEC and sixteen of the twenty comprehensive studies reviewed by the Counselor's office. In all these studies, the models are used as simulation laboratories providing policymakers with the ability to do controlled experiments that permit detailed analysis of the mechanisms by which policy changes affect the various economies. In many cases, researchers made strong assumptions in some scenarios in order to do controlled experiments that isolated the empirical size of various links. The single experiment for each study reported in the JEC survey gives little indication of the usefulness of the models in sorting out the empirical importance of the links between policy changes and economic results, and in evaluating the robustness of those empirical results.

In 1992, the ITC did a meticulous survey of all the CGE models used to study NAFTA and concluded: "Despite the different approaches taken in these studies, there is a surprising degree of unanimity in their results regarding the aggregate effects of a NAFTA. All three countries are expected to gain from a NAFTA. The greatest impact will be on the Mexican economy, with less impact on the Canadian and U.S. economies." While the JEC argues that the results from all the surveyed CGE models depend on their underlying assumptions, which is really a tautology, it was a surprise to the ITC and to the researchers involved to find such agreement across such a wide variety of modelling approaches and behavioral assumptions. Surveys by the Congressional Budget Office and the Brookings Institution considered a wider range of studies and reached similar conclusions —NAFTA is good for all three countries, especially Mexico.

Since the ITC survey, there have been a number of studies using CGE models that support NAFTA and two that find negative impacts. The two negative studies are on the JEC list: (1) the Economic Policy Institute (EPI) study which used a dynamic CGE model developed

by Hinojosa and McCleery, and (2) the recent CGE model of the U.S., Canada, and Mexico by James Stanford.

As noted in Table 2 of the JEC review, the EPI model generates a loss of 550,000 jobs in the U.S., a figure which EPI has used often and which appears in various ads. However, the number largely consists of jobs "lost" due to return migration of workers from the U.S. to Mexico. In the scenarios generating this result, growth in Mexico raises Mexican wages, yielding return migration and higher wages in the U.S. These are not jobs "lost" by American workers, but rather U.S. jobs foregone by Mexican workers for whom NAFTA will provide increased income at home. Hinojosa and McCleery wrote a letter to Jeff Faux, the President of EPI, complaining about what they considered to be a gross misuse of their model.

The JEC study presents a new CGE model developed by James Stanford as an improvement over existing CGE models. Stanford, a Ph.D. student at the New School for Social Research, strongly criticizes earlier CGE models of NAFTA for embodying neoclassical economic assumptions of the sort that underlie the theory of comparative advantage. He argues that these assumptions are unrealistic, and goes on to develop a "structuralist" or "institutional" CGE model that incorporates "real world" assumptions about how firms behave, how labor markets operate, and how savings and investment are determined.

In his "institutional" model, wages do not vary with the supply and demand for labor, firms do not seek to maximize profits, unemployment persists indefinitely, and changes in GDP in the long run are largely determined by changes in aggregate demand rather than by changes in the supply side. In this environment, changes in investment flows are very important because they have a strong impact on aggregate employment through the operation of the Keynesian multiplier. Indeed, the impact of changes in investment flows dominate all other effects arising from trade liberalization, such as efficiency gains arising from changes in the structure of trade and production.

Stanford goes on to say (p. 8): "The 'institutional' model of North American trade and investment flows thus incorporates a very different set of assumptions from the neoclassical approach which is reflected in the majority of NAFTA simulation models. Not surprisingly, therefore, the model's results suggest a very different outcome is likely from the NAFTA than has been suggested by many other economists." He later warns the reader: "It must be stressed that this 'institutional' analysis is quite preliminary, in that the behavioural relationships built into the model are novel and hence relatively untested."

Stanford's institutional model is an extreme example of a "structuralist" Keynesian macro model. The assumptions that some markets essentially never clear, that firms do not maximize profits, that wages are set by institutional forces in the long run, and that Keynesian multipliers operate in the long run are certainly controversial, and are not viewed as reasonable by many economists. They also seem out of place in an analysis of the efficiency gains from changes in the structure of trade and production arising from changes in protection, which is, after all, a major focus of NAFTA and of the models seeking to analyze the impact of NAFTA.

To his credit, and as befits a Ph.D. thesis, Stanford also reports runs of his model in “neoclassical” mode. He reports (p. 31) that “[t]he effects of the NAFTA, according to this neoclassical simulation, . . . are quite startling. Just as predicted by other NAFTA models, the agreement has very small positive effects on the U.S. and Canadian economies, including small gains in GDP, wages, consumption, and foreign trade. . . . The effects of the NAFTA on the Mexican economy are more positive (with GDP growing by 2.8 percent), but there are no ‘losers’ as a result of the NAFTA.” Startling? No, but certainly reassuring.

The JEC survey cites Stanford’s model approvingly, stating that “Stanford models virtually the full range of issues that concern most people in the NAFTA debate.” While an overwhelming majority of economists would disagree strongly with his assumptions, his model specification, and the applicability of that specification to issues of trade liberalization, all would agree with the JEC assessment that “Stanford’s work is the clearest illustration of the critical importance of assumptions in affecting empirical results from these models.” (p. 34)

Macroeconomic Models of NAFTA

The JEC study criticizes a number of the NAFTA models because they do not adequately consider macroeconomic linkages through which trade might affect: (1) aggregate employment, (2) foreign direct investment in Mexico and diversion of investment to Mexico from the U.S., and (3) the balance of trade between Mexico and the U.S. Many of the NAFTA models, particularly the CGE models, focus on efficiency gains from changes in protection, prices, trade, resource allocation, and production as a result of NAFTA. Given their focus, these models tend to assume that macroeconomic variables are set exogenously, and hence are not directly affected by NAFTA. Most of these models, however, do explore the sensitivity of their results to changes in these variables. In effect, researchers have imposed different macro scenarios on their CGE models to examine the sensitivity of their results to changes in the scenarios.

All of the NAFTA models which find potentially negative impacts of NAFTA on the U.S. economy focus either on changes in the U.S.-Mexican balance of trade (balance-of-trade multiplier models) or on investment diversion from the U.S. to Mexico (investment-employment models).

(1) Macro balance-of-trade multiplier models. According to the CBO report, reviewing balance-of-trade multiplier models (p. 84): “Implementing NAFTA would probably expand total employment in the United States in the short run, as increased exports to Mexico raised the demand for labor. Net gains ranging from 35,000 jobs to 170,000 jobs have been forecast.”

The 170,000 figure is from Hufbauer and Schott. They project increased export jobs of 316,000, minus job loss from increased imports of 145,000, yielding 171,000 net (which CBO evidently rounded to 170,000). They present their estimate of job gains as a result of NAFTA,

due to the change in the trade balance with Mexico, with the U.S. maintaining a trade surplus with Mexico for an extended period.

The only negative study in this category is a study by Clyde Prestowitz and others of the Economic Strategy Institute, which assumes that the U.S.-Mexico balance of trade moves into deficit. They then apply a balance-of-trade employment multiplier (using a different magnitude than Hufbauer-Schott), and project a loss of more than 900,000 U.S. jobs. Prestowitz, after initially arguing that NAFTA would be bad for the U.S., has since changed his mind and now argues that NAFTA will be good for the U.S.

In this type of model, the result depends critically on the projection of the U.S.-Mexican trade balance. The JEC study argues that the Mexican's will be unable to maintain a current account deficit with the U.S. for very long. The Congressional Budget Office (CB), in chapter 2 of their report ("The Macroeconomics of NAFTA"), analyze this issue by using a dynamic, multi-country, macro model adapted from a model originally developed by Warwick McKibbin and Jeffrey Sachs. This study, which is not included in the JEC survey, is the only one that uses a formal model designed to evaluate questions of changes in the balance of trade between Mexico and the U.S. The model also incorporates international investment flows, and so can also be used to evaluate questions of investment diversion (discussed below).

The CBO researchers run a variety of macro simulations, and conclude that (p. 20) "Mexico's current-account deficit will continue for a substantial period of time," around twenty years or more. This result, which is consistent with the historical experience of other semi-industrial countries, supports the Hufbauer-Schott results, since their net employment gains are based on the assumption that Mexico will continue to run trade deficits with the U.S.

(2) Macro Investment-Employment Models. This type of analysis is used by the Economic Policy Institute (in various papers) and underlies the analysis of Pat Choate, Ross Perot, and Harley Shaiken. It is the "sucking sound" argument.

The argument is that increased investment in Mexico will largely come from the U.S., that this increased investment flow will cause a decline in investment in the U.S., and that therefore employment in the U.S. will fall. It is the mechanism at work in the Stanford and McCleery CGE models, as well as various macro models.

For example, one EPI study (Koechlin *et al.*) makes an extreme assumption that additional U.S. investment flows to Mexico reduce investment in the U.S. dollar-for-dollar. Starting from this premise, the study generates estimates of industrial job losses for the U.S. ranging from 290,000 to 490,000. This approach has been heavily criticized for its faulty methodology and unrealistic assumptions. The CBO did not even bother to review this work.

As noted in the JEC review, this type of analysis depends crucially on the assumption that increased investment in Mexico leads to decreased investment in the U.S. The JEC report

argues that such investment diversion is significant, and will lead to reduced investment in the U.S.

The CBO addresses the issue of investment diversion using their multi-country macro model. Their macro simulations indicate that increased investment in Mexico will not be at the expense of investment in the United States. In a section entitled "Increased Investment in Mexico Is Not At the Expense of Investment in the United States," the CBO argues that investment diversion represents a very small share of U.S. aggregate investment, and can be made up by tiny changes in either domestic savings or capital inflows into the U.S. from the rest of the world.

The CBO conclusion is also consistent with the experience of the EC. When Spain, Portugal, and Ireland joined, the argument was made that these countries would drain investment from the rest of the EC. In fact, aggregate investment in the EC rose after the market expanded.

Labor Displacement

The JEC report surveys work on possible gross job dislocation in the U.S. due to NAFTA. They dismiss as wildly unrealistic the claims of Pat Choate that 5.9 million U.S. jobs are "at risk" under NAFTA. The JEC argues that estimates of gross dislocations of 300,000 to 600,000 are plausible.

The CBO report has a chapter on "Workers Displaced by NAFTA" (Chapter 5). They conclude that (pp. 86-87): "The basis for forecasting the number of job losses associated with NAFTA is quite weak. . . . Perhaps 100,000 to 200,000 jobs would be a reasonable range, but considerable skepticism is warranted. . . . Even if the number of workers displaced because of NAFTA were twice the high end of the range of job losses given above, that would still be less than 400,000 losses in an economy of nearly 120 million jobs."

The CBO goes on to report that annual job losses in the U.S. economy in the 1980s ranged from 1.5 million to 2.7 million. The maximum of 400,000 gross job losses due to NAFTA is spread over fifteen years. They conclude (p. xv): "Viewed as part of a larger, dynamic labor market in which nearly 20 million workers were displaced during the 1980s, the effects of NAFTA appear relatively small."

Migration Issues

The issue of migration has become part of the NAFTA debate, and is discussed in the JEC study. The JEC survey notes that only three of the sixteen studies it includes consider migration issues, and they yield a wide variety of results. The JEC cites a recent study by Martin (1993), who reviews economic and demographic studies of Mexican-U.S. migration.

Following Martin, the JEC concludes (p. 25) that, as a result of NAFTA, “. . . greater imports of farm products into Mexico would displace labor from Mexico's rural areas more rapidly, which would stimulate migration to urban in Mexico and the U.S.”

As Martin notes, Mexican-U.S. migration is affected by “pull” factors on the U.S. side and “push” factors on the Mexican side. From the “push” side, immigration is sensitive to conditions in the Mexican labor market, including both wages and employment growth, and to changes in the exchange rate. All studies agree that NAFTA will, from the start, increase industrial employment in Mexico. The potential problem that has attracted a great deal of attention is what will happen in the Mexican countryside.

When NAFTA was first proposed, a number of researchers worried about the impact on the rural economy of rapid liberalization of Mexican restrictions on agricultural trade. At that time (1991), Mexican agricultural policy involved heavy subsidies to corn and beans, grown largely on communally owned land known as “ejidos.” These subsidies raised domestic prices above world levels, and were supported by a system of strict import quotas. Researchers argued that too-rapid removal of those quotas would have undermined the whole agricultural support system, leading to disruption of rural labor markets, increased rural-urban migration within Mexico, and increased migration to the U.S. in the short run.

This scenario is the major argument underlying what Martin (p. 137) calls the “conventional wisdom” that “NAFTA can be expected to increase Mexico-to-US migration, but only temporarily and only marginally compared with the current flow. . . . [A]fter [the year] 2000, the more rapid economic growth and job creation due to NAFTA should reduce the ‘normal’ Mexican influx.”

In the last year and a half, two developments have changed the Mexican policy environment dramatically:

First, the negotiation of NAFTA has been completed, and the agreement explicitly acknowledges the sensitivity of Mexican agriculture. Under NAFTA, Mexico is allowed fifteen years in which to adjust its trade policies in important agricultural sectors; a period long enough to give them flexibility in changing their agricultural support policies.

Second, Mexico has unilaterally undertaken to reform its domestic agricultural policies, regardless of whether NAFTA is implemented. At the end of 1991, the Mexican Constitution was amended to allow private ownership of communal “ejido” lands—a major break with history. In addition, this fall, the Mexican government announced a comprehensive reform of its agricultural subsidy system. They plan to move to a “non-distorting” system of income support for farmers, with quite high support levels that taper off over fifteen years. This new system will employ policy instruments that are consistent with the allowable “green box” agricultural policies currently under discussion in the Uruguay round of GATT negotiations.

In response to the anticipated changes in the rural economy, the Mexican government is also considering a number of additional policy initiatives, including a rural investment program to increase employment opportunities in rural areas. In the long run, the major mechanisms for absorbing this surplus labor will be expansion of the industrial sector and changes in the structure of agriculture, with increases in productivity and shifts toward high-value, labor-intensive crops such as fruits and vegetables. NAFTA will play an important role in supporting these changes.

In the short run, however, migration will be determined largely by how well the Mexican government manages the agricultural reforms that are currently underway. NAFTA, with its provision of a long transition period for agriculture, provides the Mexicans with maneuvering room to manage these changes and is probably no longer an important factor, by itself, in the short run.

By contrast, studies indicate that if NAFTA fails, the Mexican growth rate over the next decade will be 1-2 percent lower than it would be if NAFTA were implemented, and there would also be a depreciation of the Mexican exchange rate. The lower growth rate would certainly exacerbate employment problems in Mexico, and lead to a "push" toward higher migration to the U.S. in the short run. In addition, a depreciated Mexican peso will make U.S. wages look better, increasing the "pull" for potential migrants.

Two years ago, the question was whether too-rapid trade liberalization would disrupt Mexican rural labor markets and exacerbate the migration problem. Now, with negotiations completed and recent changes in Mexican policy, we can see that, as far as migration is concerned, NAFTA is an important part of the solution, not the problem.

References

A complete list of NAFTA studies is given in: Council of Economic Advisers, Executive Office of the President, "Studies of the Economic Impact of NAFTA," October 20, 1993. The studies quoted in this report are listed below.

Congressional Budget Office, U.S. Congress. A Budgetary and Economic Analysis of the North American Free Trade Agreement. Washington, DC: U.S. Congress, July 1993.

Martin, Philip L. Trade and Migration: NAFTA and Agriculture. Washington, DC: Institute for International Economics, 1993.

Stanford, Jim. "Estimating the Effects of North American Free Trade: A Three-Country General Equilibrium Model with 'Real World' Assumptions." Ottawa, Ontario: Canadian Centre for Policy Alternatives, September 1993.

U.S. Congress, Joint Economic Committee. "Potential Economic Impacts of NAFTA: An Assessment of the Debate." U.S. Congress, October 1993.

U.S. International Trade Commission. Economy-Wide Modeling of the Economic Implications of a FTA with Mexico and a NAFTA with Canada and Mexico. USITC Publication 2516. Washington, DC: USITC, May 1992.

NAFTA and the Size of the Mexican Market

Office of the Assistant Secretary for Economic Policy
U.S. Treasury

November 1, 1993

Summary

It is well known that Mexico is already the second largest market for U.S. manufactured goods and the third largest market for U.S. agricultural exports. Mexico is a developing country; its potential for future growth is even more impressive. Today Mexico buys approximately \$40 billion a year of U.S. products. Should Mexico's economic reforms succeed in accelerating Mexican economic growth, within a generation U.S. access to the Mexican market could amount to \$300 billion (at 1987 prices), total 2.5 percent of GDP, and support 3.6 million U.S. jobs. Just as Japan has benefited greatly from the boom in Asian economic growth over the past two decades, so could the U.S. benefit from preferential access to Mexico.

Size of the Mexican Market : The Issue

The North American Free Trade Agreement (NAFTA) eliminates barriers to trade between the U.S. and Mexico. It allows American goods free access to the Mexican market. It commits Mexico to an outward-looking economic strategy.

While Mexico is a major purchaser of U.S. exports today, the Mexican market is smaller than many other markets. Mexico last year imported \$60 billion of commodities. Compare this to the \$610 billion purchased each year by the developing countries of Asia, the \$360 billion a year of imports purchased by Japan, or the \$1,800 billion a year of imports into the non-Japan, non-U.S. OECD—most of which represents trade within the European Community.

The U.S. profits today by trading with

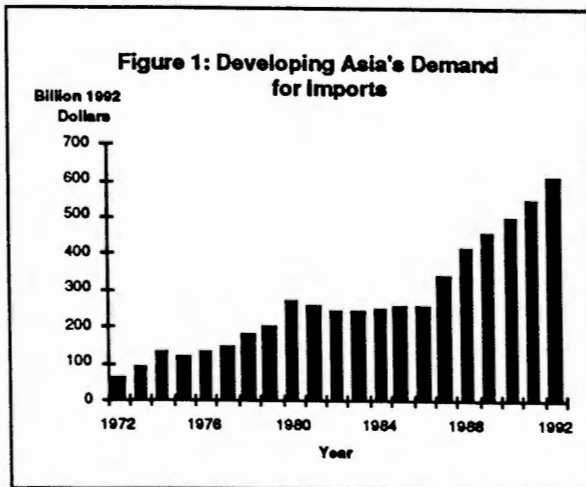
Mexico in large part because we dominate the \$60 billion Mexican market. The future potential of this market is even greater. The Mexican market may well grow dramatically over the next two decades.

Rapid Growth on the Pacific Rim

In 1972, the developing economies of Asia imported commodities worth some \$60 billion at today's prices. Today developing Asia imports some \$610 billion a year—a more than ten-fold multiplication of their real volume of trade.

Developing Asia's major trading partners have benefited from this economic explosion. They now sell the products of their own export industries into the vastly larger markets of the rapidly-growing newly-industrialized economies of Asia. These countries are

hungry both for the sophisticated capital goods and the leading-edge consumer goods produced in the world's industrial core.



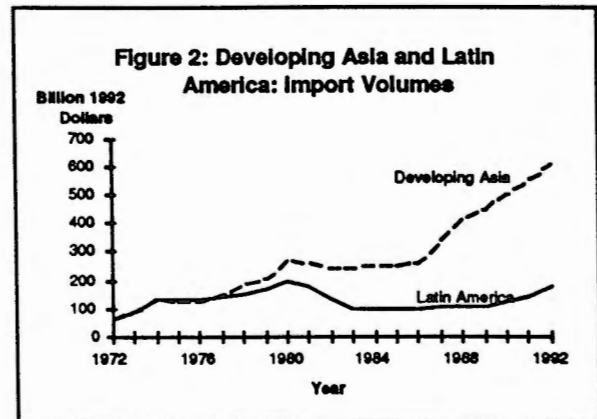
The source of Asia's economic miracle is clear: families that educate their children; industries that focus on and are allowed to export; a citizenry eager to save and invest to enhance well-being; and governments that embrace pro-export pro-market policies that allow a growing economy to reap maximum benefit from the international economy.

The principal First World beneficiary of the economic growth of developing Asia has been Japan. Selling between twenty and twenty-five percent of the goods imported by the developing economies of Asia, a \$12-\$15 billion a year market in 1972 is a \$120-\$150 billion a year market today.

Latin America's Relative Stagnation

By contrast, the growth of the developing Americas as an international market has been anemic over the past two decades. In 1972, as many goods were sold to the developing countries of the Western Hemisphere as to the

developing economies of Asia. No one then would have predicted that by 1992 the developing Asian market would be four times larger—that it would multiply more than tenfold while the Latin American market would be hard-pressed to more than double.



Why did the developing economies of Latin America fall behind the developing economies of Asia? The sources are, once again, well known: governments borrowed freely not to increase investment but to give their political supporters a higher current standard of living; firms were protected by barriers from the efficiency-promoting winds of competition; exports withered from exchange rates pegged too high by protectionism; political turmoil.

All these factors contributed to structural weaknesses. But the *coup de grace* was inflicted by the international debt crisis of the 1980s. Latin American purchases of imports shrank by half in the two years from 1981 to 1983. The next five years that saw the overhang of the unresolved and unpaid foreign debt discourage investment also saw Latin American trade stagnate.

What First World country lost the most

from the past two decades of relative economic stagnation in Latin America? The United States. Forty-five percent of imports to Latin America came from the United States—70 percent of Mexico's imports came from the United States.

Had the Latin American market grown as fast as the Asian and the U.S. kept its share of their market, then in 1992 the U.S. would have exported \$200 billion more to Latin America.

Expanded trade would have meant \$200 billion more of demand, primarily for the products of the high-wage, heavily-unionized, high-capital-intensity manufacturing sector in the United States. These exports would have supported on the order of four million additional U.S. workers in higher-wage jobs.

Mexico's Economic Reforms

In 1987, President Salinas began his reforms of the Mexican economy. The government's role in allocating investment, regulating wages, and redistributing income was diminished. President Salinas strove to eliminate the system by which friends of the politically powerful were provided protection against competition—whether from foreign firms or from potential domestic competitors.

To date, the economy has responded to the adjustment program as hoped: inflation has diminished, productivity growth has resumed, and real wage growth has resumed as well.

In the past, the organization of the Mexican capital market was a disincentive to competition. Special capital subsidies were

provided for the sugar, paper, chemicals, steel, and automobile industries—in none of which was Mexico an efficient world producer. Reform is eliminating these subsidies.

A key component of Mexican reform is trade liberalization. Previous administrations had followed a policy of "import substitution," reducing pressures on domestic firms to become more efficient and reducing the ability of Mexicans to acquire foreign capital goods that embodied advanced technologies. The Salinas government has initiated one of the most extensive trade reforms of this decade.

Tariff barriers have been reduced by half. The amount of production protected from competition by non-tariff barriers has fallen by three-quarters.

NAFTA would cap this trade liberalization, carrying tariffs imposed on U.S. producers—who supply two-thirds of Mexican imports—down to zero, and eliminating non-tariff barriers as well. Most significantly, NAFTA would lock in this positive change.

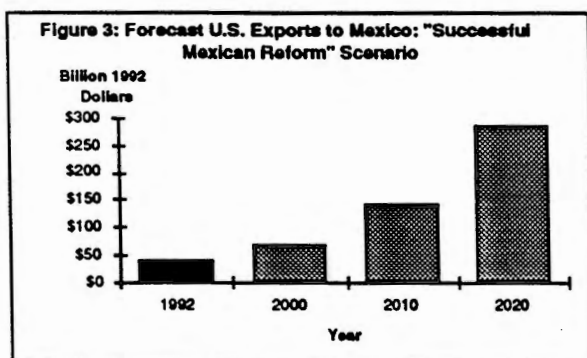
In sum, the aim of Mexican reforms is to move the structure of Mexico's government and economy in the direction of the pattern—openness to international markets, reliance on private-sector competition, and a limited role for the government—that had proven so successful in so many of the rapidly growing economies of Asia.

Mexico's Economic Future

Should these reforms be reinforced by a securely implemented NAFTA and set the

mold for government policies over the next generation, the Mexican economy could grow very rapidly for the next twenty years or so.

Suppose that Mexico's reforms give it a *per capita* income growth rate equal to that of the top quarter of developing economies over 1960-85: 3.3% per year. Under this assumption, by 2010 Mexico's GDP *per capita* would be more than \$6,000 in 1992 dollars—more than half again as rich as Korea today, and nearly as much as Spain today.



Because of Mexico's rapid population growth, this *per capita* income of \$6,000 1992 dollars in 2010 would be shared by approximately 125 million people: a total GDP in 2010 of \$750 billion.

If U.S. exports to Mexico amounted to as large a proportion of Mexican GDP then as they do now, then in 2010 U.S. exports to Mexico would reach \$125 billion, 1.5% of GDP, and support the jobs of more than two million workers.

Extend rapid Mexican growth for another decade, and project in 2020 a Mexico as rich as Hong Kong or New Zealand is today. U.S. exports could amount to \$240 billion, equal two percent of GDP, and support the jobs of nearly three and a half million American

workers.

This is an optimistic scenario. It assumes that Mexico can successfully reform its economic policies and follow the steps to rapid growth most recently followed by the economies of East Asia. Any of a number of factors could prevent its realization.

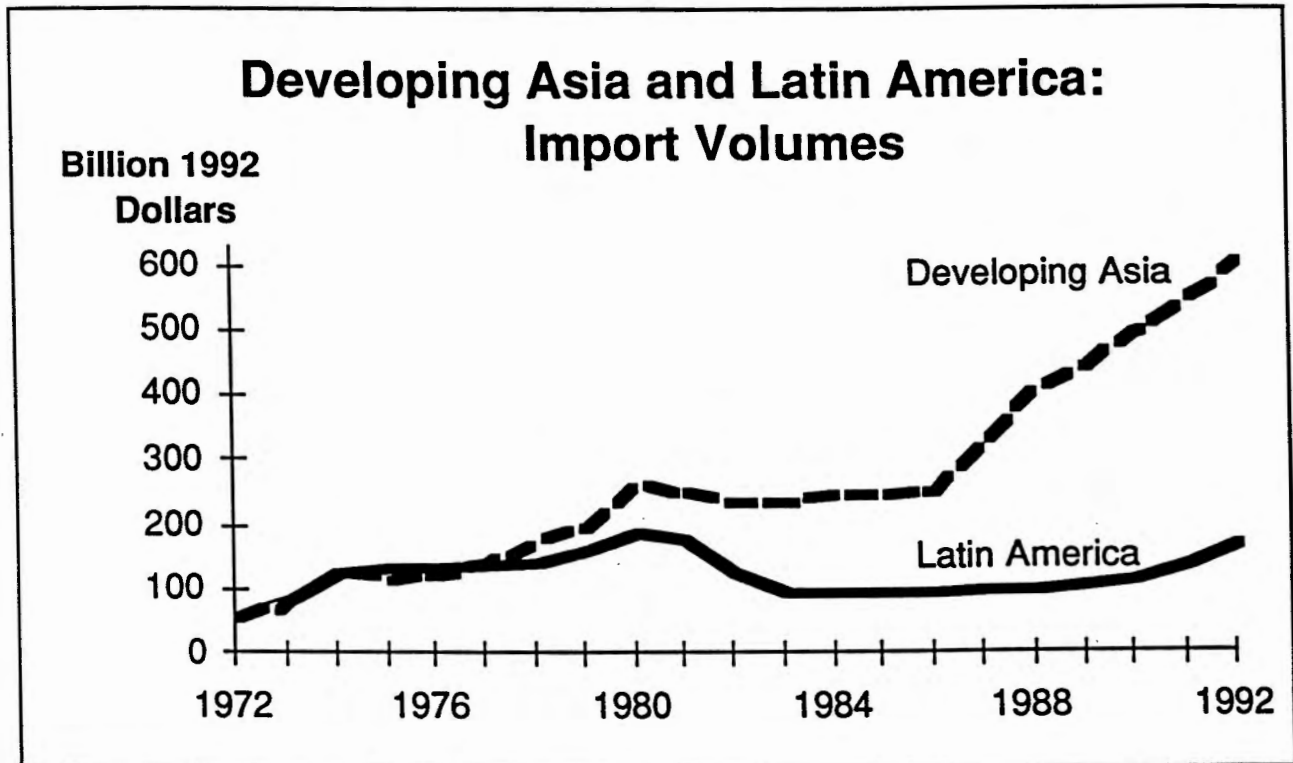
But this is not an impossibly optimistic scenario. Mexico has achieved many more of the preconditions for successful rapid development today than Korea or Taiwan had in 1960—or than Italy or Spain in 1950. Even if Mexico grows more slowly, the benefits for the U.S. would still be great.

If Mexican industrialization is successful over the next generation, the potential benefits for the United States from NAFTA—from close integration of U.S. producers with this rapidly-expanding market—are enormous.

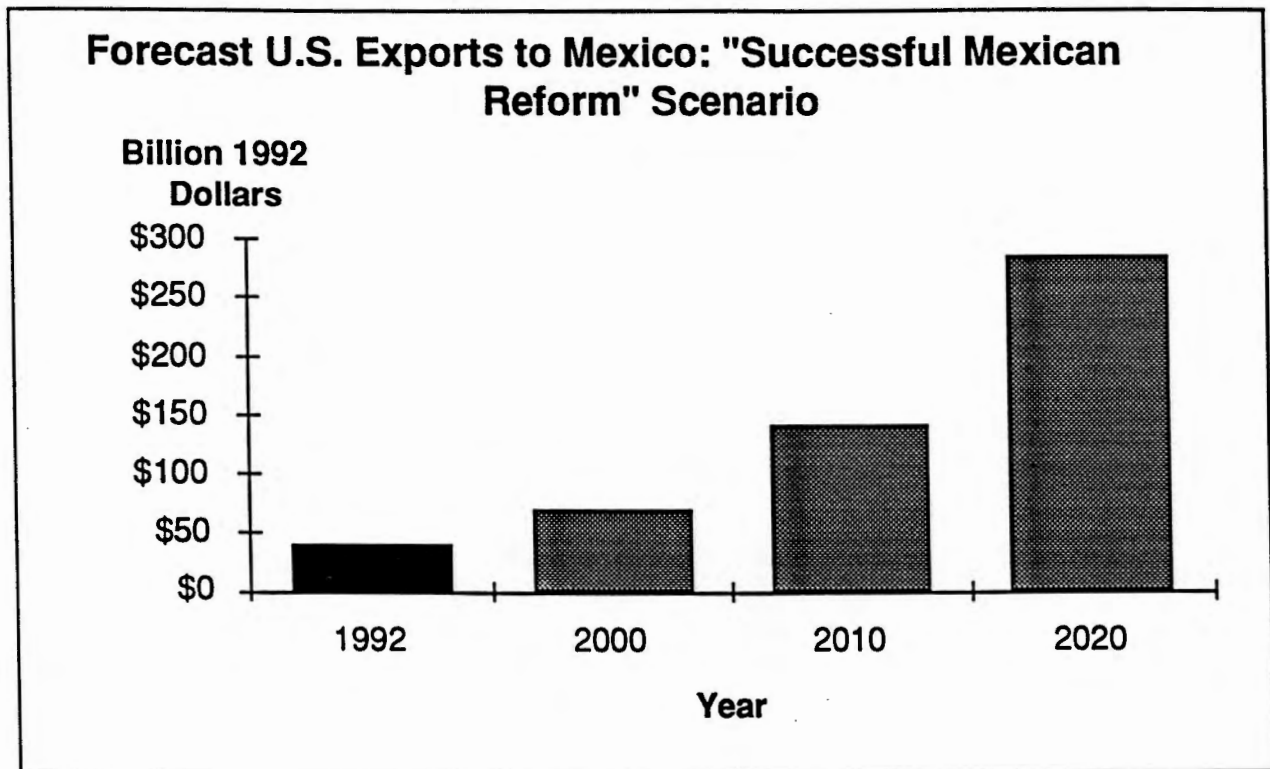
Conclusion

Today Mexico is one of the largest markets for U.S. goods in the world. If Mexico's economic reforms succeed in accelerating Mexican economic growth, within a generation U.S. access to the Mexican market will be even more valuable.

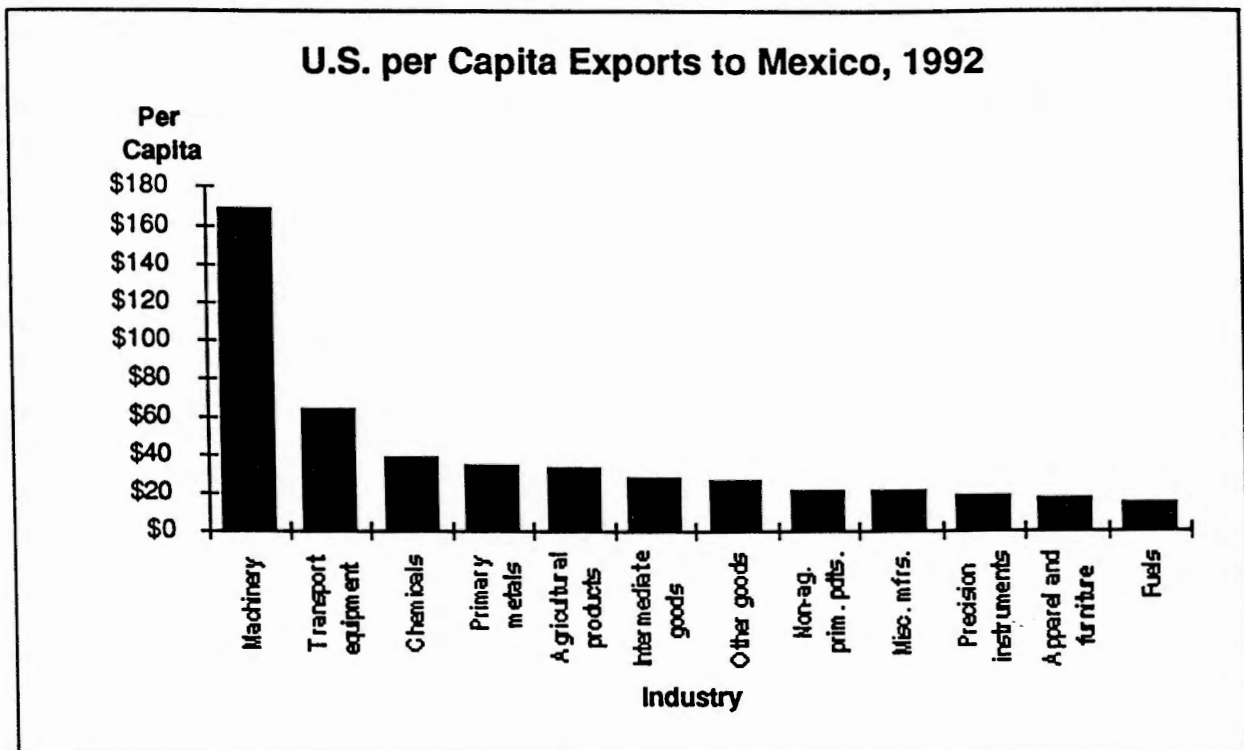
NAFTA will reinforce and sustain U.S. firms as the preferred suppliers of Mexico's market. Over the past twenty years the acceleration of East Asian growth has worked primarily to the benefit of Japan; NAFTA will help make accelerating Latin American growth benefit the United States.



- In the early 1970s the Latin American and the developing Asian markets were equally large.
- Today the trade of Asian developing countries is four times Latin American trade. Developing Asia's demand for imports has multiplied tenfold since 1972.
- The principal beneficiary of the growth of developing Asia has been Japan: a \$12-\$15 billion a year market in 1972 is a \$120-\$150 billion a year market today.
- The principal loser from the relative stagnation of Latin America has been the United States, which supplies between 35 and 45 percent of their imports.
- The principal beneficiary from a Latin American economic take-off would be the United States. NAFTA would help spark such an acceleration of growth, and would cement U.S. producers' position as the preferred source of First World products in Mexico and the rest of Latin America.



- Today Mexico purchases some \$40 billion of U.S. goods each year—amounting to \$495 *per capita*, a significantly higher quantity than is purchased even by the much wealthier economies of Japan and Europe.
- Should Mexican economic reform be successful, Mexican economic growth will accelerate in the future.
- If Mexican growth over the next several decades matches that of the top quarter of developing countries in the past, and if the U.S. maintains its share of the Mexican market, then by 2010 the U.S. will be exporting more than \$125 billion a year to Mexico, and by 2020 the U.S. will be exporting nearly \$220 billion a year to Mexico.
- 2010 U.S. exports to Mexico of \$125 billion would amount to 1.5% of U.S. GDP, and support the jobs of more than two million workers.



- Mexico in 1992 imported more than \$490 of U.S. products *per capita*—a higher volume of *per capita* U.S. imports than purchased by the vastly richer Europeans or Japanese.
- The bulk of American products purchased by Mexico are for Mexican use. United States exports to “maquiladora” operations in Mexico comprised 22% of U.S. exports to Mexico in 1992, compared to 32% in 1987. Five-sixths of the growth in U.S. exports to Mexico in the last five years has been for Mexican use—not for reexport.
- A substantial share of U.S. exports to Mexico are made up of machinery—all industrializing countries, including Mexico, have a very strong demand for the capital goods made in the United States.
- Capital goods, however, make up a lower share of exports to Mexico than of all U.S. exports: Mexican consumers have an especially strong demand for U.S. consumer goods as well.

NAFTA and the Employment of Union Workers

Council of Economic Advisers, Executive Office of the President
Office of the Assistant Secretary for Economic Policy, U.S. Treasury

October 28, 1993

Summary

The growth of exports to Mexico over the past six years has increased demand for U.S. union workers. 24.6% of the workers employed in the industries that export the most to Mexico are covered by union contracts. By contrast, 19.2% of workers in industries that face the most competition from Mexican imports are covered by union contracts. As a result, expanded trade with Mexico has increased, not decreased, the relative demand of U.S. firms for union vis-a-vis nonunion workers.

NAFTA and Union Workers

Some observers fear a North American Free Trade Agreement would diminish the standard of living of U.S. workers and the level of employment in the United States. Many U.S. labor unions have been particularly concerned.

Our analysis suggests that these fears are greatly overdrawn. Detailed analysis indicates that the net effect of NAFTA will be to increase, not decrease, opportunities for union employment in the United States.

NAFTA will expand U.S.-Mexico two-way trade. U.S.-Mexico two-way trade has already grown significantly over the past six years: U.S. exports to Mexico today are three times what they were in 1987. And those U.S. industries that export the most to Mexico today are among the most heavily unionized in the country.

Industries that Export to Mexico

The recent expansion of exports to Mexico has shifted the distribution of U.S.

production and increased the demand for workers in more heavily-unionized occupations. There is good reason to believe that a further expansion of U.S.-Mexico trade under NAFTA would further stimulate demand for union workers.

The table below reports the fifteen groups of commodities, measured at the level of their three-digit Standard Industrial Classification (SIC), that exported the most to Mexico. Table 1 also reports estimates of the proportion of workers producing these commodities who are covered by union contracts, derived from Current Population Survey (CPS) reports of workers by Census Industrial Classification (CIC) code.

Some CIC codes cover more than one SIC code. Electronic components and electrical machinery, for example, fall under the same CIC code and thus have the same estimated unionization level.

The average level of workers covered by union contracts in the fifteen industries that

produced the most exports to Mexico in 1992 was 24.6 percent. Since union contracts cover 21 percent of manufacturing workers today, and little more than 12 percent for private-sector workers as a whole, workers in industries that export the most to Mexico are significantly more likely to be union members than the average.

Unionization and Top U.S. Exports to Mexico, 1992

(Million Dollars)			
Product Group	SIC Code	Exports	Percent Union
Motor vehicles	371	\$4,129	51.4
Elect. components	367	\$2,116	15.8
Misc. manufactures	3XX	\$1,522	NA
Elect. machinery	369	\$1,339	15.8
Cash grains	011	\$1,300	7.9
Office machinery	357	\$1,053	7.6
Aircraft	372	\$959	37.4
Non-ferrous metals	335	\$931	27.1
Blast furnace pdts.	331	\$912	50.1
Misc. plastic pdts.	308	\$903	14.0
Measuring insts.	382	\$900	9.8
Cons. machinery	353	\$879	25.3
Refinery products	291	\$863	32.9
Plastics	282	\$830	13.3
Meat products	201	\$814	23.4
Indust. machinery	356	\$801	18.0
Average			24.6

NA—Not available.

Sources—Current Population Survey; Bureau of Economic Analysis.

Industries that Import from Mexico

Not only do workers in industries that export to Mexico have higher than average unionization rates, they also have higher unionization rates than workers in industries that compete with imports from Mexico. Table 2 reports unionization levels for the fifteen industries that imported the most from Mexico in 1992.

19.2 percent of workers employed in the fifteen industries that imported the most from Mexico in 1992 were covered by union contracts—a unionization rate of only three-quarters the rate for those industries that export the most to Mexico.

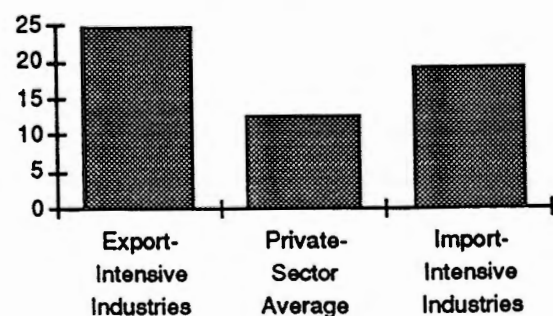
Unionization and Major Imports from Mexico, 1992

(Million Dollars)			
Product Group	SIC Code	Imports	Percent Union
Motor vehicles	371	\$5,487	51.4
Oil and gas	131	\$4,272	4.3
Elect. components	367	\$2,005	15.8
Elect. machinery	369	\$1,947	15.8
Radio & TV sets	365	\$1,755	15.3
Office machinery	357	\$1,053	7.6
U.S. goods (reimp.)	980	\$1,168	NA
Elect. lighting	364	\$895	15.8
Office machinery	357	\$813	7.6
Fabric. textiles	239	\$795	12.2
Furniture	259	\$742	22.9
Hshld appliances	363	\$725	33.3
Elec. ind. apparatus	362	\$664	15.8
Vegetables	016	\$639	3.1
Fruits	017	\$588	3.1
Fabricated metals	349	\$456	26.6
Non-ferrous metals	335	\$450	27.1
Average			19.2

NA—Not available.

Sources—Current Population Survey; Bureau of Economic Analysis.

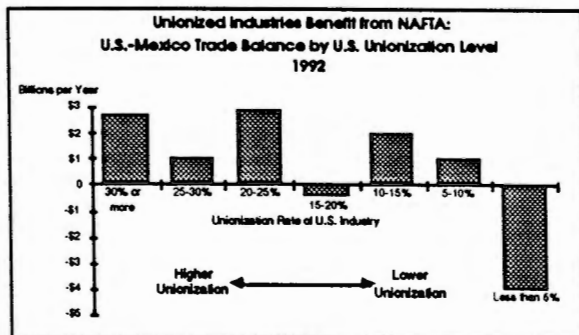
Unionization Rates: Major Exporting Industries, Major Importing Industries, and Private Sector Average (Percent)



Conclusion—More Jobs for Unions

Expanded trade with Mexico as a result of NAFTA is likely to increase the demand for union workers. First, NAFTA is likely to increase the U.S. bilateral trade surplus vis-a-vis Mexico—increasing exports to Mexico more than imports from Mexico. Exporting industries are substantially unionized.

Second, NAFTA and the expansion in U.S.-Mexico trade that it engenders is likely to shift relative demand in the U.S. further toward products produced by industries that have relatively high unionization rates. The expansion of trade with Mexico over the past five years has boosted demand for products made by high-union industries. NAFTA is likely to continue this process, creating job opportunities in the U.S. in industries in which unions are relatively strong.



The magnitude of these factors can be gauged from the figure above, which presents the 1992 bilateral trade balance of the U.S. with Mexico by the proportion of workers covered by union contracts. The U.S. has substantial trade surpluses with Mexico in industries that employ substantial numbers of

union workers. There are only two categories in which the U.S. runs a trade deficit with Mexico: industries in which fewer than five percent of workers are covered by union contracts, and there is a small deficit in those industries with 15-20% of workers covered by union contracts.

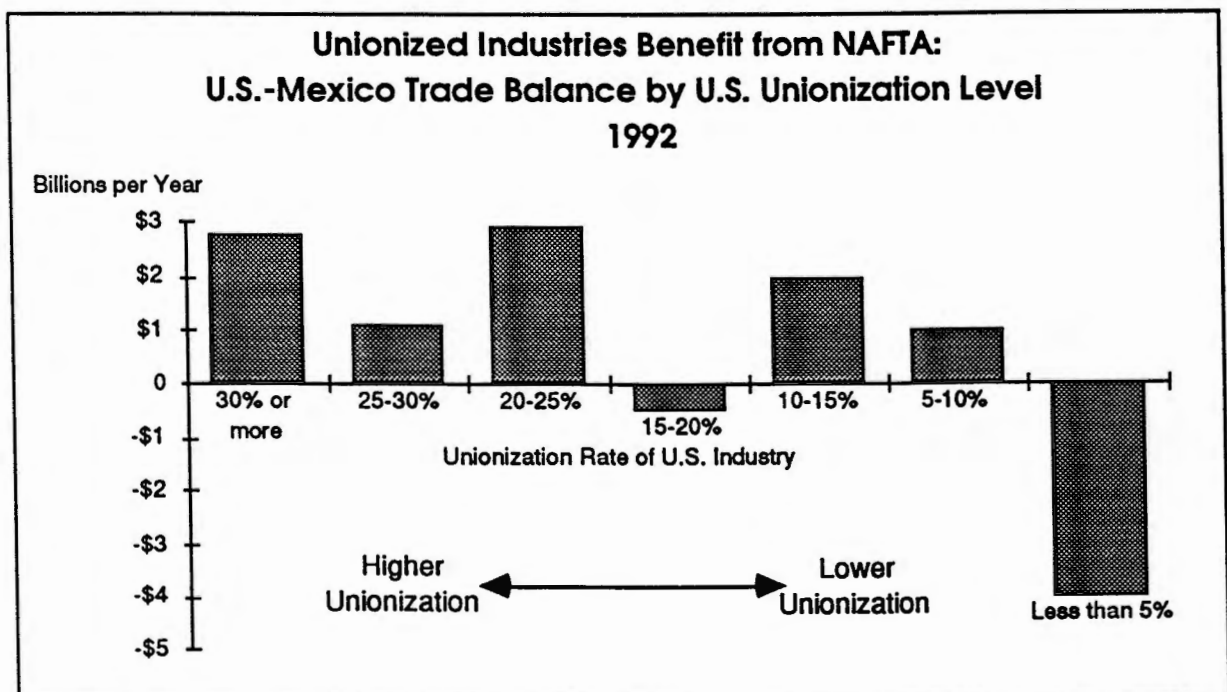
This analysis has used the distribution of trade with Mexico today to assess the likely consequences of further liberalization, through NAFTA, on the demand for union labor. There is one important factor, however, which leads this analysis to *understate* the benefits for union labor of NAFTA.

The distribution of trade with Mexico is now distorted by the legacy of Mexico's past protectionist policies. For example, industries—like motor vehicles and parts—that are relatively heavily unionized and are high on the import list rank as highly as they do only because of Mexico's current trade barriers: U.S. auto producers cannot export products to Mexico unless they import a larger quantity and value of products from Mexico. NAFTA is eliminating these Mexican non-tariff barriers—and removing Mexican tariffs on U.S. products that are on average more than twice U.S. tariffs on Mexican products.

Therefore as Mexico's tariff and non-tariff barriers come down the distribution of trade with Mexico will shift in a direction that will produce an even further increase in demand for those high-wage, high-skill, relatively heavily unionized industries in which Mexican demand for U.S. products is so strong.

UNION EMPLOYMENT AND NAFTA

- The U.S. runs a substantial surplus with Mexico in those industries that are heavily unionized. The fifteen industries that export the most to Mexico average 24.6% union—the private sector as a whole averages 12.7% union.
- The increase in trade with Mexico over the past six years has increased demand for U.S. workers in those occupations and industries with relatively high unionization levels.
- At present Mexican non-tariff barriers reduce U.S. exports to Mexico in high-wage high unionization industries like automobiles. NAFTA is removing these barriers. Under NAFTA Mexican demand for U.S. industrial products like motor vehicles, aircraft, electrical machinery, primary metals, construction machinery, and refinery products will increase even more.
- Thus NAFTA will increase U.S. firms' demand for workers in those occupations and industries that are heavily unionized.



U.S.- Mexican Manufacturing Trade: Overcoming Tariff Barriers and NAFTA

Economic and Statistics Administration and International Trade Administration, U.S.
Department of Commerce

October 26, 1993

Summary

The U.S. had a \$7.5 billion surplus in manufacturing trade with Mexico in 1992. This surplus was achieved in spite of Mexican tariffs which averaged 2.5 times as much as U.S. tariffs. Moreover, use of simple averages underestimates the size of Mexican barriers. Many important export industries have Mexican tariffs much more than 2.5 times U.S. tariffs.

U.S.-Mexican Manufacturing Trade

The United States had a \$7.5 billion manufacturing trade surplus with Mexico in 1992.¹ The U.S. manufacturing surplus was \$1.9 billion greater than the United States' \$5.6 billion surplus on all products.

The more favorable manufacturing balance arises principally because each year the U.S. imports approximately \$4 billion worth of oil each year from Mexico, while it exports only about \$2 billion of primary products—principally grains—south to Mexico.

Therefore, when manufactured goods are considered in isolation the U.S. trade surplus

is even greater. Hundreds of thousands of manufacturing jobs in the United States are supported by exports to Mexico.

The Level of Mexican Tariffs

The \$7.5 billion annual surplus in manufactured goods trade that the U.S. obtained in 1992 has been achieved despite Mexican tariffs which on average are 2.5 times higher than U.S. tariffs (10 percent vs. 4 percent).

The table on the following page demonstrates that for some of the most important U.S. export sectors, the difference between U.S. and Mexican tariffs is even greater. NAFTA will level this tariff playing field, reducing both U.S. tariffs and the much

¹See Department of Commerce, International Trade Administration, *U.S. Foreign Trade Highlights, 1992*.

higher Mexican tariffs to zero.

The items listed in the table constitute about half of U.S. exports to Mexico (total merchandise exports in 1992 were \$40.6 billion). These exports were achieved despite high current Mexican tariffs.

U.S. and Mexican Relative Tariff Rates In Manufacturing²

<u>Category</u>	<u>U.S. Tariff</u>	<u>Mexican Tariff</u>	<u>Share of U.S. Exports to Mexico</u>
Electrical machinery ^a	2.3%	14.2% ^d	17.8%
Telecom. equip.	0.2%	13.9%	* ³
Transportation equipment	1.5%	13.9%	13.7%
Autos	2.5% ^b	20%	*
Diesel engines	0	10%	*
Spark ignition engines	0 ^c	13.8%	*
Chemicals	1.2%	7.1%	7.3%
Fabricated metals	0.4%	14.7%	4.7%
Iron and steel products ^a	2.0%	13.9%	n.a. ⁴
Scientific instruments	0.4%	12.5%	3.6%
Computer equipment		16%	2.4% ^e

a) Tariff rates based on a trade-weighted average.

b) Tariff rate of 25% for light trucks.

c) Tariff rate of 3.1% for engines over 1,000 cc.

d) Based on 1989 tariff rates.

e) Includes software exports.

²Note: U.S. and Mexican tariff classifications are not identical, so the Mexican categories are close approximations of the U.S. categories. Unless otherwise designated, tariff rates are based on arithmetic averages across subcategories.

³* denotes subset of a larger category.

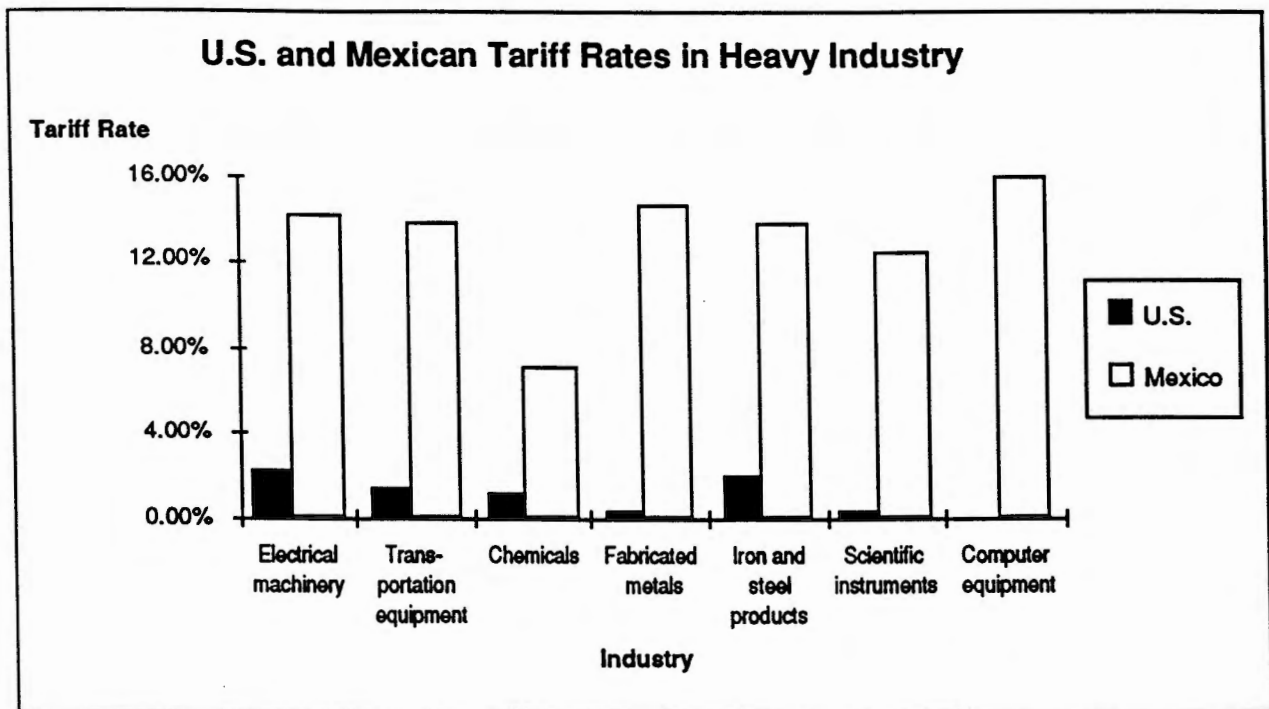
⁴Not available.

Clearly, U.S. exports in these areas—and many others—can be expected to increase as Mexico continues to grow and Mexican tariffs are cut, creating thousands of jobs in the U.S.

Non-Tariff Barriers

A level playing field on tariffs, however, is not the whole story. Mexico also has major non-tariff restrictions on imports that are not reflected in the table. These non-tariff barriers will be dismantled as part of NAFTA, as well.

The auto and auto parts industries are a good example. Vehicle manufacturers are required to export from Mexico \$2 worth of vehicles for every \$1 worth of imports. In addition, both vehicle and parts producers must comply with strict local content requirements. These provisions effectively require U.S. companies to manufacture in Mexico if they wish to sell in Mexico. All these impediments to U.S. exports will be phased down under NAFTA.



- At present, Mexican tariff rates exceed U.S. tariff rates by roughly 2.5-1 on average.
- The average, however, hides substantial variability. In the high-wage capital-intensive heavy manufacturing industries, Mexican tariffs are roughly ten times as high as U.S. tariffs.
- A simple comparison of tariff rates understates the magnitude of the difference in trade barriers: Mexico possesses stringent non-tariff restrictions on trade as well—which NAFTA will eliminate.
- For example, motor vehicle manufacturers are required to export from Mexico \$2 worth of vehicles for every \$1 worth of vehicles that they import. Both vehicle and parts producers must comply with strict local content requirements. These provisions effectively require U.S. companies to manufacture in Mexico if they wish to sell in Mexico, and to manufacture more in Mexico than they sell in Mexico.

NAFTA and Relative Wages in the U.S. and Mexico

Office of the Assistant Secretary for Economic Policy, U.S. Treasury
Council of Economic Advisers, Executive Office of the President

October 26, 1993

Summary

Critics of NAFTA claim that Mexican competition is not fair competition. They argue that Mexican wages are "artificially depressed" to "Third World levels." They point to the failure of manufacturing wages to rise as fast as manufacturing productivity, and call it evidence that Mexican competition is unfair.

But in the U.S. as well as in Mexico manufacturing wages have not kept pace with manufacturing productivity. As a rule, manufacturing wages rise not with manufacturing productivity but with economy-wide average productivity.

A full look at the evidence leads to the conclusion that Mexican real wages are at levels that are appropriate given the low productivity of Mexico's workers. Competition with Mexico will be fair competition. Moreover, NAFTA will lead to growth and increased wages in Mexico. Thus NAFTA will reduce the attractiveness of Mexico to industries seeking to locate production where labor is cheapest.

Mexican Wage Trends: The Issue

The North American Free Trade Agreement (NAFTA) binds the U.S. and Mexico to eliminate barriers to international trade. It allows American producers and goods free access to the rapidly-expanding Mexican market.

Some critics of NAFTA paint apocalyptic pictures of U.S. companies fleeing to Mexico in pursuit of low-cost Mexican labor. They rely implicitly on a false and naive model in which producers seek always to locate production where wages are the lowest.

That this implicit model is false is shown by the United States's \$7.5 billion surplus in manufacturing trade with Mexico in 1992. Producers of manufactured goods have preferred to locate in the United States rather than Mexico despite lower U.S. wages, and despite trade barriers against shipments from the United States to Mexico that are much higher than barriers to shipments from Mexico to the U.S.

Because Mexican workers have low productivity, Mexican wages cannot help but

being low—but Mexico's low wages are in general not a bargain for manufacturing employers.

Other critics recognize the falsity of the argument that in the absence of Mexico production in Mexico must be attractive to businesses because wages are low. They make a more sophisticated argument. The problem that they claim to see is not that Mexican wages are low, but that Mexican wages are kept *artificially* low by anti-labor government policies.

Such critics claim that a gap exists between Mexican wages and productivity as a result of authoritarian government action. If not for the oppressive hand of the Mexican government, Mexico's wages would be higher relative to U.S. levels.

For example, NAFTA critic Harley Shaiken writes that Mexico is characterized by "artificially depressed Third World wages." NAFTA critic Jeff Faux writes of "the government's policy of keeping wages depressed in order to attract foreign capital."

But the argument that Mexican competition is unfair because of the gap between Mexican and U.S. wage levels is based on a serious misreading of the evidence. In fact, Mexico's wage level is appropriate given its generally low level of productivity.

Moreover, NAFTA is likely to raise wages in Mexico relative to the United States. The Mexican economic reform and liberalization program—of which NAFTA is a

key part—has seen relative wages in Mexico rise since its beginning in 1987. NAFTA is likely to continue and accelerate these trends. Thus NAFTA will reduce the attractiveness of Mexico to industries that base location decisions on low labor costs alone.

Wage and Productivity Patterns

Are Mexican wages in fact being kept artificially low relative to U.S. levels? Some observers misread the evidence, and claim that a more rapid growth rate of manufacturing productivity than manufacturing wages is evidence that they are. But the argument that the gap between productivity and wage growth in manufacturing reflects successful anti-labor policies is a serious misinterpretation.

Over the long run, economists anticipate that the economy-wide average real wages will grow in line with overall economy-wide labor productivity. Competition from high-wage employers will induce low-wage employers to raise wages, and prevent the unbounded growth of wage differentials across industries.

But economists also anticipate that manufacturing productivity growth will outstrip economy-wide average productivity growth. This is the essence of the industrial revolution: the process of ongoing improvement in manufacturing productivity. Manufacturing wages rise at about the average rate of wage increase, and manufacturing productivity grows much faster than average

productivity—hence a widening lag between manufacturing productivity and manufacturing wages.

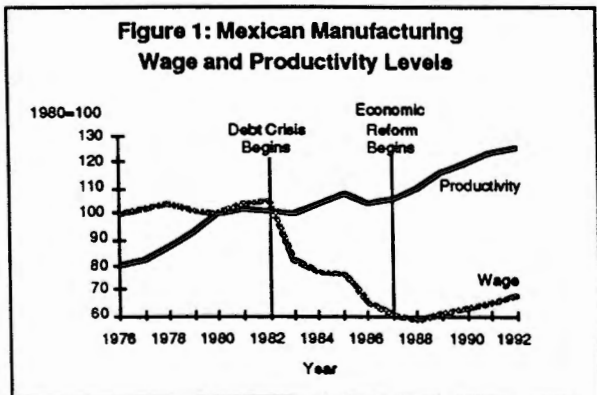
This pattern is equally true for nineteenth century Britain, twentieth century Mexico, and the twentieth century United States. The real wage in U.S. manufacturing has hardly grown at all since the 1970s. The reason? Economy-wide average productivity growth has been slow. But manufacturing productivity growth has increased by nearly forty percent. In the United States as well as in Mexico, there is a wide gap between manufacturing productivity growth and manufacturing wage growth

Wages dropped dramatically after 1982, but not as a result of government intervention. Wages dropped as a result of the debt crisis and the associated economic collapse that gripped Mexico in the early 1980s.

The debt crisis years from 1982 to 1987 saw Mexican productivity rise by little. However, productivity resumed its upward course after the beginning of Mexico's economic liberalization and reform program in 1987. And Mexican real wages as well began to rise, as trade liberalization and policy reform took hold.

The Role of the Debt Crisis

In the short run, external shocks and business cycles can lead to significant deviations of wage levels from their long-run trends. Figure 1 shows that manufacturing productivity in Mexican industry grew by twenty percent from the mid-1970s to 1982. Real manufacturing wages held steady over this period.



The Economic Solidarity Pact

Some critics of NAFTA have argued that the creation of the "Economic Solidarity Pact" in Mexico in 1987 is a principal mechanism by which the government has kept wages artificially depressed. In its conception and operation, the pact is similar to the "incomes policies" that were adopted in many European countries by Social Democratic governments in the 1970s. Labor movements agree to moderate wage inflation if firms commit to hold down price increases.

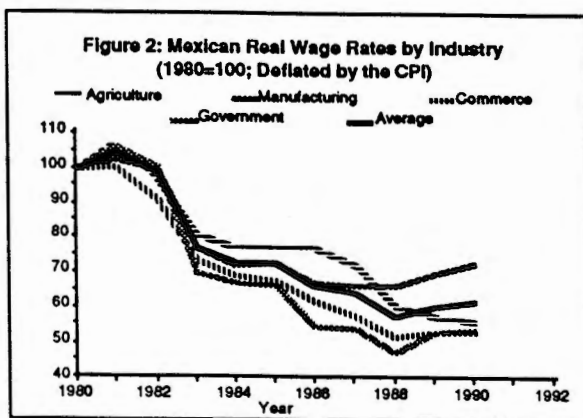
Such arrangements were looked on favorably by a wide spectrum of left and centrist economists in the 1970s. They promised to bring down inflation without causing recession and unemployment.

The pact appears to have succeeded in containing inflation and fostering recovery. As figure 1 showed, it has been accompanied by rising real wages: the period of falling real wages is the pre-pact period of the 1980s.

prevented Mexican manufacturing wages from rising.

Mexican Wages and Reform

Figure 2 shows relative wage levels in different sectors of the Mexican economy. It shows that wages in all Mexican industries move closely together: the levels of real manufacturing wages, and wages in other sectors, have in fact been determined as a result of economy-wide forces.



In fact, manufacturing wages declined less than other sectors during the debt crisis, and have recovered more rapidly since the initiation of economic reform. Manufacturing wages in Mexico have risen somewhat more than one would have anticipated in recent years, given the economic wide forces that have been at work.

That wages in manufacturing have advanced relative to other sectors in recent years suggests that the Mexican government is

not depressing manufacturing wages, in order to make Mexico a more attractive export platform.

In fact, the policies undertaken by the Salinas government have made Mexico much less attractive as a potential low-wage export platform. Figure 3 shows the average compensation of Mexican manufacturing workers, measured in dollars as a percentage of the average wage of manufacturing workers in the United States. This ratio is determined by U.S. wages in dollars, Mexican wages in pesos, and the dollar-peso exchange rate.

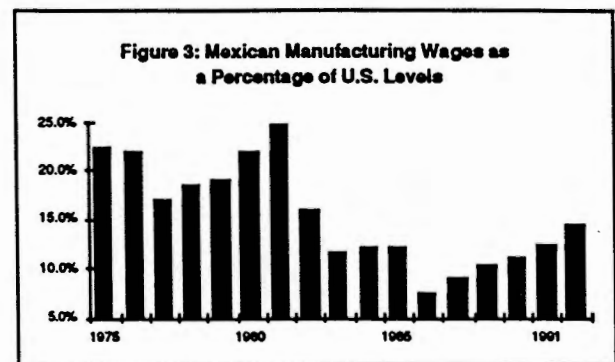


Figure 3 shows that the relative attractiveness, based on labor costs alone, to a business of locating its operations in Mexico reached its peak in the mid-1980s, as the peso reached its lowest value during the Third World debt crisis. With reform in 1987, real wages in pesos and the Mexican exchange rate both began to rise.

If NAFTA is successfully implemented and Mexican liberalization continues, we expect to see further increases in the level of

Mexican manufacturing wages relative to the United States. NAFTA will steadily reduce the attractiveness of Mexico to industries that base location decisions on basic labor costs alone.

Mexican Wage Levels Are Appropriate Given Low Mexican Productivity

The World Bank has calculated that in 1991 U.S. manufacturing compensation was 4.7 times higher than compensation in Mexico. But even with such a large gap, Mexican manufacturing wages were in a sense too high: the \$7.5 billion U.S. surplus in United States-Mexican trade that was seen in 1992 shows that consumers in the U.S. and Mexico found that U.S. manufactured goods provided better value for the money.

U.S. manufacturing productivity is higher than Mexican by approximately the difference in wage rates. On average, it takes almost five Mexican workers to produce as much as one U.S. worker. It is unit labor costs, not wages *per se*, that determine the profitability of hiring workers in the two countries—and the likely redistribution of manufacturing employment that will result from an opening up of trade.

We know that low wage levels in an economy do not by themselves make it advantageous for firms to produce in that economy: if they did, all the most profitable factories in the world would have relocated to Bangladesh decades ago.

Mexican wages are low for a reason—the average level of productivity in Mexico is low. And the average level of productivity in Mexico is low because it lacks the capital and its workers lack the skills to attain First World levels of average productivity. Only one-fifth of the Mexican population, for example, has finished high school.

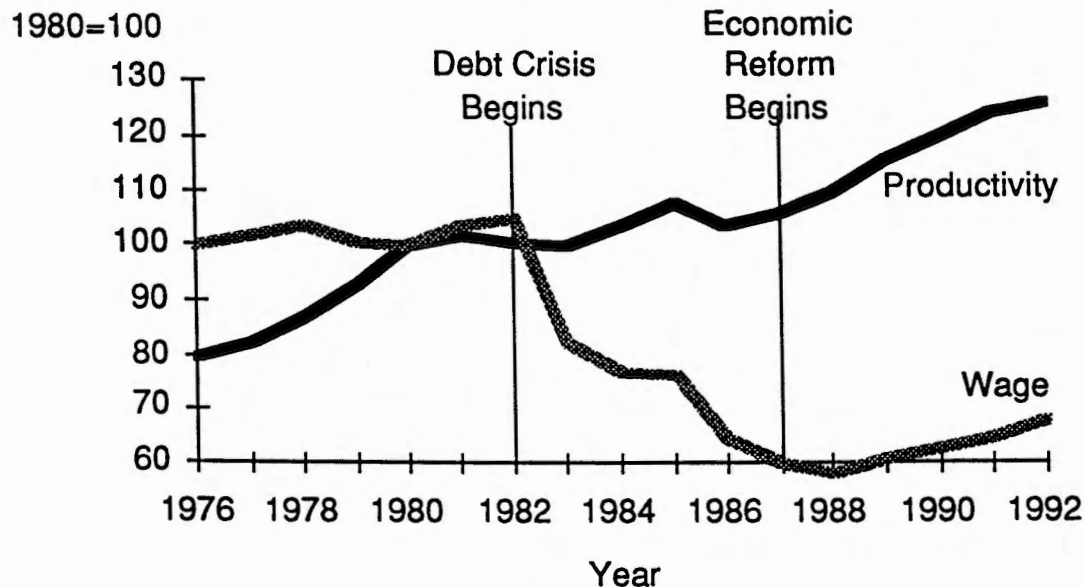
Thus a close look leads to the rejection of the claim, made by some critics of NAFTA, that the failure of manufacturing wages to rise as fast as manufacturing productivity is evidence that Mexican competition is not fair competition.

As a rule, manufacturing wages rise more slowly than manufacturing productivity, but alongside average productivity in the economy as a whole. In the United States as well as in Mexico, manufacturing wages fail to keep pace with manufacturing productivity.

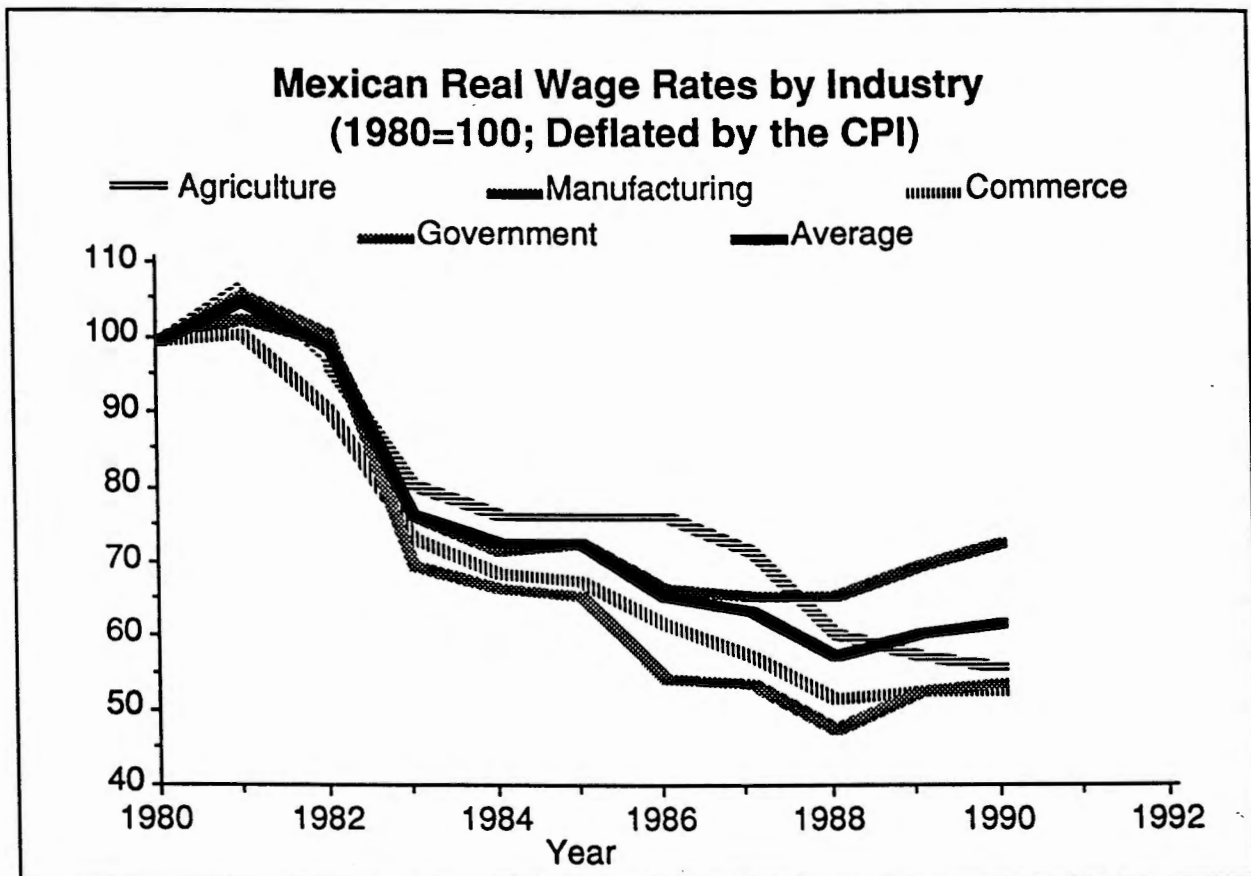
A careful look at the evidence leads to the conclusion that the low level of Mexican real wages relative to the United States is not the result of government policies that push Mexican wages to “artificially depressed Third World” levels. Mexican real wages are at levels that are appropriate for Mexico, given the country’s poverty and the low productivity of its workers.

As in other countries, Mexico’s real wages rise in line with increases in overall economy-wide productivity in times of economic advance, and fall in times of economic crisis.

Mexican Manufacturing Wage and Productivity Levels

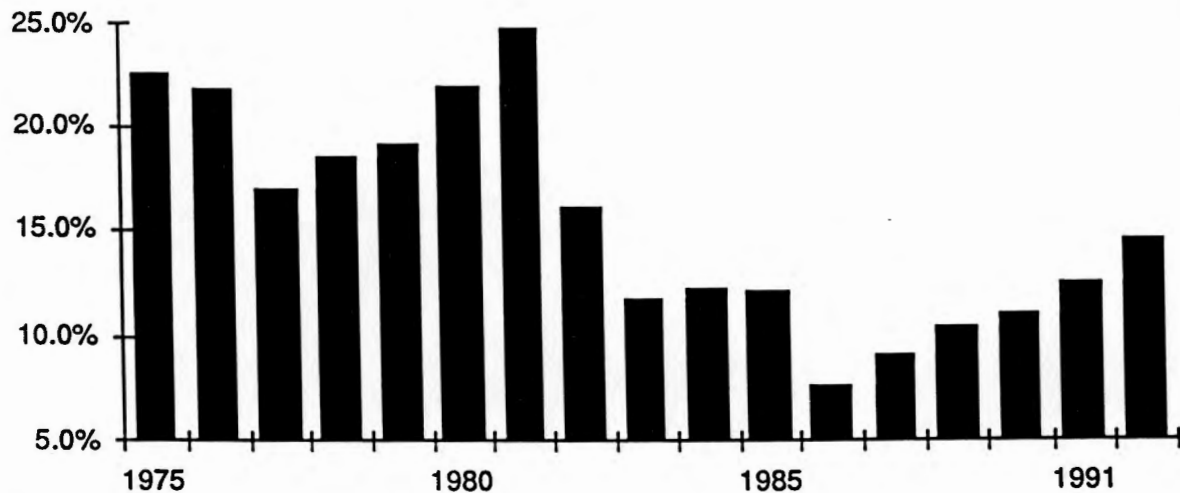


- Some critics of NAFTA argue that the creation of the “Economic Solidarity Pact” in 1987 is the principal mechanism by which the government keeps real wages artificially depressed.
- But when real wages fell in the 1980s, they fell before the 1987 creation of the Pact—they fell not because of the Solidarity Pact but because of the Third World debt crisis.
- Real wages in Mexico began to rise in 1987, when the economic reforms of which the Solidarity Pact was a component were introduced.
- Real wages in manufacturing have been rising since 1987: the pact has been successful in containing inflation, fostering economic recovery, and encouraging the growth of real wages.
- A continuation of the reform program—of which NAFTA is a key component—is the best method to keep Mexican real wages rising.



- Some critics claim that Mexican real wages in manufacturing have been artificially depressed by government policies attempting to make Mexico an attractive low-wage export platform.
- Declines in Mexican real wages in manufacturing in the 1980s were the result of economy-wide forces—the Third World debt crisis. Wages in all sectors of the economy follow roughly the same pattern.
- Wages in manufacturing fell by less in the mid-1980s and have risen by more in recent years than wages in the average Mexican industry. Manufacturing wages are forty percent higher relative to government-sector wages than they were in 1980.

Mexican Manufacturing Wages as a Percentage of U.S. Levels



- Relative to U.S. levels, Mexican real manufacturing wages fell very steeply in the mid-1980s as the Third World debt crisis crippled the Mexican economy.
- Mexican wages have been rising rapidly since 1987 as a proportion of the U.S. level. In 1987 President Salinas began his economic reforms—which caused real wages to rise in Mexico and which gave international investors more confidence in the Mexican economy, leading to an appreciation of the peso.
- A firm that bases its location decision on where wages are lowest would find Mexico less than half as attractive today as in 1986: Mexican wages are twice as large a proportion of U.S. wage levels now as they were then.
- A continuation of Mexican economic reform—of which NAFTA is a key component—is the best route to take to keep Mexican wages relative to U.S. levels on an upward trend, and to reduce Mexico's raw labor cost advantage vis-a-vis the United States.

Studies of the Economic Impact of NAFTA

Council of Economic Advisers
Executive Office of the President

October 20, 1993

Summary

The NAFTA may be the most thoroughly studied trade agreement in history. A review of the major studies of NAFTA's economic impact indicate a broad consensus on key points in the NAFTA debate: (1) All three NAFTA countries gain from the agreement. (2) In the U.S., labor will gain through increased employment, increased wages, or both. (3) Increased investment in Mexico will not be at the expense of investment in the U.S. The few studies reaching contrary conclusions have been strongly criticized by academic and other professional economists.

In his speech signing the side agreements to NAFTA, the President stated that nineteen out of twenty serious studies showed that NAFTA was good for the U.S. economy in general and labor in particular. A list of the major studies of the economic impact of NAFTA is attached. Of the twenty comprehensive studies listed, nineteen find that NAFTA is good for U.S. labor, leading to either increased employment, increased wages, or both.

Both past experience with trade liberalization and economic theory indicate that increased international trade benefits all participants. Given the lessons from history, it is hardly surprising that virtually all the studies that analyze the potential gains from trade liberalization find that NAFTA would benefit all three countries.

In a recent letter to the President, 286 academic economists, including 13 Nobel prize winners, expressed their support for NAFTA, stating: "While we may not

agree on the precise employment impact of NAFTA, we do concur that the agreement will be a net positive for the United States, both in terms of employment creation and overall economic growth." The support for NAFTA among academic economists and serious researchers is simply overwhelming.

With the exception of a few studies, discussed below, the overwhelming conclusion from the large body of work assessing the economic effects of NAFTA is that NAFTA is good for all three countries.

All in all, an impressive array of academic, government, and business analyses of the economic impact of NAFTA have been done. NAFTA is probably the most thoroughly studied trade agreement in history. These studies have been extensively surveyed by impartial researchers at, for example, the International Trade Commission (ITC), the Congressional Budget Office (CBO), the General Accounting Office (GAO), and the Brookings Institution.

The ITC concludes: "Despite the different approaches taken in these studies, there is a surprising degree of unanimity in their results regarding the aggregate effects of a NAFTA. All three countries are expected to gain from a NAFTA. The greatest impact will on the Mexican economy, with less impact on the Canadian and U.S. economies."

The CBO report concludes: "A thorough review of the myriad changes brought about by NAFTA, and of their interactions, leads to the single resounding conclusion that the net effect on the U.S. economy would be positive and very small. . . . Contrary to some commonly expressed concerns, the reallocation of resources would not be massive. Americans should not fear that NAFTA would cause a wholesale relocation of U.S. manufacturing plants and jobs to Mexico to take advantage of the lower average wage."

The Brookings Institution survey concludes: "A consensus emerged . . . that the direct economic effects of NAFTA will be small for both Mexico and the United States. . . . [M]any of the changes in commercial relations that are often associated with NAFTA in public discussions have already occurred, and others will be spread over future years. . . . The general consensus of the studies . . . is that NAFTA will raise the average wage of U.S. workers and that the effect on low-wage workers will be negligible."

The GAO review concludes: "With the exception of a few U.S. policy analysis groups, the economic researchers in general agree that NAFTA would bring a small overall economic benefit to the U.S. and

Canadian economies, and a larger benefit to the Mexican economy."

The one comprehensive study that found negative results is a paper by the Economic Policy Institute (EPI), written by Jeff Faux and William Spriggs (item 17 on the attached list), which drew on a model developed by Raul Hinojosa and Robert McCleery. This study found that 550,000 jobs were "lost" due to NAFTA, a number which has been widely cited by EPI in various press releases. However, the number largely consists of jobs "lost" due to return migration of workers from the U.S. to Mexico. In the scenarios generating this result, growth in Mexico raises Mexican wages, yielding return migration and higher wages in the U.S. These are not jobs "lost" by American workers, but rather U.S. jobs foregone by Mexican workers for whom NAFTA will provide increased income at home.

Hinojosa and McCleery wrote a letter to Faux, the President of EPI, complaining about what they considered to be a gross misuse of their model. The ensuing debate is described in a recent article by Robert Wright in The New Republic (November 1, 1993, p. 42). Wright is very critical of the EPI work, using terms like "anti-NAFTA misinformation."

The studies listed under the heading "Studies with selective consideration of certain issues" are the ones often cited as indicating that NAFTA is bad for the U.S. There are two by the Economic Strategy Institute (ESI), whose President, Clyde Prestowitz, initially argued that NAFTA would be bad for the U.S. Since then, Prestowitz has changed his mind. In an article titled "Time for NAFTA" (Economic

Strategy Institute, News and Notes, Vol. 1, No. 4, summer/fall 1993), he concludes: "Even with its imperfections, NAFTA will leave America better off than before." He notes: "The barriers that are being removed are mostly on the Mexican side. Ironically their removal may actually reduce incentives for U.S. firms to move south."

Critics of NAFTA, including EPI, often cite a study by Edward Leamer, a Professor at UCLA, as indicating that NAFTA will lower wages for non-professional workers in the U.S. by up to \$1,000 a year. Those who have reviewed the Leamer paper note that it does not refer to NAFTA, but extrapolates from trends in the 1970s and 1980s. Robert Wright (The New Republic, Oct. 11, 1993, pp. 23-25) interviewed Leamer, who said that the use of his study by EPI was "extremely misleading." Leamer, in fact, supports NAFTA.

The study of NAFTA by Koechlin, Epstein, Bowles, and Larudee argues that NAFTA will lead to the loss of 290 to 490 thousand jobs in the U.S. The chain of argument in this article, however, is deeply flawed. They assume that: (1) NAFTA will generate increased foreign investment in Mexico; (2) much of this increased investment will come from the U.S.; and (3) increased U.S. investment in Mexico will reduce aggregate investment in the U.S., dollar for dollar, and lead to job losses as capital moves to Mexico. While the first two steps in this chain are reasonable, the final step is nonsense.

The Congressional Budget Office (CBO), in chapter 2 of their study of NAFTA (A Budgetary and Economic Analysis of the North American Free Trade

Agreement), examined the question of investment diversion carefully, using a multi-country macro model. In a section entitled "Increased Investment in Mexico Is Not At the Expense of Investment in the United States" they conclude (p.26):

"A popular view holds that individual plant migrations would combine in a 'great sucking sound' as large amounts of net investment and jobs flow out of the United States into Mexico. This view rests on a misconception. Particular events in which capital appears to move to Mexico would be offset by others in which new capital, some from outside North America, flows to new investment projects in the United States."

In a review of the Koechlin *et al.* model in a book edited by N. Lustig, B. Bosworth, and R.Z. Lawrence (North American Free Trade: Assessing the Impact), Hinojosa and Robinson (pp. 85-86) conclude:

"There is no theoretical or empirical reason to think that these investment changes will have any effect at all on aggregate investment [in the United States]. In fact, EC experience after Spanish and Irish accession suggests that NAFTA should increase direct foreign investment (DFI) into the United States."

NAFTA Impact Studies that Provide Results for the U.S. Economy

COMPREHENSIVE STUDIES

Macroeconomic Models

1. INFORUM-CIMAT (Clopper Almon, Univ of Maryland)
2. DRI/McGraw-Hill

Static Computable General Equilibrium (CGE) Models

3. Boyd, Krutilla, and McKinnery (Ohio Univ & Baylor)
4. U.S. International Trade Commission (USITC)—February 1991
5. U.S. International Trade Commission (USITC)—January 1993
6. KPMG Peat Marwick (Bachrach & Mizrahi)
7. Hinojosa and Robinson (UC Berkeley)
8. Robinson, Burfisher, Hinojosa, and Thierfelder (UC Berkeley and USDA)
9. Burfisher, Robinson, and Thierfelder (USDA, UC Berkeley, US Naval Academy)
10. Hinojosa, Robinson, and Wolff (UCLA and UC Berkeley)
11. Trela and Whalley (Univ of Western Ontario)
12. Brown, Deardorff, and Stern (Univ of Mich)—June 1991
13. Brown, Deardorff, and Stern (Univ of Mich & Tufts)—Oct 1992
14. Roland-Holst, Reinert, and Shiells (Mills College & USITC)
15. Hunter, Markusen, and Rutherford (San Diego St, Colorado, Western Ontario)

Dynamic Computable General Equilibrium (CGE) Models

16. Hinojosa and McCleery (UC Berkeley and East-West Center)
17. Economic Policy Institute (EPI)¹
18. McCleery (East-West Center)

Analogy to Other Liberalizations

19. Institute for International Economics—IIE (Hufbauer & Schott)—February 1992
20. Institute for International Economics—IIE (Hufbauer & Schott)—February 1993

STUDIES WITH SELECTIVE CONSIDERATION OF CERTAIN ISSUES

1. Economic Strategy Institute—ESI (Prestowitz *et al.*)(1991)
2. Economic Strategy Institute—ESI (Chimerine & Cohen)(1992)
3. Koechlin, Epstein, Bowles, and Larudee (Skidmore & Univ Mass)
4. Leamer (UCLA and NBER)
5. Choate (Ross Perot)

¹This is the only comprehensive study finding a net job loss from NAFTA.

NAFTA Impact Studies that Provide Results only for Mexico

1. Adams, del Rio, and Adams (Univ of Pennsylvania)
2. Kehoe (Univ. of Minnesota)
3. Levy and van Wijnbergen (Boston Univ and World Bank)
4. Sobarzo (Colegio de Mexico)
5. Young and Romeo (Univ. of Texas and Colegio de Mexico)

NAFTA Impact Studies that Provide Results Only for Canada

1. Cox and Harris (Univ of Waterloo and Simon Fraser Univ)

Reviews of NAFTA Impact Studies

1. Brookings Institution--Lustig, Bosworth, and Lawrence
2. Congressional Research Service (CRS)--Bolle
- 3/4. Congressional Budget Office (CBO)--Arnold and staff study
5. U.S. Department of Labor--Schoepfle & Perez-Lopez
6. U.S. General Accounting Office--staff study
7. U.S. International Trade Commission (USITC)--staff study

NAFTA IMPACT STUDIES

NAFTA Impact Studies that Provide Results for the U.S. Economy

COMPREHENSIVE STUDIES

Marcoeconometric Forecasting Models

1. INFORUM-CIMAT (Clopper Almon, University of Maryland)
Interindustry Economic Research Fund, Inc., "Industrial Effects of a Free Trade Agreement Between Mexico and the USA." Prepared under contract to the U.S. Department of Labor, Clopper Almon, University of Maryland, principal investigator, September 1990.
2. DRI/McGraw-Hill
DRI/McGraw-Hill, "The Impact of the North American Free Trade Agreement on U.S. Regional and Sectoral Labor Markets," Lexington, MA, August 1992, Appendix B in National Commission for Employment Policy, The Employment Effects of the North American Free Trade Agreement Recommendations and Background Studies, Special report No. 33 (Washington, DC: National Commission for Employment Policy, October 1992)

Static Computable General Equilibrium (CGE) Models

3. Boyd, Drutilla, and McKinnery (Ohio University and Baylor University)
Boyd, Roy G., Kerry Drutilla, and Joseph A. McKinney, "The Impact of Tariff Liberalization between the United States and Mexico: An Empirical Analysis," Applied Economics 25 (1993), 81-89.
4. U.S. International Trade Commission (USITC)—February 1991
U.S. International Trade Commission, The Likely Effects on the United States of a Free Trade Agreement with Mexico, USITC Publication 2353 (Washington, DC February 1991)
5. U.S. International Trade Commission (USITC)—January 1993
U.S. International Trade Commission, Potential Impact on the U.S. Economy and Selected Industries of the North American Free-Trade Agreement, USITC Publication 2596 (Washington, DC, January 1993).
6. KPMG Peat Marwick (Bachrach and Mizrahi)
KPMG Peat Marwick, Policy Economics Group, "The Effects of a Free Trade Agreement between the United States and Mexico," prepared under contract to the U.S. Council of the Mexico-U.S. Business Committee (Washington, DC, May 1, 1991); see also, Bachrach, Carlos, and Loris Mizrahi, "The Economic Impact of a Free Trade Agreement Between the United States and Mexico: A CGE Analysis," Pp. 39-79 in U.S. International trade Commission, Economy-Wide Modeling of the Economic Implications of a FTA with Mexico and a NAFTA with Canada and Mexico, USITC Publication 2508 (Washington, DC: U.S. International Commission, May 1992).
7. Hinojosa and Robinson (University of California at Berkeley)
Hinojosa-Ojeda, Raul, and Sherman Robinson, "Alternative Scenarios of U.S.-Mexico Integration: A Computable General Equilibrium Approach." Working paper No. 609, Department of Agriculture and Resource Economics, University of California at Berkeley, April 1991.
8. Robinson, Burfisher, Hinojosa, and Thierfelder (Univ of Calif at Berkeley and U.S. Dept of Agriculture)
Robinson, Sherman, Mary E. Burfisher, Raul Hinojosa-Ojeda, and Karen E. Thierfelder, "Agricultural Policies and Migration in a U.S.-Mexico Free Trade Area: A Computable General Equilibrium Analysis."

- Working paper No. 617, Department of Agricultural and Resource Economics, University of California at Berkeley, December 1991; also reprinted Pp. 457-507 in U.S. International Trade Commission, Economy-Wide Modeling of the Economic Implications of a FTA with Mexico and a NAFTA with Canada and Mexico, USITC Publication 2508 (Washington, DC: U.S. International Trade Commission, May 1992).
9. Burfisher, Robinson, and Thierfelder (US Dept. of Agric, UC Berkeley, US Naval Academy)
Burfisher, Mary, Sherman Robinson, and Karen Thierfelder, "Agricultural and Food Policies in a U.S.-Mexico Free Trade Area," The North American Journal of Economics and Finance 3:2 (Fall 1992), 117-139.
 10. Hinojosa, Robinson, and Wolff (University of California at Los Angeles and UC Berkeley)
Hinojosa-Ojeda, Raul, Sherman Robinson, and Goetz Wolff, "The Impact of a North American Free Trade Agreement on California: A Summary of Key Research Findings." Working Paper No. 3, Lewis Center for Regional Policy Studies, Graduate School of Architecture and Urban Planning, University of California at Los Angeles, September 1992.
 11. Trela and Whalley (University of Western Ontario)
Trela, Irene, and John Whalley, "Bilateral Trade Liberalization in Quota Restricted Items: U.S. and Mexico in Textiles and Steel," paper presented at a conference titled "North American Free Trade: Economic and Political Implications," Center for Strategic and International Studies, Washington, DC, June 1991; see also, Trela, Irene, and John Whalley, "Trade Liberalization in Quota Restricted Items: U.S. and Mexico in Textiles and Steel," World Economy 15:1 (January 1992), 45-63.
 12. Brown, Deardorff, and Stern (University of Michigan and Tufts University)—June 1991
Brown, Drusilla K. Alan V. Deardorff, and Robert M. Stern, "A North American Free Trade Agreement: Analytical Issues and a Computational assessment," Institute of Public Policy Studies, mimeo, University of Michigan, June 24, 1991; and revised version, October 18, 1991; subsequently published in World Economy 15:1 (January 1992), 11-29.
 13. Brown, Deardorff, and Stern (University of Michigan and Tufts University)—October 1992
Stern, Robert M. Alan V. Deardorff and Drusilla K. Brown, "A U.S. Mexico-Canada Free Trade Agreement: Sectoral Employment Effects and Regional/Occupational Employment Realignment in the United States," University of Michigan, Institute of Public Policy Studies, September 2, 1992, Appendix A in National Commission for Employment Policy, October 1992).
 14. Roland-Holst, Reinert, and Shiells (Mills College and USITC)
Roland-Holt, David, Kenneth A. Reinert, and Clinton R. Shiells, "North American Trade Liberalization and the Role of Nontariff Barriers." Pp.523-580 in U.S. International Trade Commission, Economy-Wide Modeling of the Economic Implications of a FTA with Mexico and a NAFTA with Canada and Mexico, USITC Publication 2508 (Washington, DC: U.S. International Trade Commission, May 1992)
 15. Hunter, Markusen, and Rutherford (San Diego State, Colorado, and Western Ontario)
Hunter, Linda, James R. Markusen and Thomas F. Rutherford, "U.S.-Mexico Free Trade and the North American Auto Industry: Effects on the Spatial organization of Production of Finished Autos." Paper presented at a conference titled "North American Free Trade: Economic and Political Implications." Center for Strategic and International Studies, Washington, DC, June 1991; subsequently published in World Economy 15:1 (January 1992), 65-81; see also, Hunter, Linda, James R. Markusen, and Thomas F. Rutherford, "Trade Liberalization in a Multinational-Dominated Industry: A Theoretical and Applied General Equilibrium Analysis." Pp. 39-42 in Federal Reserve Bank of Dallas, North American Free Trade: Proceedings of a Conference (Dallas, TX, June 1991); revised december 1991, Pp. 187-223 in U.S.

International Trade Commission, Economy-Wide Modeling of the Economic Implications of a FTA with Mexico and a NAFTA with Canada and Mexico, USITC Publication 2508 (Washington, DC: U.S. International Trade Commission, May 1992).

Dynamic Computable General Equilibrium (CGE) Models

16. Hinojosa and McCleery (UC Berkeley and East-West Center)
Hinojosa-Ojeda, Raul, and Robert K. McCleery, "U.S.-Mexico interdependence, Social Pacts and Policy Alternatives: A computable General Equilibrium Approach." Working Paper No. 596, Department of Agricultural and Resource Economics, University of California at Berkeley, March 22, 1991; reprinted, Pp. 113-154 in J.A. Bustamante, C.W. Reynolds, and R.A. Hinojosa Ojeda (eds.), U.S.-Mexico Relations: Labor Market Interdependence (Stanford, CA: Stanford University Press, 1992)
17. EPI -- Economic Policy Institute (Faux and Spriggs)
Faus, Jeff, and William Spriggs, U.S. Jobs and the Mexico Trade Proposal, Briefing Paper (Washington, DC: Economic Policy Institute, May 1991); see also, Spriggs, William E. Economic Policy Institute, "Potential Effects of Direct Foreign Investment Shifts Due to the Proposed U.S.-Mexico Free Trade Agreement," testimony before the Subcommittee on Commerce, Consumer Protection and Competitiveness of the U.S. House of Representatives Committee on Energy and Commerce, May 15, 1991.
18. McCleery (East-West Center)
McCleery, Robert K., "An Intertemporal, Linked, Macroeconomic CGE Model of the United States and Mexico Focussing on Demographic Change and Factor Flows." Pp. 371-441 in U.S. International Trade Commission, Economy-Wide Modeling of the Economic Implications of a FTA with Mexico and a NAFTA with Canada and Mexico, USITC Publication 2508 (Washington, DC: U.S. International Trade Commission, May 1992).

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19. Institute for International Economics--IIE (Hufbauer and Schott)--February 1992
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2. Economic Strategy Institute -- ESI -- 1992
Chimerine, Lawrence, and Robert Cohen, "NAFTA: Making It Better" (Washington, DC: Economic Strategy Institute, 1992).

3. Koechlin, Epstein, Bowles, and Larudee (Skidmore and Univ of Mass at Amhers)
Koechlin, Timothy, Gerald Epstein, Samuel Bowles, and Mehrene Larudee, "Estimates of the Impact of the Free Trade Agreement on Direct U.S. Investment in Mexico." Summary of Testimony to the U.S. Trade Representative Public Hearings on NAFTA, Boston, MA, September 11, 1991; see also, Koechlin, Timothy, Mehrene Larudee, Samuel Bowles, and Gerald epstein, "Effect of the North American Free Trade Agreement on Investment, Employment and Wages in Mexico and the U.S." Mimeo, Skidmore College and University of Massachusetts at Amherst, February 1992; Koechlin, Timothy, and Mahrene Larudee, "The High Cost of NAFTA," Challenge (September-October 1992), pp. 19-26.
4. Leamer (Univ Calif at Los Angeles and National Bureau of Economic Research)
Leamer, Edward, "Wage Effects of a U.S.-Mexican Free Trade Agreement." NBER Working Paper No. 3991 (Cambridge, MA: National Bureau of Economic Research, February 1992).
5. Choate
Choate, Pat, "Jobs at Risk: Vulnerable U.S. Industries and Jobs under NAFTA" (Washington, DC: The Manufacturing Policy Project, April 1993).

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1. Adams, Alanis, and del Rio (Univ of Pennsylvania)
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2. Kehoe (Univ of Minnesota)
Kehoe, Timothy J., "Modelling the Dynamic Impact of North American Free Trade." In U.S. international Trade Commission, Economy-Wide Modeling of the Economic Implications of a FTA with Mexico and a NAFTA with Canada and Mexico, USITC Publication 2508 (Washington, DC: U.S. International trade Commission, May 1992).
3. Levy and van Wijnbergen (Boston Univ and World Bank)
Levy, Santiago, and Sweder van Wijnbergen, "Transition Problems in Economic Reform: Agriculture in Mexico-U.S. Free Trade Agreement." In U.S. International trade Commission, Economy-Wide Modeling of the Economic implications of a FTA with Mexico and a NAFTA with Canada and Mexico, USITC Publication 2508 (Washington, DC: U.S. International Trade Commission, May 1992).
4. Sobarzo (colegio de Mexico)
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1. Cox and Harris (Univ of Waterloo and Simon Fraser Univ)
Cox, David, and Richard G. Harris, "North American Free Trade and its Implications for Canada: Results from a CGE Model of North American Trade," in U.S. International Trade Commission, Economy-Wide Modeling of the Economic Implications of a FTA with Mexico and a NAFTA with Canada and Mexico, USITC Publication 2508 (Washington, DC: U.S. International Trade Commission, May 1992).

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NAFTA and the Employment of Union Workers in Manufacturing

Council of Economic Advisers, Executive Office of the President
Office of the Assistant Secretary for Economic Policy, U.S. Treasury

November 8, 1993

Summary

The growth of manufacturing net exports to Mexico over the past eight years has been heavily concentrated in unionized industries. As U.S. net exports in unionized manufacturing sectors have grown, increased trade with Mexico has increased the demand for and expanded the employment opportunities of union workers. There is every reason to believe that passage of NAFTA would continue the expansion of the U.S. manufacturing trade surplus with Mexico, and would further increase the demand for U.S. unionized workers.

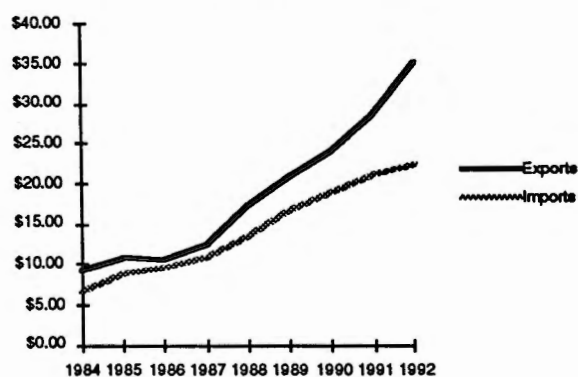
NAFTA and Union Workers

Many critics, including some connected with unions, have argued that NAFTA would reduce employment and wages in the U.S., especially among union members. Our experience in the last five years has shown just the opposite: that more open trade with Mexico has created more union jobs. The products in which Mexican demand for U.S. goods is most intense—and in which Mexico is least competitive—are precisely those high-wage capital-intensive heavy manufacturing industries which are heavily unionized.

The figure below shows the growth of manufacturing trade with Mexico—and the expansion of U.S. net exports in manufacturing—since the mid-1980s. In the mid-1980s Mexico began an historic reform of its economy. The government implemented a major macroeconomic stabilization program, reduced import barriers, and privatized a number of state sectors. The economic

reforms which Mexico began, and which are still underway, have been compared by some analysts to the reforms undertaken in Hungary after the collapse of the iron curtain.

Manufacturing Exports and Imports to Mexico (Billions)



The surplus in U.S. manufacturing trade with Mexico has grown rapidly since the beginning of Mexican reform in 1986. In 1992, U.S. manufacturing exports to Mexico reached \$35.3 billion, while manufacturing imports from Mexico amounted to \$22.4

billion.

In 1986 high-unionization manufacturing industries—those with unionization rates of 20 percent or more—exported \$4.9 billion worth of products to Mexico. Moderate-unionization manufacturing—with unionization rates of between 10 and 20 percent—exported \$4.6 billion worth of products to Mexico. Low-unionization industries—with unionization rates under 10 percent—exported \$1.1 billion worth of products to Mexico.

Between 1986 and 1992, the exports of high-unionization industries grew by \$13.8 billion, while the exports of moderate-unionization manufacturing industries grew by only \$9.2 billion and the imports of low-unionization manufactures grew by only \$1.7 billion. Expanding exports provided a significant boost to demand for products made by unionized workers.

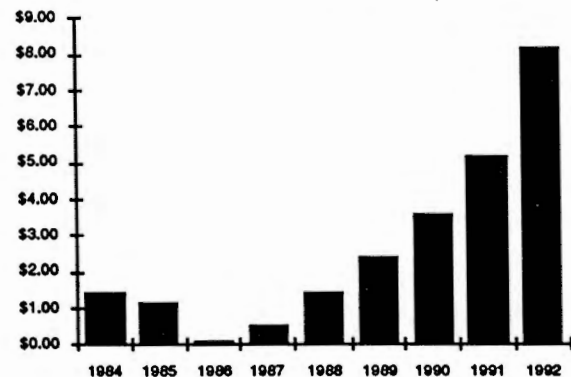
Expanding exports in high-unionization industries were not offset by imports in other high unionization categories. Net exports in the high unionization category grew from less than one hundred million dollars in 1986 to more than \$8.2 billion in 1992.

The figures below show the growth of net exports in these categories of manufacturing industry—high, moderate, low unionization—since the mid-1980s. The pattern is clear: the boom in manufacturing net exports has been a boom in sectors with more union workers.

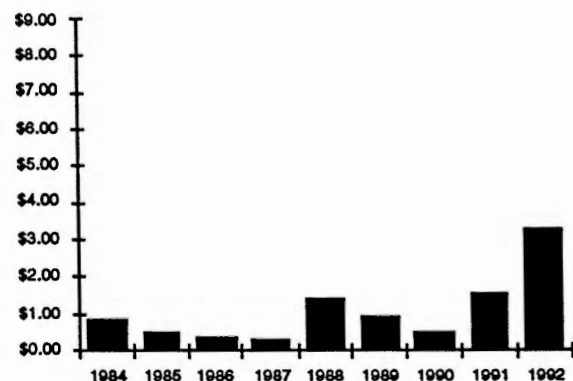
NAFTA is likely to further boost U.S. manufacturing trade, and net exports in high-union industries, with Mexico. Under NAFTA Mexico will remove substantial remaining tariffs to imports of U.S. manufactured goods,

especially consumer goods. The U.S., by contrast, has few barriers to manufactured imports from Mexico.

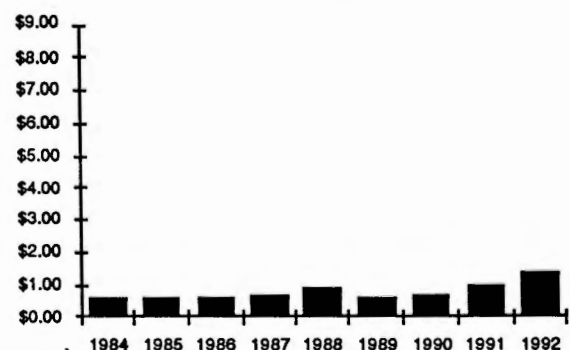
**U.S. Net Manufacturing Exports to Mexico:
High-Unionization Industries (Billions)**



U.S. Net Manufacturing Exports to Mexico: Middle-Unionization Industries (Billions)



U.S. Net Manufacturing Exports to Mexico: Low-Unionization Industries (Billions)



NAFTA and the Employment of Union Workers

Council of Economic Advisers, Executive Office of the President
Office of the Assistant Secretary for Economic Policy, U.S. Treasury

October 28, 1993

Summary

The growth of exports to Mexico over the past six years has increased demand for U.S. union workers. 24.6% of the workers employed in the industries that export the most to Mexico are covered by union contracts. By contrast, 19.2% of workers in industries that face the most competition from Mexican imports are covered by union contracts. As a result, expanded trade with Mexico has increased, not decreased, the relative demand of U.S. firms for union vis-a-vis nonunion workers.

NAFTA and Union Workers

Some observers fear a North American Free Trade Agreement would diminish the standard of living of U.S. workers and the level of employment in the United States. Many U.S. labor unions have been particularly concerned.

Our analysis suggests that these fears are greatly overdrawn. Detailed analysis indicates that the net effect of NAFTA will be to increase, not decrease, opportunities for union employment in the United States.

NAFTA will expand U.S.-Mexico two-way trade. U.S.-Mexico two-way trade has already grown significantly over the past six years: U.S. exports to Mexico today are three times what they were in 1987. And those U.S. industries that export the most to Mexico today are among the most heavily unionized in the country.

Industries that Export to Mexico

The recent expansion of exports to Mexico has shifted the distribution of U.S.

production and increased the demand for workers in more heavily-unionized occupations. There is good reason to believe that a further expansion of U.S.-Mexico trade under NAFTA would further stimulate demand for union workers.

The table below reports the fifteen groups of commodities, measured at the level of their three-digit Standard Industrial Classification (SIC), that exported the most to Mexico. Table 1 also reports estimates of the proportion of workers producing these commodities who are covered by union contracts, derived from Current Population Survey (CPS) reports of workers by Census Industrial Classification (CIC) code.

Some CIC codes cover more than one SIC code. Electronic components and electrical machinery, for example, fall under the same CIC code and thus have the same estimated unionization level.

The average level of workers covered by union contracts in the fifteen industries that

produced the most exports to Mexico in 1992 was 24.6 percent. Since union contracts cover 21 percent of manufacturing workers today, and little more than 12 percent for private-sector workers as a whole, workers in industries that export the most to Mexico are significantly more likely to be union members than the average.

Unionization and Top U.S. Exports to Mexico, 1992

(Million Dollars)			
Product Group	SIC Code	Exports	Percent Union
Motor vehicles	371	\$4,129	51.4
Elect. components	367	\$2,116	15.8
Misc. manufactures	3XX	\$1,522	NA
Elect. machinery	369	\$1,339	15.8
Cash grains	011	\$1,300	7.9
Office machinery	357	\$1,053	7.6
Aircraft	372	\$959	37.4
Non-ferrous metals	335	\$931	27.1
Blast furnace pdts.	331	\$912	50.1
Misc. plastic pdts.	308	\$903	14.0
Measuring insts.	382	\$900	9.8
Cons. machinery	353	\$879	25.3
Refinery products	291	\$863	32.9
Plastics	282	\$830	13.3
Meat products	201	\$814	23.4
Indust. machinery	356	\$801	18.0
Average			24.6

NA—Not available.

Sources—Current Population Survey; Bureau of Economic Analysis.

Industries that Import from Mexico

Not only do workers in industries that export to Mexico have higher than average unionization rates, they also have higher unionization rates than workers in industries that compete with imports from Mexico. Table 2 reports unionization levels for the fifteen industries that imported the most from Mexico in 1992.

19.2 percent of workers employed in the fifteen industries that imported the most from Mexico in 1992 were covered by union contracts—a unionization rate of only three-quarters the rate for those industries that export the most to Mexico.

Unionization and Major Imports from Mexico, 1992

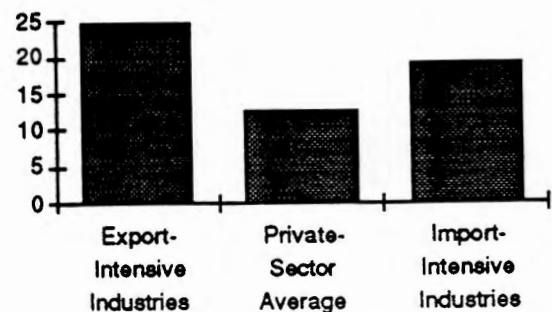
(Million Dollars)			
Product Group	SIC Code	Imports	Percent Union
Motor vehicles	371	\$5,487	51.4
Oil and gas	131	\$4,272	4.3
Elect. components	367	\$2,005	15.8
Elect. machinery	369	\$1,947	15.8
Radio & TV sets	365	\$1,755	15.3
Office machinery	357	\$1,053	7.6
U.S. goods (reimp.)	980	\$1,168	NA
Elect. lighting	364	\$895	15.8
Office machinery	357	\$813	7.6
Fabric. textiles	239	\$795	12.2
Furniture	259	\$742	22.9
Hshld appliances	363	\$725	33.3
Elec. ind. apparatus	362	\$664	15.8
Vegetables	016	\$639	3.1
Fruits	017	\$588	3.1
Fabricated metals	349	\$456	26.6
Non-ferrous metals	335	\$450	27.1
Average			19.2

NA—Not available.

Sources—Current Population Survey; Bureau of Economic Analysis.

Unionization Rates: Major Exporting Industries, Major Importing Industries, and Private Sector

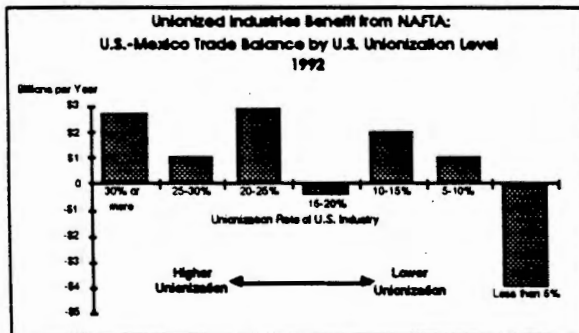
Average (Percent)



Conclusion—More Jobs for Unions

Expanded trade with Mexico as a result of NAFTA is likely to increase the demand for union workers. First, NAFTA is likely to increase the U.S. bilateral trade surplus vis-a-vis Mexico—increasing exports to Mexico more than imports from Mexico. Exporting industries are substantially unionized.

Second, NAFTA and the expansion in U.S.-Mexico trade that it engenders is likely to shift relative demand in the U.S. further toward products produced by industries that have relatively high unionization rates. The expansion of trade with Mexico over the past five years has boosted demand for products made by high-union industries. NAFTA is likely to continue this process, creating job opportunities in the U.S. in industries in which unions are relatively strong.



The magnitude of these factors can be gauged from the figure above, which presents the 1992 bilateral trade balance of the U.S. with Mexico by the proportion of workers covered by union contracts. The U.S. has substantial trade surpluses with Mexico in industries that employ substantial numbers of

union workers. There are only two categories in which the U.S. runs a trade deficit with Mexico: industries in which fewer than five percent of workers are covered by union contracts, and there is a small deficit in those industries with 15-20% of workers covered by union contracts.

This analysis has used the distribution of trade with Mexico today to assess the likely consequences of further liberalization, through NAFTA, on the demand for union labor. There is one important factor, however, which leads this analysis to *understate* the benefits for union labor of NAFTA.

The distribution of trade with Mexico is now distorted by the legacy of Mexico's past protectionist policies. For example, industries—like motor vehicles and parts—that are relatively heavily unionized and are high on the import list rank as highly as they do only because of Mexico's current trade barriers: U.S. auto producers cannot export products to Mexico unless they import a larger quantity and value of products from Mexico. NAFTA is eliminating these Mexican non-tariff barriers—and removing Mexican tariffs on U.S. products that are on average more than twice U.S. tariffs on Mexican products.

Therefore as Mexico's tariff and non-tariff barriers come down the distribution of trade with Mexico will shift in a direction that will produce an even further increase in demand for those high-wage, high-skill, relatively heavily unionized industries in which Mexican demand for U.S. products is so strong.

UNION EMPLOYMENT AND NAFTA

- The U.S. runs a substantial surplus with Mexico in those industries that are heavily unionized. The fifteen industries that export the most to Mexico average 24.6% union—the private sector as a whole averages 12.7% union.
- The increase in trade with Mexico over the past six years has increased demand for U.S. workers in those occupations and industries with relatively high unionization levels.
- At present Mexican non-tariff barriers reduce U.S. exports to Mexico in high-wage high unionization industries like automobiles. NAFTA is removing these barriers. Under NAFTA Mexican demand for U.S. industrial products like motor vehicles, aircraft, electrical machinery, primary metals, construction machinery, and refinery products will increase even more.
- Thus NAFTA will increase U.S. firms' demand for workers in those occupations and industries that are heavily unionized.

