

U.S. COMPETITIVENESS AND NEEDED ADJUSTMENTS

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U.S. competitiveness in the world market has been an issue of considerable interest to the American agricultural community for the better part of the past two decades. As exports have represented a larger share of U.S. farm output, and as the level of these exports has risen and fallen unevenly over the period, it is easy to see why the issue is viewed as important. The purpose of this paper is to develop a perspective on the issue that might be useful in conducting policy education programs.

I focus on U.S. competitiveness as viewed from the standpoint of the general economy for two reasons.

First, when viewed from the standpoint of the macro economy, the situation looks quite different than when viewed from the narrower confines of a single sector such as food and agriculture. Thus, if we are addressing national policy or even trying to derive national meaning out of state and local policy, it is useful to consider this larger picture.

Second, I am persuaded that it is the macro view that will be increasingly more influential in determining policy issues of all types in the future. Most key elements of the policymaking environment as they relate to U.S. competitiveness are going to be determined on the basis of how they affect the national economy, not on the basis of how they affect an individual sector. For example, most of the key changes that were made in farm policy in the 1990 farm bill were made in response to the overall budget situation, not in response to farm sector needs. We can expect more of this in the future.

How Competitive Is the United States?

We begin by assessing the competitiveness of the United States in a world context. How does the United States stack up competitively? The answer to this question is not as straightforward as one might hope or expect. To find the answer, it is necessary to look at several different indicators at both the macro and micro levels.

Current Trade Account

The most obvious of the macro measures is the current trade account, a balance sheet of sorts of U.S. imports and exports. A review of this account shows that the United States experienced a modest export surplus for most of the 1970s and through 1981. Then, beginning in 1982 and continuing throughout the remainder of the 1980s and into the early 1990s, imports exceed exports by a wide margin. This is the most direct evidence of declining U.S. competitiveness. It is not the only evidence, however.

Declining Dollar Value

The fall in the value of the dollar during the 1970s is another. In part, the slide in the value of the dollar was an indication of the declining value attached to U.S. exports. In the absence of a strong foreign demand for U.S. assets, as occurred later in the 1980s, the self-adjustment feature of a flexible dollar behaved as it is supposed to. That is, reduced overseas demand for U.S. goods resulted in a lower value of the dollar which, in turn, made U.S. prices more attractive to foreign customers.

Productivity

Productivity and rates of growth in productivity are also useful indicators of national competitiveness. Productivity, as reflected in growth in GNP per worker, rose rapidly in the United States in the 1950s and 1960s but stagnated in the 1970s. In 1983, it resumed its upward growth though at a slower pace. How did the U.S. experience compare with that of other countries? International comparisons of productivity growth reveal a decline in the productivity of all major industrialized economies since the mid-1970s, though the U.S. rate was already lagging prior to this and has continued to lag since. To a major extent this same relationship—the United States lagging and all countries experiencing a decline in productivity growth between 1960–1973 and 1973–1980—prevailed across major sectors of all of the major industrialized economies, as can be seen in Table 1.

Of course these are comparisons in rate of change through time. But just because the United States is lagging in the rate at which its productivity is increasing doesn't mean that its absolute level of productivity has fallen behind that of other nations. Here, too, there are no definitive measures. Still, there are some clues.

Manufacturing Labor Productivity

For example, it is possible to compare the labor productivity in manufacturing of the major industrialized countries. On the basis of output per hour in manufacturing, the United States led other Organization for Economic Cooperation and Development (OECD)

Table 1. International Comparison of Annual Productivity and Employment Growth, 1960-75

Country	Productivity																		
	Employment			Agriculture			Industry			Manufacturing			Services			All Industries			
	60	73	85	60	73	85	60	73	85	60	73	85	60	73	85	60	73	85	
U.S.	1.9		2.0	4.1	2.7	2.2	1.1	3.4	2.2	1.5	0.3	2.0	0.6						
Japan	1.3		0.9	7.7	2.0	8.8	4.0	9.5	5.7	6.3	1.8	8.2	3.0						
Germany	0.2		-0.4	6.3	4.2	4.4	2.5	4.6	2.8	3.0	1.7	4.2	2.1						
France	0.7		0.0	6.2	4.9	5.5	3.1	6.4	3.3	3.3	1.1	4.8	2.1						
U.K.	0.3		-0.3	6.1	3.7	3.0	2.4	3.6	2.2	2.5	1.1	2.8	1.6						
Canada	2.8		2.2	6.2	0.7	3.8	0.8	4.1	1.2	1.2	1.6	2.6	1.2						
E.C.	0.3		-0.1	6.1	4.6	4.6	2.6	5.3	2.8	3.0	1.0	4.5	1.9						

Source: OECD, *Historical Statistics 1960-85* (Paris, 1987). As reported in Morici, p. 13.

countries as recently as 1986, though the margin of this lead over several countries, notably Germany, Japan and France, had been substantially reduced over the past four decades. A similar trend is evident from a comparison of the level of compensation per hour in OECD countries over the same period, though German wages had overtaken U.S. wages as early as 1980 and by 1988 all other countries except the United Kingdom (U.K.) were close to parity with the United States. At least in manufacturing, therefore, it can be said that the absolute level of productivity in the United States is about on a par with other leading industrialized economies, but that the United States is rapidly losing ground as a result of its slower rate of growth.

Comparative Advantage

Of course, productivity alone does not determine a nation's competitiveness in international trade. Hypothetically, a nation might have an absolute advantage in the production of everything. Yet, if it is to benefit from trade with neighboring nations, it will concentrate on the production and export of those goods for which it has a comparative advantage. Comparative advantage is determined in large measure by each nation's resource endowment, i.e., its stock of: land, labor, human capital, physical capital and other natural resources.

As shown in Table 2, the United States accounts for a leading share of these resources among industrialized countries and, with the exception of unskilled labor, in the world. On the basis of its relative share of these resources, the United States would seem to have a comparative advantage in the production of agricultural products and in the production of knowledge and high-technology goods and services. However, as can also be seen from Table 2, the U.S. share of some of these resources fell over the period 1963-84. The declines in U.S. share of R&D scientists and physical capital are particularly noteworthy. This is due to a much slower rate of growth in these factors in the United States compared to the rates in other advanced industrialized countries (AIC's). This is evident from the trends in growth of these factors displayed in Table 3.

On the basis of this accumulated evidence, Morici concludes that the overall trend:

. . . does not reflect an absolute decline in U.S. innovative capabilities; rather it signifies a general evening of relative competitive positions among the major AIC's in activities emphasizing the rapid evolution of new products (p. 33).

Morici goes on to observe that the rapid accumulation of physical capital by the newly industrialized countries (Argentina, Brazil, Mexico, India, Hong Kong and South Korea) is a good indication that they will become major exporters of such products as steel, non-

Table 2. Relative Factor Endowments of Major Already Industrialized Countries (AIC's) and Six Newly Industrialized Countries (NIC's), 1963-84
(Each Country's Endowment as a Percentage of the World Total)^{1/}

Country	Year	Capital ^{2/}	Skilled Labor ^{3/}	Semi-Skilled Labor ^{4/}	Unskilled Labor ^{5/}	Arable Land ^{6/}	R&D Scientists ^{7/}
U.S.	1963	41.9	29.4	18.3	0.60	27.4	61.3
	1980	33.6	27.7	19.1	0.19	29.3	49.1
	1984						48.7
Japan	1963	7.1	7.8	12.6	0.30	0.9	14.6
	1980	15.5	8.7	11.5	0.25	0.8	22.6
	1984						22.9
Germany	1963	9.1	7.1	6.8	0.14	1.3	7.6
	1980	7.7	6.9	5.5	0.08	1.1	9.1
	1984						9.5
France	1963	7.1	6.6	5.3	0.11	3.2	5.3
	1980	7.5	6.0	3.9	0.06	2.6	5.8
	1984						6.1
U.K.	1963	5.6	7.0	6.5	0.14	1.1	6.2
	1980	4.5	5.1	4.9	0.07	1.0	6.8
	1984						5.9
Canada	1963	3.8	2.5	1.7	0.06	6.5	1.7
	1980	3.9	2.9	2.1	0.03	6.1	2.1
	1984						2.2
Six major AICs	1963	74.6	60.4	51.2	1.35	40.4	96.7
	1980	72.7	57.3	47.0	0.68	40.9	95.5
	1984						93.3
Six NICs ^{8/}	1963	6.2	19.3	24.8	86.7	37.2	n.a.
	1980	10.1	22.0	30.5	87.9	36.7	n.a.
	1984						n.a.

^{1/} Computed from a set of 34 countries that in 1980 accounted for over 85 percent of the GDP in noncentrally planned economies.

^{2/} Based on real gross domestic investment.

^{3/} Based on number of workers in professional and technical categories.

^{4/} Based on number of literate workers not categorized as professional or technical.

^{5/} Based on number of illiterate workers.

^{6/} Based on measurement of land in different climatic zones; observation are for 1963 and 1975.

^{7/} Percentages are based on total R&D personnel from the 6 countries shown and Italy and Switzerland, as provided by the National Science Foundation and the OECD. These 8 countries accounted for over 90 percent of OECD R&D activity; observations are for 1965, 1981, and 1984.

^{8/} NIC's represented in the 34-country sample were Argentina, Brazil, Mexico, India, Hong Kong, and South Korea.

Source: Morici, p. 31.

ferrous metals and automobiles and that this, in turn, will force the other industrialized countries to concentrate on "high technology and service activities traditionally important to the U.S." (p. 34).

Thus, while it might reflect an evening of competitive positions, there is no reason to believe that things will get any easier for the United States.

Attempts to identify those industries for which the United States has the greatest competitive advantage have generally pointed to-

Table 3. Estimated Annual Rates of Factor Growth Relative to Total Labor Force 1963–84 (Percent)

	Capital 1963–80	R&D Scientists and Engineers 1965–84	Skilled Labor 1963–84
U.S.	1.4	0.1	0.9
Japan	8.3	5.0	2.6
Germany	3.0	4.1	2.4
France	4.9	3.6	1.9
U.K.	3.3	3.0	3.4
Canada	2.0	2.4	1.1
Six NICs	6.2	n.a.	2.6

Source: Morici, p. 32.

ward the high technology, skilled labor industries. However, an examination of trends over the past fifteen years shows that even in these industries the United States has lost ground relative to countries like Japan and Germany. Trends in three industrial categories for the United States and five of its principal industrialized competitors, as shown in Table 4, illustrate the nature of this change.

As indicated in the upper portion of Table 4, as recently as 1981, the United States was a net exporter of technology-intensive goods. It has since become a net importer. In contrast, Japan nearly doubled its already very large net export position over the entire period. Germany and the U.K. lost ground but remained net exporters. The significant restructuring that has occurred in Japanese manufacturing is evident from the bottom portion of Table 4. While the United States reduced its share of manufacturing value-added in the capital-intensive and labor-intensive categories by 13 percent, Japan reduced its share in these categories by 29 percent. And, while the United States expanded its share of technology-intensive output by 7 percent, Japan expanded its by 50 percent.

Overall U.S. Competitiveness Eroded

In summary, there seems little doubt but that the overall competitiveness of the United States in world markets has eroded over the past twenty years. And, while the available evidence does not provide an entirely clear picture, it seems likely that the United States is continuing to lose ground. We now turn to the question of “so what?”.

Implications of Deterioration

As surprising as it might sound, the implications for the average American of a deterioration in U.S. competitiveness are not earth-shaking. I say this for two or three reasons.

First, as a nation, *we are not heavily dependent on international trade*. Most of the goods and services we consume are domestically produced. In 1990, 87 percent of U.S. consumption was made in the

United States; 13 percent was imported. About 12 percent of the nation's total output was exported. (For agriculture, exports accounted for 24 percent of output, exactly double this share.) While this level of trade is certainly not insignificant in an absolute sense, in a relative sense it is small compared to domestic transactions. It is also useful to remind ourselves that even though we are in an era of shrinking international boundaries and increasing economic and political integration, international trade has played an even more important role in the U.S. economy and that of other industrialized countries during earlier periods of history.

Table 4. Summary of Changes in Comparative Competitiveness and Industry Structure, 1969-85

		<u>U.S.</u>	<u>Japan</u>	<u>Germany</u>	<u>France</u>	<u>U.K.</u>	<u>Canada</u>
A. Changes in International Competitiveness, Export-Import Ratios							
Technology-Intensive	1969	1.78	3.41	3.04	1.13	3.16	0.78
	1973	1.48	4.58	3.02	1.18	1.41	0.74
	1979	1.52	5.67	2.40	1.38	1.39	0.77
	1981	1.56	7.38	2.42	1.24	1.43	0.82
	1983	0.90	5.77	2.08	1.11	0.92	0.79
	1985	0.75	6.67	2.19	1.22	1.04	0.81
Capital-Intensive Standardized	1969	0.53	1.50	0.71	0.83	0.60	1.29
	1973	0.41	1.22	0.82	0.97	0.67	1.29
	1979	0.39	1.09	0.84	1.03	0.76	1.38
	1981	0.49	1.24	0.90	1.13	0.72	1.42
	1983	0.43	1.08	0.85	0.99	0.69	1.50
	1985	0.31	1.04	0.89	1.02	0.66	1.41
Labor-Intensive	1969	0.33	14.92	0.73	1.31	1.22	0.22
	1973	0.33	1.60	0.70	1.40	0.89	0.24
	1979	0.38	1.04	0.59	0.86	0.72	0.20
	1981	0.36	1.70	0.61	0.83	0.61	0.24
	1983	0.20	1.83	0.64	0.78	0.54	0.19
	1985	0.13	1.32	0.69	0.79	0.55	0.20
B. Changes in Industry Structure, Shares of Manufacturing Value-Added							
Technology-Intensive	1969	0.44	0.40	0.41	0.34	0.39	0.30
	1973	0.45	0.42	0.43	0.36	0.40	0.31
	1979	0.47	0.49	0.44	0.40	0.41	0.32
	1981	0.47	0.54	0.46	0.41	0.43	0.32
	1983	0.45	0.56	0.47	0.41	0.43	0.31
	1985	0.47	0.60	0.49	0.42	0.44	0.32
Capital-Intensive Standardized	1969	0.38	0.45	0.45	0.54	0.41	0.52
	1973	0.38	0.42	0.45	0.51	0.41	0.51
	1979	0.37	0.42	0.44	0.48	0.40	0.50
	1981	0.36	0.38	0.43	0.46	0.41	0.51
	1983	0.35	0.37	0.41	0.45	0.41	0.52
	1985	0.34	0.34	0.41	0.43	0.39	0.50
Labor-Intensive	1969	0.08	0.11	0.10	0.11	0.09	0.08
	1973	0.08	0.09	0.08	0.09	0.09	0.08
	1979	0.07	0.08	0.07	0.07	0.08	0.08
	1981	0.06	0.07	0.06	0.07	0.08	0.08
	1983	0.06	0.07	0.06	0.07	0.08	0.08
	1985	0.06	0.06	0.05	0.07	0.08	0.07

Source: Morici, p. 98.

A second reason why a loss in U.S. competitiveness is not of monumental consequence is that its primary effect—a *deficit in the current trade account—is a temporary phenomenon*. The U.S. trade deficit is of fairly recent vintage, beginning in 1982 on a sustained basis. It reached a peak of \$160 billion in 1987 and has receded somewhat since. It exists because foreigners have been willing to exchange their dollars for U.S. stocks, bonds and other assets rather than goods. As this transfer of dollars for U.S. assets becomes less attractive, as is certain to occur, the value of the dollar will fall. When this occurs, U.S. exports will become more competitively priced, U.S. imports will become more costly, and the magnitude of the trade deficit will shrink. As Herb Stein has noted, “the nice thing about things that cannot go on forever is that they won’t” (Krugman, p. 90).

This is not to say that a large trade deficit doesn’t carry some risks. It does. Perhaps the greatest risk is the threat of a sudden flight of foreign capital precipitated by a sharp and unforeseen loss of confidence in the American economy. This would necessarily result in a sharp drop in U.S. consumption and could be highly disruptive to the U.S. economy. But the odds of this occurring do not seem very high. And, given the economic and political instability and uncertainty that prevails in so many other parts of the world, it seems even more unlikely that the United States will have to confront such a problem in the near-term.

A third reason that I believe it inadvisable to focus on U.S. competitiveness is that *it is more symptom than cause*. It is but one of several symptoms of a more fundamental, more far-reaching problem that needs to be addressed directly rather than indirectly.

Key Dimensions of the Macro Economic Setting

To get at this more fundamental problem, let me broaden the question. Ultimately, our interest in this and other economic policy issues comes down to how they affect the standard of living of our population and how this standard of living might be raised through increased per capita consumption. In his recent book, *The Age of Diminished Expectations*, Paul Krugman offers a useful framework for considering the alternative paths to this end. He narrows the options to five.

(1) *Put a larger share of the population to work*. This, of course, is exactly what we have been doing in the United States for most of the past thirty years. Thanks to a sharp increase in the labor force participation rate of women and a decline in the dependent age population, the employment-to-population ratio in this country has risen steadily since the early 1960s (Terleckyj, p. 20). A comparison of labor force participation rates for males and females over the past several decades indicates that in all age cohorts since about 1960 female

rates have risen appreciably while male rates have fallen slightly. This combination of changing labor force participation rates and the entrance of the post-WWII baby boom population into the labor force has caused the rate of increase in the labor force to race ahead of population growth over the past twenty-five or thirty years. And while the difference between these rates has narrowed substantially, the rates haven't converged yet.

The effect of this large addition to the workforce on the economy is most graphically seen from a comparison of trends in per capita income and earnings per worker over the past three decades. While per capita income reflects the effect of the growth in the labor force on personal income, growth in earnings per worker is determined largely by advances in productivity. Prior to about 1970, these measures rose in unison. However, beginning around 1970, growth in per worker earnings stagnated, reflecting the downturn in productivity noted earlier. The effect of substantial numbers of new entrants into the labor force, however, obscured the effect of the reduced productivity on per capita income.

But, the big problem with this approach to increased income per capita is that it is strictly a short-term solution. A nation eventually reaches a point at which this source of growth is exhausted. And, while the employment to population ratio of the United States is expected to continue rising until around 2010, the rate of growth will gradually diminish as it approaches this point and will eventually turn negative. At that point, if not well before, we need to be looking elsewhere for increases in per capita income.

(2) *Reduce savings and investment.* Another way to increase current consumption is to set aside a smaller share of income for investment. This, too, is characteristic of the U.S. experience of the past two or three decades. With the exception of private sector expenditures on research and development, investment in capital formation has been stagnant or declining for at least the past two decades (Terleckyj, p. 28). The rate of growth in fixed nonresidential capital per labor hour has trended irregularly lower since the late 1950s. Gross investment in plant and equipment has steadily grown over the past forty but years, but increased depreciation has offset this growth leaving net investment essentially unchanged. Public investments in infrastructure fell throughout the 1970s and early 1980s. And, while public infrastructure investments have increased within the past five years, they still remain substantially below levels of the late 1960s.

However, before an individual or (in a closed system) a nation can invest, it must save. And, while investment in the United States has lagged in recent years, savings has lagged even more. The disparity between savings and investment has been made possible by the huge inflow of funds from abroad. In effect, foreign savers have filled part of the void created by a lack of savings in the United

States. Both private savings and public sector savings in the United States have fallen.

Gross 1990 savings were distributed among the major sources as follows:

	<u>Bil. \$</u>
Personal	179.1
Business	604.8
Total private	783.9
Federal	- 161.3
State & local	35.4
Total government	- 125.9
Total U.S.	658.0

A comparison of trends in gross savings as a percent of gross national product for OECD countries over the past three decades appears in Table 5. As this indicates, the major offender in the decline in U.S. savings has been government, more precisely the federal government. Personal saving as defined by OECD (which is more comprehensive than the definition used in the U.S. income accounts) is shown to have rebounded in the United States to near its level in the 1960s. Using the more restrictive definition that is customarily cited, personal saving as a percent of disposable income fell sharply throughout the latter 1970s and most of the 1980s. The rate in 1990 was half what it had been in the mid-1970s.

Changes and international differences in personal savings rates are related to a number of different demographic, policy, credit market, and business factors (Rose, pp 32-34). It is inevitable that these factors will differ among countries and that they will change through time. For example, a relatively small share (17 percent) of the Japanese working age population is 65 years or over. This contributes to their higher rate of savings. But by the year 2020, this share is expected to rise to 30 percent and could cut Japan's savings rate by as much as half (Rose, p. 36). Another example related to the rationing of credit illustrates international differences. While a first-time home mortgage in the United States now requires a down payment of around 10 percent, in Japan it is closer to 40 percent (Rose, p. 34). Thus, there is somewhat more incentive and need to save in Japan.

But the more serious problem with low savings in the United States stems from the large federal deficit that emerged in the 1980s and has proven to be highly resistant to control. This is, by far, the more worrisome part of the current saving picture. Reduced savings lead to higher real interest rates which, in turn, result in less investment and reduced rates of economic growth. While this is an oversimplification, that is the essence of the problem. And, it is the federal budget deficit that is the largest source of this savings drain.

The federal budget was in deficit by modest amounts throughout the 1970s, but in the 1980s the deficit headed sharply higher. Though serious efforts were made beginning in the mid-1980s to bring the deficit under control, they were of only modest success. But this was

Table 5. Gross Saving as a Percentage of Gross National Product at Market Prices, OECD Countries

	1960-70	1971-80	1981-87	1986	1987	1988	1989
Total Saving							
US	19.6	19.5	14.4	14.7	14.6	15.2	13.2
Canada	21.8	23.1	17.2	18.5	19.6	21.1	21.5
Japan	35.0	34.4	27.1	32.0	32.5	33.5	36.0
France	26.3	25.4	17.3	19.9	19.5	20.5	20.0
Germany	27.3	23.7	19.2	24.0	23.8	24.6	25.5
Italy	21.0	19.2	15.6	21.3	20.5	20.7	20.5
UK	19.6	21.7	18.4	16.8	16.9	18.2	17.8
21 Countries	23.3	23.5	20.2	19.7	19.6	20.3	20.4
Private Saving							
US	17.7	19.2	17.4	17.9	16.8	17.2	15.2
Canada	18.1	20.7	23.2	22.0	21.9	21.5	22.0
Japan	28.7	29.9	24.7	26.9	25.5	25.2	27.9
France	—	22.0	18.7	19.4	18.1	18.3	18.5
Germany	21.1	20.2	18.3	20.1	20.3	23.2	23.5
Italy	19.7	22.9	21.7	28.2	26.9	27.0	27.5
UK	14.0	18.6	17.1	16.3	16.3	15.0	14.5
17 Countries	19.7	21.0	20.4	—	—	—	—
Corporate Saving							
US	8.4	8.5	9.1	9.2	8.8	8.6	6.2
Canada	10.4	9.8	10.4	11.0	12.0	11.9	12.0
Japan	15.3	11.4	10.9	11.5	11.2	11.1	12.1
France	—	8.3	8.0	10.6	10.2	9.9	10.0
Germany	14.1	11.6	10.5	12.4	12.5	15.3	15.5
Italy	—	4.5	4.5	10.1	9.4	9.5	10.0
UK	8.1	11.4	10.5	12.2	13.1	12.5	11.1
Personal Saving							
US	9.3	10.7	8.3	8.6	8.0	8.6	9.0
Canada	7.7	10.9	12.8	11.0	9.9	9.6	10.0
Japan	13.5	18.5	13.8	15.4	14.3	14.1	15.8
France	—	13.6	10.7	8.8	7.9	8.4	8.5
Germany ^a	7.8	9.7	7.8	7.7	7.8	7.9	7.0
Italy	12.2 ^a	18.4	17.2	18.1	17.5	17.5	17.5
UK	6.0	8.9	6.6	4.6	3.2	2.5	3.4
Government Saving							
US	1.8	0.3	-2.4	-3.1	-2.2	-2.1	-2.0
Canada	3.7	2.3	-2.2	-2.5	-1.7	0.0	-0.5
Japan	1.8	0.3	4.4	4.8	6.6	8.1	8.1
France	—	3.5	0.8	0.5	0.6	1.1	1.5
Germany	6.2	3.5	1.8	2.4	1.9	1.4	2.0
Italy	1.3	3.7	-7.6	-7.8	-7.2	-6.7	-7.0
UK	5.6	3.1	1.3	0.0	0.6	3.2	3.3

(a) Net saving (after capital consumption) only. In other countries, net household saving as a percentage of net national product was 2-3 percent below the gross saving ratio in the 1980s.

Source: OECD National Accounts and Barclays Bank Economics Department as cited in Harold Rose, *The Question of Saving*. Washington, D.C.: British-North American Committee, 1991.

before the enormous cost of the widespread failure of savings and loans and banks became evident. It is now estimated that deposit insurance spending alone will reach \$115 billion in 1992. Thus, under the best of circumstances, the federal budget deficit will reach new heights in FY 1992. And while resolution of the failed financial institutions is expected to result in an equally sharp drop in the deficit beginning in FY 1993, even removing the effects of the deposit insurance outlays and those associated with the business cycle (as represented by the standardized-employment deficit) still yields a deficit of around \$170 to \$190 billion as far as budget forecasters are able to see into the future.

As is all too clear from the experience of the United States in recent years, a reduction in savings and investment is not a very satisfactory means of improving the nation's standard of living. It will work for awhile, but only for awhile.

(3) *Import more than you export.* Another way to increase consumption and improve the standard of living of the nation is to import more than you export. This is another approach with which the United States has had first-hand experience, as described above. This can be achieved by borrowing from abroad or by selling U.S. assets to foreign investors. The United States has done both in recent years. Both can go on as long as foreigners are willing, that is as long as they have the dollars and as long as the loan or the investment is attractive, neither of which will continue indefinitely. Thus, this can't be considered a long-term solution either.

(4) *Sell exports at a higher price than imports.* This can be done, but only when a nation is producing a high-quality product for which foreign consumers are willing to pay a premium. The impressive growth of the Japanese automobile industry is a case in point. Yet, this approach to increased economic well-being requires another ingredient. Namely, it requires that a nation be more productive in its economic performance . . . which is a topic that is substantially broader than the export market alone and brings us to our final approach.

(5) *Increase productivity.* As Krugman says, "productivity isn't everything, but in the long run it is almost everything" (p. 9). In comparison with the first three options described above, this is the only one that can be sustained for more than a temporary period or doesn't carry with it significant risks. The fourth option of exporting at a higher price than you are importing is increased productivity in a different and more restricted form. To put dimensions on it, Krugman estimates that had U.S. productivity increased as fast over the last twenty years as it did for the preceding seventy years, the present standard of living of Americans would be about 25 percent higher than it is. This is a benefit of enormous magnitude far overshadowing the benefit associated with any other plausible option for improving the economic well-being of the nation.

Achieving Increased American Productivity

It should be said at the outset that the causes of change in the rate of productivity growth are not very well understood, at least not in the aggregate. Though many possible explanations have been suggested over the years, no single explanation is completely convincing. Rather, it appears likely that a multitude of different factors are responsible. Thus, attempts to turn around productivity trends in the United States will almost certainly require action across a very broad front. Productivity suffers whenever resources of value are not used to fullest benefit. And that covers a lot of ground in contemporary American society. But perhaps a few general points will help place the task in perspective and suggest some possible approaches.

Sources of Lost Productivity

The causes of lost productivity are both complex and pervasive. They are spread throughout our economic, social and political systems. Lower productivity doesn't result just from the way we make things and provide services or from the curriculums in our schools or from the number of unemployed. It also stems from the nature of our consumption patterns and lifestyles, our personal values and beliefs, the use we make of public infrastructure, and last, but certainly not least, our public policies.

Examples are everywhere around us. Americans live in large houses relative to most of the rest of the world. And, despite smaller families, fewer persons per household and an aging population, the average size of new houses constructed between 1970 and 1986 rose by over 20 percent. Should public policy continue to be used to attract so many resources to this use? Or, to take another example, should the United States continue to use its school facilities and its trained corps of teachers for less than 70 percent of the year when the educational systems of many other countries have school years that are as much as one-third longer than ours?

Reducing the Federal Budget Deficit

At the macro economic level, the single most important action to be taken is to substantially reduce, if not eliminate, the federal budget deficit. Historically, increased productivity has correlated rather closely with the accumulation of capital stock in its many forms—plant and equipment, R&D expenditures, the education and experience of the work force, and public infrastructure. But before we can turn the corner in the accumulation of capital stock, we must increase savings. The most direct, most effective route to that end is through federal deficit reduction. And, as we already know, that isn't going to be easy. Paul Krugman summarizes the situation as follows:

If the apparent acceptance of more or less stagnant living standards is the most striking feature of the diminished expectations Americans have for their economy, the acceptance of a more or less permanent budget deficit is the most spectacular example of the diminished expectations the public has for its elected leaders (p. 63).

Since I am persuaded that our elected leaders are a more-or-less accurate reflection of the constituents they serve, I would only amend Krugman to the point that the budget deficit is perhaps the most spectacular example of the diminished expectations we have of ourselves and our institutions.

Tight Public Budgets and Productivity

Budget austerity at the national level is going to have two major effects, already evident.

First, *it will result in a shift in program responsibility from the federal government to state governments.* This is already well underway and will probably accelerate. Since states are required to balance their budgets, on the whole they have demonstrated greater fiscal responsibility than the federal government. Fully two-thirds of all states have raised taxes this year. However most states have reduced services too and, increasingly, they are shifting program responsibilities on down the line to counties, cities and localities. In New York State it is estimated that 60 cents of every county budget dollar is spent for activities mandated by the State (*Wall Street Journal*, p. A20).

The other effect of budget austerity will be for *governments to turn from the use of the "carrot" to use of the "stick."* That is, there is likely to be greater use of regulatory powers to achieve public aims. Because it can be administered in more capricious, less flexible ways, increased regulation risks extracting a high cost in reduced productivity.

As an example, take just one aspect of the nation's environmental policy agenda, the clean-up of toxic wastes, as examined in a recent *New York Times* article. The cost of fully restoring the 400,000 to 450,000 sites has been estimated at \$300 to \$700 billion. Now consider one particular site, an 11-acre property in Holden, Missouri. There are a range of options for making the site safer than it presently is. These options range from permanently isolating the site from the community at a cost of \$71,000; to cleaning the stream bed and capping the site with 10 inches of clay at \$3.7 million; to removing contaminated soil and materials, incinerating the most contaminated and burying the rest in a special landfill at a cost of \$13.6 million; to removing 14,000 tons of contaminated material and incinerating it elsewhere at a cost of \$41.5 million. Though EPA has recommended

the \$13.6 million option, is the loss in productivity worth this price? As the *New York Times* writer observes,

(One) may wonder whether the more flexible use of land is worth the extra \$900,000 an acre beyond the cost of scrubbing the stream and capping the property. And still others may ask whether a bare-bones fix—one that reduces neighborhood cancer risks to, say, one-thousandth the chance of getting cancer from a lifetime of normal exposure to the sun—would not be adequate (*New York Times*, p. 28).

Questions of this nature are going to have to be confronted across a broad range of public policy if we are to make any progress in raising productivity.

Implications for U.S. Food and Agriculture

The differences between the food and agricultural sector and the overall economy tend to be of degree rather than kind. Of course, the United States is a large net exporter of agricultural products and has been for the better part of the past thirty years. This nation possesses a huge natural resource base that makes it a leading producer of many commodities. The United States has a strong advantage in the production of coarse grains, for example, and benefits from advanced livestock and poultry industries. And, it is favored in many other ways including a large and sophisticated system of research, education and training of which many readers of this paper are a part.

Despite the sector's many advantages, however, there are signs that it is losing ground. Growth in productivity has slowed substantially since 1950 and is projected to decline still further in the future (Barkama, p. 265). This is true of aggregate farm production and for most individual commodities as well. Foreign crop yields have generally risen faster than U.S. crop yields over the past twenty-five years, though the United States continues to hold an absolute yield advantage for several crops. And for some crops, such as coarse grains, the advantage is sizable.

A major drawback to making international comparisons of competitiveness is that most of the world's agricultural economies are so protected and the markets so distorted as to limit their usefulness. Assessments of the effect of trade liberalization offer a useful means of looking beyond the existing distortions and predicting what trade would be with at least some of the present barriers lowered or removed. Results of a recent U.S. Department of Agriculture (USDA) analysis of the effect on U.S. exports of adopting a trade policy consistent with the U.S. position in the Uruguay Round General Agreement on Tariffs and Trade (GATT) negotiations are displayed in Table 6 (Office of Economics, USDA). These results, which are consistent with those of other studies, indicate that most U.S. com-

Table 6. Estimated Effect on U.S. Exports in 1996 of GATT Agreement Consistent With U.S. Proposal, by Commodity

<u>Commodity</u>	<u>Percent Change</u>
Wheat	+ 16-20
Corn	+ 10-12
Rice	+ 32-35
Cotton	+ 5-6
Soybeans	+ 2
Peanuts	(+ 6, 150)
Tobacco	+ 10-15
Sugar	(+ 20-28)
Fruit and tree nuts	+ 10-12
Vegetables and nursery products	+ 12-15
Beef	+ 10
Pork	+ 8
Poultry	+ 5
Eggs	+ 14
Dairy products	(+ 32)
All commodities	+ 16-22
() indicates change in imports.	

Source: Office of Economics, USDA, *Economic Implications of the Uruguay Round for U.S. Agriculture*, May 1991.

modities would benefit from expanded exports under trade liberalization. The exceptions are milk, sugar and peanuts, each of which would be confronted with sharply higher imports than are permitted now under the existing quotas.

From the standpoint of processed foods, international trade is not nearly as important to the United States as is trade in raw agricultural commodities. In 1987-1988, exports accounted for 4.3 percent of total shipments from U.S. processing plants while imports were the equivalent of 5.6 percent of shipments. These aggregate measures have remained near these levels for at least the past twenty years. Of course, there is some variation among industries within the sector with the less highly processed foods generally playing a more important role in exports.

That the United States does not export a large share of its processed foods does not mean that U.S. food processors are not involved in sales abroad, however. To the contrary, they are involved in a major way, but mainly through the licensing of production by foreign producers or by direct investment abroad. There are many reasons for going this route—lower transportation costs; easier-to-deal-with regulatory requirements; easier-to-adjust-to local tastes and marketing opportunities; and improved access to food distribution and marketing systems. In 1988, U.S. food processors had direct investment abroad of around \$13 billion (USDA, ERS, p. 25). Of course, it works the same way for foreign food processors. In 1988, they held direct investments in the United States of \$16.4 billion. Handy and Epps report that in 1988 large U.S. food processors manufactured about 24 percent of their output through foreign subsidi-

aries while exporting only about 3 percent from U.S. plants (p. 8). This is consistent with Connor's finding that in the early 1980s, more than 31 percent of U.S.-based food processor sales took place in foreign markets and that 85 percent of these sales were from plants located abroad rather than exports (p. 86).

To summarize, the outlook for U.S. food and agricultural prosperity is dependent on the same factors as identified for the U.S. economy in general. Attention to productivity is the essential ingredient. Increased investment in plant and equipment, research and technology, infrastructure, and education and training are required to achieve improved productivity growth. And this increased investment, in turn, is dependent on a sound macro-economic policy which, above all else, will require a serious reduction in the budget deficit. What perhaps sets agriculture most apart from the other sectors, however, is the need to remove the many impediments to improved productivity that are found in public policy as it relates to food and agriculture.

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