

monthly review

July 1968

1. *State of the Union* 10

2. *Open Market Operations* 12

3. *Money and Credit* 14

4. *Reserve Requirements* 16

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U.S. Agricultural Exports— A Boon to Farmers

By Marvin Duncan and Blaine Bickel

Agricultural exports have become more important to both the farm and nonfarm sectors of the U.S. economy in recent years. Population and income growth, weather, and decisions of foreign governments have increased demand for U.S. agricultural products; but the availability of unused capacity in American agriculture has lessened the impact of such demand growth on U.S. consumers. Export sales provide markets for increasing proportions of U.S. farm production, as well as providing additional jobs and economic activity in the nonfarm sector. Agricultural export earnings continue to make important contributions to the U.S. balance of payments. Farmers and ranchers in the Tenth Federal Reserve District¹ are even more dependent on export markets for continued prosperity than are those in the United States as a whole.

HISTORICAL PERSPECTIVE

Important Legislation

In 1954 the U.S. Congress passed the Agricultural Trade Development and Assis-

¹ Colorado, Kansas, Nebraska, Wyoming, northern New Mexico, most of Oklahoma, and 43 counties in western Missouri.

tance Act (Public Law 480), as a partial solution to two related problems—large price-depressing surpluses stored at high cost to the Government and a shortage of international purchasing power (dollars) in foreign nations needing U.S. farm commodities. Though the act was primarily perceived as a means for disposing of unwanted surpluses, it soon evolved into an important humanitarian and market development tool. Early recipients of food aid such as Japan and Spain, and more recently some of the Arab countries, have become important commercial customers for U.S. agricultural exports.

When a 1966 crop failure in India raised the possibility of mass starvation, the United States felt obligated to offer assistance despite relatively low grain stock levels—at the time the United States had less than a year's supply of wheat on hand. The Food for Peace Act of 1966 and amendments to Public Law 480 placed new emphasis on using U.S. agricultural products to relieve hunger and malnutrition abroad. Greater assistance was made available to recipient countries committed to improving their own agricultural productivity. Recognizing that the long-run solution to hunger problems involved not only food aid, but also improved production capabilities in the

U.S. Agricultural Exports—

developing countries, the United States shifted its policy emphasis from surplus disposal to economic and market development.

Prior to 1966, Public Law 480 shipments accounted for about one-third of total U.S. agricultural exports. That contribution declined steadily through the 1960's and dropped below 4 per cent in 1974. Public Law 480 shipments have been made under three different titles, of which Title I is most important. Over 82 per cent of all Title I shipments were made for foreign currency, prior to discontinuance of this section of the act at the end of 1971. Presently, Title I sales are either for dollar credit with repayment periods of up to 20 years or for convertible local currency credit with a maximum repayment period of up to 40 years. Title II exports are for donations through voluntary relief agencies. Title III provides for the Secretary of Agriculture to barter or exchange agricultural commodities owned by the Commodity Credit Corporation for strategic materials, though the authority has not been used since 1968.

Growth of Export Sales

Over the years, efforts at building commercial export markets for U.S. agricultural products have proved **successful**. Agricultural exports grew from approximately \$3.2 billion in 1955 (with approximately one-third outside of specified Government programs) to \$9.4 billion in 1972 (with almost 88 per cent outside of specified Government programs). The agricultural industry looked forward to export sales in excess of \$10 billion in 1973. However, the confluence of a number of factors in 1972—both anticipated and unanticipated—pushed 1973 agricultural export sales to \$17.7 billion and has held them at close to \$22 billion each year since. Concurrently, the proportion of sales under Public Law 480 and other specified Government programs declined substantially as previously indicated. Chart 1 illustrates the

growth of export sales as well as the marked shift toward commercial sales.

FACTORS IN THE GROWTH OF TRADE

The more important reasons for the sharp increase in demand for U.S. agricultural exports in 1973 are related to increasing population and income, exchange rate adjustments, weather, and efforts by foreign governments to upgrade their citizens' diets.

Population

Steadily increasing world population— at about 2 per cent annually in recent years— has been putting additional pressure on world food supplies. During 1970-73, annual rates of population growth in developed countries typically ranged from .3 to 1.3 per cent—the U.S. annual growth rate was .9 per cent.² Rates of increase in underdeveloped countries were substantially larger during that period—India had a 2.1 per cent annual rate of increase and Pakistan's was 3.6 per cent.

Increased Per Capita Income

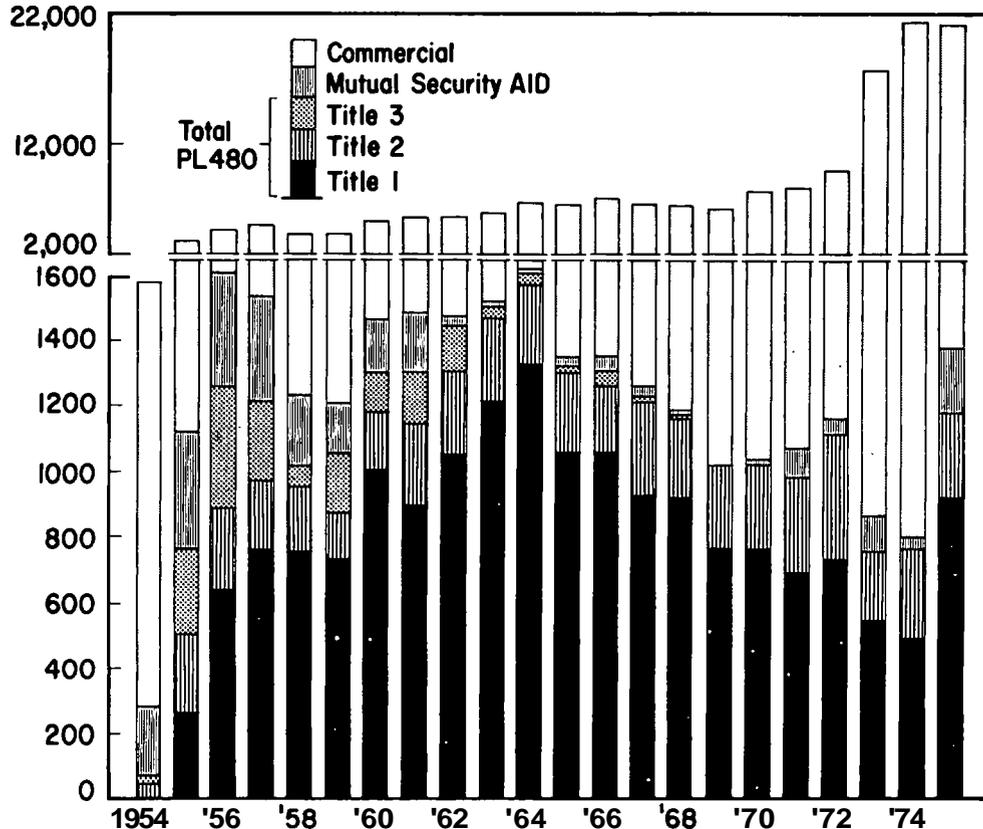
Concurrently, rising income levels around the world enabled countries to express their growing need for food as effective demand in the marketplace. With few exceptions, countries' per capita gross domestic product increased substantially from 1960 to 1973.³ Per capita gross domestic product in the developed market economies in 1973 was three times as large as in 1960, and in the 1970-73 period was growing at 4.1 per cent annually. Substantially less economic growth occurred in developing market economies, although the 1972 per capita figure was almost twice as large as in 1960, and in 1970-73 was growing at 3.2 per cent annually—about the same as in the

² *Statistical Yearbook*. 1974. United Nations. 1975. pp.67-79.

³ *Yearbook of National Accounts Statistics*, 1974. Vol. 3, United Nations. 1975. pp. 3-8 and 112-26. NOTE: Average annual growth rates of gross domestic product at constant prices are used.

Chart 1
U.S. AGRICULTURAL EXPORTS AND GOVERNMENT-FINANCED PROGRAMS

Millions of Dollars



SOURCE: Foreign Agricultural Trade of the United States, U.S. Department of Agriculture.

1965-70 period. Average annual gross domestic product growth per capita for the centrally planned economies slowed to 5.2 per cent in 1970-73 from 6.4 per cent in 1965-70, but there was still substantial annual economic growth.

Exchange Rate Adjustments

United States agricultural exports increased from \$7.8 billion in fiscal 1971 to \$21.6 billion in fiscal 1975. A portion of this increase can be attributed to currency value adjustments and movement toward floating exchange rates, which made U.S. agricultural exports more

competitive on world markets. The exchange rate adjustments resulting from the Smithsonian Agreement caused, for fiscal 1971, an average decline of 5.7 per cent in the price of U.S. agricultural exports to foreigners. (This agreement also raised the price of agricultural imports to U.S. citizens an average of 1.3 per cent.)⁴ More significant for future trade growth than the one-time influence of the Smithsonian Agreement was the 1973 decision by major

⁴ Marvin R. Duncan, Blaine W. Bickel, and Glenn H. Miller, Jr., *International Trade and American Agriculture*. Federal Reserve Bank of Kansas City. 1976 (forthcoming).

U.S. Agricultural Exports—

trading partners to float their currencies against the dollar, resulting in continuous currency value realignments. As a result, between January and July of 1973, the U.S. dollar's value dropped markedly on world exchange markets—making U.S. products less expensive to trading partners. For example, German importers paying 3.2 Deutsche Marks for one U.S. dollar in January were able to purchase a dollar in July for only 2.3 Deutsche Marks—an effective price reduction of 28 per cent for U.S. products. The converse situation occurs when U.S. dollars strengthen relative to other currencies—U.S. products then become more expensive to trading partners.

Although export volume for all U.S. agricultural products will likely increase as effective export prices decrease, soybeans and products, citrus fruits, cotton, and livestock products stand to gain most while food and feed grains benefit the least. Most major food and feed grain importing countries insulate domestic prices of these commodities from world prices through a variety of trade barriers—such as the European Economic Community's variable import levies. Thus, effective price reductions resulting from exchange rate adjustments may not be passed on to consumers in importing countries.

Weather

Certainly, the vagaries of weather have had an effect on U.S. agricultural exports during the early 1970's. Reductions in gross agricultural output, largely weather related, affected about one-fourth of the developing countries in 1971, followed by 40 per cent in 1972 and 33 per cent in 1973.⁵ About half the Western Hemisphere and South and East Asian countries experienced production decreases in 1972, while about half the African and West Asian countries experienced decreases in 1973. World agricultural production in 1974 was at

⁵ *World Economic Survey, 1974, Part I.* United Nations, 1975, pp. 6-9

about the same level as in 1973. The average rate of expansion in agricultural production during 1971-74 was only 1.5 per cent per year for developing countries, well below rates of population increase in most of these countries. World agricultural production increased at an annual rate of 2.1 per cent during the same period.⁶

Better moisture conditions in Southeast Asia and Africa enabled many developing countries to increase their food supply in 1975. The U.N. Food and Agriculture Organization has projected a further increase for 1976—7 per cent over 1975—in world production of wheat and coarse grains.

Upgrading Diets

Decisions by centrally planned economies to upgrade their citizens' diets necessitated large food and feed grain imports by these countries. Five-year plans calling for increased meat production resulted in not only higher average import levels, but also sharply higher imports in years of production shortfalls—in part, to meet ambitious livestock production goals.

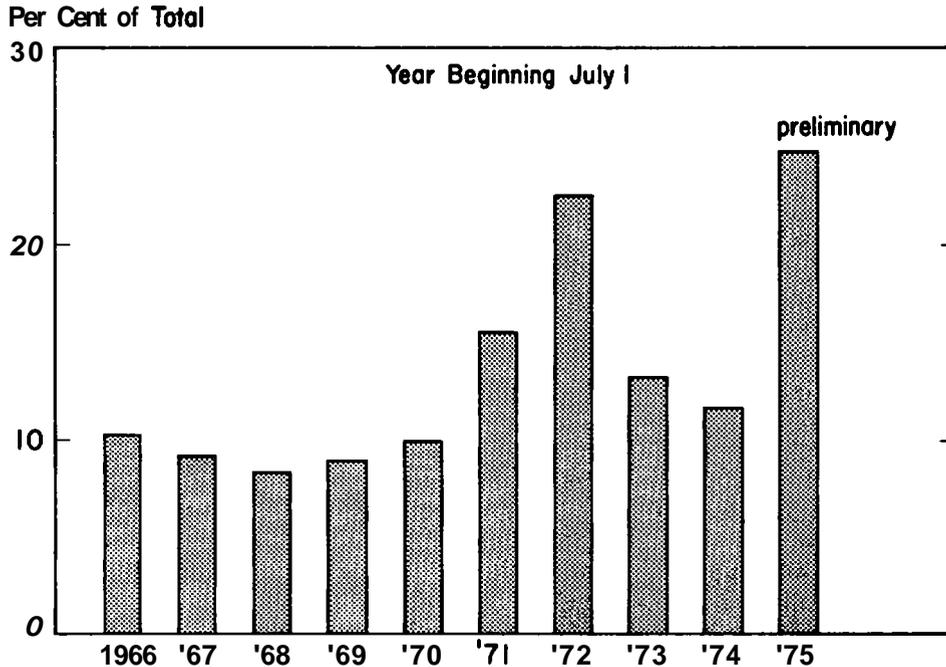
In the past decade imports of wheat and feed grains by the centrally planned economies as a proportion of total quantities moving in world trade have increased from 10 per cent in fiscal 1967 to 25 per cent in fiscal 1976. Chart 2 illustrates these trends in world wheat and feed grain trade. In fact, some 90 per cent of the variability in world wheat and feed grain trade in recent years is traceable to changes in import and export levels by one country—the U.S.S.R.

United States agricultural exports to members of the Organization of Petroleum Exporting Countries (OPEC) totaled \$1.7 billion in fiscal 1975—more than 4.5 times the 1971 value.⁷ Since grains and preparations, and

⁶ *World Economic Survey, 1974, Part II.* United Nations, 1976, p. 43.

⁷ "U.S. Agricultural Trade with OPEC and Other Major Oil Exporters." *Foreign Agricultural Trade of the United States.* U.S. Department of Agriculture, March 1976, pp. 5-17.

Chart 2
U.S.W. AND EASTERN EUROPE IMPORTS
AS A PER CENT OF WORLD IMPORTS
(Wheat, Wheat Flour, and Feed Grains)



SOURCE: World Grain Statistics: 1950-51/1972-73, and Foreign Agriculture Circular, FG5-76, Foreign Agricultural Service, U.S. Department of Agriculture (1974 and March 1976).

oilseeds and products made up 92 per cent of the value of 1975 trade, its importance to the Tenth District is readily apparent. These OPEC countries have used their newly acquired wealth—from oil exports—to upgrade the diets of their citizens. Nowhere is this more evident than in the Arabian Peninsula, where agricultural imports in 1975 were double the 1972 value and U.S. agricultural exports have tripled since fiscal 1973 to \$168.7 million in fiscal 1975.

Oil exporting countries can be expected to become increasingly important markets for U.S. agricultural exports. A significant trend has been the shift of these countries from foreign aid recipients to commercial markets as

they have begun to receive oil revenues. For example, the United States exported \$1.9 billion in Government aided sales and \$2.7 billion in commercial sales to Indonesia, Algeria, Iran, Columbia, and Tunisia between fiscal 1955-75. In fiscal 1974 and 1975 U.S. commercial sales to these countries totaled \$1.7 billion and Government aided sales only \$86 million.

CHANGING PATTERNS OF WORLD AGRICULTURAL TRADE

The U.S. share of world trade in agricultural commodities, as recently as 1968-72, was 13.2 per cent—a modest growth from the 1951-55

Table 1
GROWTH IN U.S. GRAIN AND
SOYBEAN EXPORTS,
BY DESTINATION OF SHIPMENTS,
1969-71 TO 1973-75

Country or Region	Per Cent			
	Total Grain	Wheat	Feed Grains	Soy-beans
Developed	38	12	55	75
European Economic Community	12	1	20	58
Japan	11	5	15	15
Others	15	6	20	2
Less Developed	30	42	22	5
Centrally Planned	32	46	23	20
U.S.S.R.	21	31	15	11
Eastern Europe	3	3	3	1
People's Republic of China	8	1	2	5
8	1	2	5	8
World	100	100	100	100

SOURCE: Foreign Agricultural Trade of the United States, Economic Research Service, U.S. Department of Agriculture, February 1976, p. 36.

share of 11.9 per cent.⁸ Significant shifts in world demand and trade patterns for agricultural products have increased the U.S. share of trade to over 17 per cent for each year since 1972. From 1969-71 to 1973-75 the United States accounted for 85 per cent of the increase in total world grain exports. In 1975, 52 per cent of world grain exports originated in the United States. The U.S. share of wheat and coarse grains moved in world trade has increased from 31 and 39 per cent, respectively, in 1969-71 to 48 and 52 per cent presently. As Table 1 illustrates, the developed countries of the world have accounted for most of the growth in U.S. feed grain and soybean exports, while the underdeveloped and centrally planned

⁸ "U.S. Agricultural Exports and World Trade," *Foreign Agricultural Trade of the United States*, U.S. Department of Agriculture, February 1976, pp. 33-41.

countries have accounted for most of the growth in U.S. wheat exports.

Looking at different data, less developed countries have become more dependent on the agricultural exports of developed countries since 1955. Moreover, an even greater increase in dependence (from 17 per cent to 40 per cent in that time period) has occurred for centrally planned countries. While the less developed countries' share of world grain exports declined from 23 per cent to 12 per cent, their share of grain imports from the developed countries increased from 57 to 78 per cent between 1956-60 and 1972-73. Centrally planned countries have over that same period of time become almost totally dependent on developed countries for their imported grain supplies. In 1956-60 these countries received 77 per cent of their grain imports from intraregional trade (trade among themselves). That proportion had shrunk to 14 per cent by 1973, with 82 per cent of their grain imports originating in developed countries.

IMPACT OF AGRICULTURAL EXPORTS ON THE UNITED STATES

Agricultural exports make important contributions to various sectors of the economy. Farmers rely on exports for a significant portion of their cash receipts, and many nonfarm workers are employed directly or indirectly in assembling, processing, and distributing agricultural products for export.

Farm Sector

The benefits from agricultural exports are not evenly distributed among states or farm regions. Alaska received no income that could be attributed to exports in fiscal 1975, while Rhode Island and New Hampshire received only \$600,000 and \$1,000,000 respectively. On the other hand, Illinois and Iowa each derived about \$1.7 billion from exports. Kansas and Texas about \$1.3 billion each, and California \$1.1 billion. The next three states—each with approximately \$900 million in exports—were

Table 2
AGRICULTURAL EXPORTS BY TENTH DISTRICT STATES*
Fiscal Year 1975
(Millions of Dollars)

Commodity	Colo.	Kans.	Mo.†	Nebr.	N. Mex.†	Okla.†	Wyo.	Tenth Dist. States	United States	Tenth Dist. as % of U.S.
Wheat and Products	195.5	921.7	109.8	285.0	8.0	388.3	18.6	1,926.9	5,000.9	38.5
Feed Grains	52.3	245.2	151.1	393.8	11.5	31.0	4.8	889.7	4,812.6	18.5
Soybeans and Products	—	69.4	322.5	96.4	—	17.0	—	505.3	4,155.7	12.2
Cottonseed and Products	—	—	4.5	—	2.7	5.7	—	12.9	216.4	6.0
Flaxseed and Products	—	—	—	—	—	—	—	—	78.2	—
Peanuts and Peanut Oil	—	—	—	—	.6	9.8	—	10.4	166.2	6.3
Rice	—	—	5.0	—	—	—	—	5.0	1,002.2	.5
Cotton	—	—	20.2	—	11.5	29.8	—	61.5	1,028.0	6.0
Tobacco	—	—	1.0	—	—	—	—	1.0	910.1	1
Fruits	.7	1	.6	—	—	1	—	1.5	648.4	.2
Vegetables	20.0	1.4	.2	24.3	1.1	—	5.3	52.3	399.8	13.1
Dairy Products	1	.6	1.4	2.4	—	1	—	4.6	140.6	3.3
Meats and Products	8.5	16.4	20.4	22.3	2.5	8.8	2.2	81.1	341.7	23.7
Hides and Skins	14.4	18.1	13.2	21.5	4.4	14.4	4.3	90.3	301.4	30.0
Poultry Products	.9	.5	2.8	.7	.2	.6	—	5.7	123.4	4.6
Lard and Tallow	19.4	28.3	23.7	34.9	6.3	21.1	5.0	138.7	484.4	28.6
Other	14.0	43.7	11.4	28.6	.6	17.2	2.7	118.2	523.7	22.6
Total Exports	325.8	1,345.4	687.8	909.9	49.4	543.9	42.9	3,905.1	20,333.7	19.2
Total Cash Receipts from										
Farm Marketings	2,107.9	3,725.8	2,636.5	4,038.2	553.5	1,813.8	345.4	15,221.1	90,239.9	16.9
Exports as Per Cent of Cash Receipts	15.5	36.1	26.1	22.5	8.9	30.0	12.4	25.7	22.5	—

*Estimates based on each state's share of total production.

†Amount is for entire state, though only a portion of the state is within the Tenth Federal Reserve District.

SOURCE: Foreign Agricultural Trade of the United States, U.S. Department of Agriculture.

Minnesota, Nebraska, and Indiana. With the exception of California, where many specialty crops are grown, each of the leading states is noted for the production of wheat, feed grains, or soybeans. A look at the composition of total agricultural exports from the United States reveals why these states led in income from farm exports. Grain and oilseed exports made up nearly three-fourths of total farm exports in each of the last 3 years.

One measure of the importance of exports to the farmer is to express income from exports as a percentage of farm income. Cash receipts from farm marketing are used to indicate farm income, since cash receipts comprise a major

portion of farm income and such data are available by states. Table 2 summarizes the value of exports by commodity, and exports as a per cent of cash receipts by Tenth Federal Reserve District states.

A significant portion of Tenth District farm income is dependent on agricultural exports. In fiscal 1975, 19.2 per cent of U.S. farm exports were produced in the District, compared with 15.2 per cent in fiscal 1970. This increase in relative importance is largely due to the increased export of wheat and feed grains in recent years. Exports represented 25.7 per cent of the District's cash farm marketings in fiscal 1975, which was more than twice the 12.1 per

U.S. Agricultural Exports—

cent contribution 5 years earlier. On a commodity basis, almost two-fifths of all U.S. wheat exports came from the District—Kansas alone produced over 18 per cent of the total value of all wheat exported during fiscal year 1975. Other exports that made important contributions to District farm income include hides and skins, lard and tallow, meats and products, feed grains, vegetables, and soybeans. Exports produced on Kansas farms totaled only \$314 million in fiscal 1970, or 16.5 per cent of cash receipts. Five years later, Kansas farmers received more than one-third of their total cash receipts from exports. In other District states, exports expressed as a percentage of cash receipts during fiscal years 1970 and 1975, respectively, were Colorado, 6.3 and 15.5 per cent; Missouri, 13.6 and 26.1 per cent; Nebraska, 13.1 and 22.5 per cent; New Mexico, 4.8 and 8.9 per cent; Oklahoma, 11.0 and 30.0 per cent; and Wyoming, 2.2 and 12.4 per cent. Agricultural exports contributed just over \$1 billion to the District's farm income in fiscal 1970. Viewed in relation to the current \$3.9 billion contribution, income from foreign sales has grown from the status of a bonus to that of an indispensable component of farm income in only 5 years.

The same can be said for the nation as a whole, even though the growth rate has been a little slower than that of the Tenth District. Agricultural exports—at \$6.6 billion—made up 13.3 per cent of U.S. cash receipts in fiscal 1970, compared with 22.5 per cent in fiscal 1975. The agricultural export market is now of vital importance to the U.S. farmer, absorbing the production from more than one-fourth of his cropland. During fiscal 1976, the United States expects to export almost 60 per cent of its wheat crop, about half of its soybeans, 40 per cent of its cotton crop, and about a fourth of its corn.

The growth in foreign demand for agricultural products has been a major factor in pushing net incomes of U.S. farmers to

record high levels in recent years, but it has also significantly increased price fluctuations. U.S. markets react sharply to changes in foreign crop reports and decisions concerning imports by planned economy countries. These price swings directly affect the incomes of crop producers in the United States, and are particularly disruptive to domestic livestock producers. Thus, greater dependence on export markets has increased the level of risk facing U.S. agricultural producers.

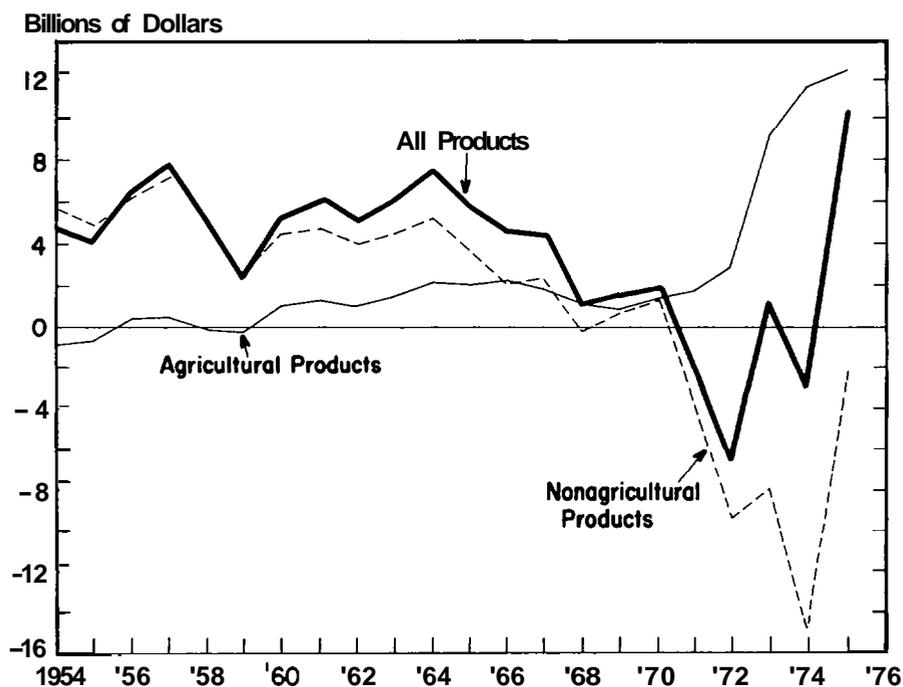
Nonfarm Sector

In addition to the direct benefits farmers receive from foreign sales, farm exports make important contributions to many U.S. industries and to the economic health of the nation. Farmers' expenditures for such inputs as machinery, fuel, and fertilizer stimulate economic activity in manufacturing, transportation, and other business areas. And as the extra income derived from exports is spent, the benefits are distributed throughout the economy. While 1974 agricultural exports at the port of shipment had a direct value of \$22 billion, input-output model analysis indicated about \$43 billion in total business activity was required to produce the exports themselves and to provide supporting goods and services. Thus, the necessary supporting activity generated an additional \$21 billion worth of output—70 per cent of which accrued to nonfarm sectors. The additions amounted to \$6 billion in the farm sector: \$2 billion from food processing; \$2 billion from trade and transportation; \$5 billion from manufacturing; and \$6 billion from other services.⁹ Specifically, each dollar of farm exports in 1974 generated an additional 96 cents of goods or services in the U.S. economy.

The far-reaching impact of agricultural

⁹ Gerald Schuler, "Impacts of Agricultural Trade on Food and Fiber Sectors of the U.S. Economy." *Agricultural Outlook*. U.S. Department of Agriculture. Economic Research Service, September 1975, pp. 15-17.

Chart 3
U.S. BALANCE OF TRADE, 1954-75



SOURCE: Foreign Agricultural Trade of the United States, U.S. Department of Agriculture.

exports is further illustrated by the number of jobs that are dependent on that activity. In addition to the estimated half million farmworkers required to produce the raw farm products for export, the Economic Research Service estimates that more than 650,000 nonfarm jobs were directly or indirectly related to the export of farm commodities. Of these nonfarm workers, 300,000 were employed in the trade or transportation industry, 100,000 in manufacturing, 50,000 in food processing, and 200,000 were engaged in other services.

Balance of Trade and Payments

The increase in agricultural exports in recent years has also had an important impact on the

U.S. balance of trade. As seen in Chart 3, the nonagricultural balance of trade maintained a relatively high surplus until the late 1960's. During 1971-74, increased imports of various types of machinery, oil, steel, chemicals, and consumer goods contributed to increasingly larger deficits in the trade balance for nonagricultural items, but the major factor was higher petroleum prices. Nonagricultural imports increased from \$61 billion in 1973 to \$90 billion in 1974, with more than half the increase due to higher oil prices. The nonagricultural trade deficit reached a high of \$14.7 billion in 1974. However, a substantial increase in exports, combined with a decline in imports during 1975, resulted in a reversal of

U.S. Agricultural Exports—

the recent trend and left the nonagricultural sector with a trade deficit of only \$2.3 billion.

The agricultural balance of trade has not registered a deficit since 1959. Exports have risen faster than imports, especially during the 1973-75 period, to a surplus of \$12.6 billion in 1975. Overall deficits were posted for 3 of the 5 years during 1971-75, however, because the agricultural surplus did not offset the nonagricultural deficit. The total trade balance was in deficit \$3.0 billion in 1974, but due to improvement in both the agricultural and nonagricultural sectors, the 1975 trade balance was a \$10.3 billion surplus.

Comparing total exports and imports of agricultural commodities is the conventional method of **measuring** the agricultural trade balance. A different method is to compare total agricultural exports to competitive agricultural imports. On this basis, the \$15.7 billion surplus in 1975 indicates that U.S. exports are doing quite well compared with similar products produced abroad and imported into the United States. Another comparison can be made between commercial exports (commodities sold for dollars rather than sold under **government-financed** programs) and total imports. The phenomenal growth of dollar sales in recent years compared with imports pushed the commercial agricultural trade balance to \$10.9 billion in 1975. Finally, commercial exports can be compared to competitive imports to measure the performance of U.S. commodities sold for dollars against imports of commodities that are competitive with those produced in the United States. This indicator shows a highly favorable farm trade balance of \$14.0 billion in 1975.

Since the balance of trade is the difference between the value of merchandise imported and exported in a year, it is one component of the balance of payments which measures the exchange of all goods, services, and capital. Agriculture's contribution to the 1975 balance of payments was \$20.9 billion after adjustments for the effects of noncommercial exports.

Benefits Versus Costs

Certain costs, as well as benefits, have accrued to the nonfarm sector during the 1972-76 period of rapid agricultural export expansion. Food has become more costly in real terms to the U.S. consumer. The food component of the Consumer Price Index (**CPI**) in January 1976 was 52.7 per cent higher than the 1971 average level. The CPI for all items increased 37.4 per cent and average hourly earnings per production worker on private **nonagricultural** payrolls increased 37.6 per cent during the same period. However, when measured over a longer period (from 1967 to January 1976) increases in food costs and hourly earnings were approximately **equal**—80.8 per cent and 79.8 per cent, respectively. It is important to note that U.S. food price increases during the period of rapid agriculture export expansion have been less than in most other industrialized countries.

CONCLUSION

United States agricultural exports have increased at a faster rate than even the most **optimistic** observers would have projected prior to 1972. Since 1972, export sales have continued at high levels with the U.S. Department of Agriculture projecting a record tonnage for all agricultural exports during fiscal 1976—104.87 million metric tons. American farmers have responded to increased demand for their products and the resultant higher product prices by increasing production markedly. Corn production in the United States has increased from 4.103 million bushels in 1965 to 5,737 million bushels in 1975. Wheat production has increased from 1,316 million bushels to 2,134 million bushels, and soybean production from 846 million bushels to 1,521 million bushels during the same time period. These production increases have permitted the growth in export marketings with only

moderate real increases in U.S. consumer food costs since **1971**. U.S. food expenditures, as a per cent of disposable personal income in **1975**, were **17.1** per cent—somewhat greater than in the **1971-74** period, but less than in any year prior to **1971**.

The proportion of U.S. agricultural production exported and the new capital investment by farmers to meet expanded market demand for farm products have focused public attention on U.S. agriculture's increased reliance on export markets. These markets are needed to maintain continued economic prosperity for farmers, as well as for those who provide farm inputs and processing and marketing services. Consequently the Multilateral Trade Negotiations presently being

conducted under the sanction of the General Agreement on Tariffs and Trade (GATT) take on added importance—as does trade policy formulation by individual governments, the United States, or its trading partners. Since an estimated two-thirds of U.S. agricultural product exports are subject to some form of restriction in foreign markets, reduction of these barriers can benefit U.S. farmers. Barriers to trade of all types should be relaxed so the principles of comparative advantage and market pricing can operate, signaling market demands to the world's farmers. U.S. farmers have demonstrated their ability to compete under such conditions, and can be expected to realize additional income opportunities if they can gain access to new and expanded markets.

UNEMPLOYMENT INSURANCE

Paul III: A Critique

By Steven P. Zell

Four decades after its creation, the Federal-state system of unemployment insurance (UI) remains one of our nation's principal tools for economic stabilization. As has been seen in Parts I and II of this series, the UI system has evolved into an enormously complex and varied organization.¹ Almost every facet of the system has expanded tremendously. For example, since the mid-1950's, the number of covered workers has grown far more rapidly than the total work force, the level of average weekly benefits adjusted for inflation has increased almost twice as fast as real average spendable weekly earnings, and the potential duration of benefits has been expanded from 26 weeks to 65 weeks.²

In recent years, economists have become extremely interested in the potential impact of these changes on the level of unemployment. Since the earnings a worker foregoes while unemployed can be thought of as the cost of

that unemployment, economic theory predicts that as this cost is reduced via liberalized unemployment benefits, the level of unemployment in the economy might increase. Considerable research has been conducted on the nature and magnitude of these unintended effects of the UI program, often with conflicting results. This concluding article on unemployment insurance will examine some of the major criticisms of the UI system in the light of this research.

WHAT AWE WORK DISINCENTIVE EFFECTS?

Ever since the program's inception, UI benefits have been designed with two basic objectives directly related to the unemployed worker. First, on the assumption that the worker was involuntarily unemployed for a short period, benefits were established to replace a portion of his lost wages. Second, benefits were to go only to "regular" workers, and could not be set at so high a level as to make the receipt of benefits more attractive than working.

The difficulty with the second objective lies in that the desirability of working, or the

¹ Parts I and II appeared, respectively, in the February 1976 and June 1976 issues of this *Review*.

² For one estimate of these changes from 1955 to 1973, see George M. von Furstenberg, "Stabilization Characteristics of Unemployment Insurance." unpublished paper. Council of Economic Advisors. p. 5.

acceptability of a particular job, is affected by a large number of economic and noneconomic factors. On the noneconomic side, "some workers are choosier than others about jobs. Some place a higher value on spending time at home with their families than do others. And the psychic costs of being unemployed are higher for some workers than for others."³ Economically, the important question is how costly is unemployment and what alternative assets and income sources are available? If other things are equal, the better a worker can afford to be unemployed, "the less effort he is likely to devote to searching for a job and the more selective he is likely to be about the kind of job he will accept."⁴

The UI system can be said to have work disincentive effects to the extent that it results in a voluntary reduction in the supply of labor in the economy. For example, an unemployed worker might turn down as unsuitable a job which, in the absence of UI, he would have accepted. Similarly, a worker, knowing that his plant will be closing, might delay searching for a job in the knowledge that he can depend on UI benefits when he decides to search. Unlike collecting benefits under the pretense of seeking work, however, neither of these acts is illegal nor constitutes fraud. Furthermore, to the extent that additional job search results in higher paying, more stable employment, the work disincentive effects might prove to have net positive results.⁵ Whether or not these work disincentive effects should be discouraged depends, then, on their relative mix of negative and positive effects. Determining the net effect,

³ Raymond Munts and Irwin Garfinkel, *The Work Disincentive Effects of Unemployment Insurance* (Kalamazoo: The W. E. Upjohn Institute, September 1974), p. 56.

⁴ *Ibid.*, p. 56.

⁵ See Steven P. Zell, "Recent Developments in The Theory of Unemployment," Federal Reserve Bank of Kansas City *Monthly Review*, September-October 1975, pp. 5-6, for a discussion of the job-search, labor-turnover theory of unemployment.

however, is not simple. For example, though UI benefits lower the cost of search, they simultaneously lower the cost of increased leisure which might well be substituted for both work and job search. Secondly, even if additional job search does result in more pleasant or higher paying jobs, the subsidization of individual searchers can be justified only if it can be shown that an improved job match constitutes some benefit to society which does not simultaneously accrue to the individual searcher. Otherwise, the worker would be likely to search the optimum amount in the absence of subsidies.⁶

THE CENTER OF THE CONTROVERSY

While some research had been done previously on the unintended effects of the UI system, by far the greatest impact has resulted from the findings of Professor Martin S. Feldstein of Harvard University. In a study prepared for the Joint Economic Committee of Congress in September 1973, and reiterated in numerous professional and popular articles since that time, Feldstein concluded that the unemployment insurance system was responsible for a significant part of the observed unemployment in the United States.⁷ Much of the research that has been conducted since that

⁶ Kathleen Classen, *The Effect of Unemployment Insurance on the Duration of Unemployment and Subsequent Earnings*. The Public Research Institute of the Center for Naval Analyses, September 1975, p. 1.

⁷ Martin S. Feldstein, *Lowering The Permanent Rate of Unemployment*. U.S. Congress, Joint Economic Committee, 92nd Congress, 2nd Session, September 1973 (Washington, D.C.: Government Printing Office, 1973).

Feldstein originally presented these views in hearings before the Joint Economic Committee, 92nd Congress, 2nd Session in 1972, published as "Policies to Lower the Permanent Rate of Unemployment." See also "The Economics of the New Unemployment," *The Public Interest*, No. 33, Fall 1973, pp. 28-42, "Unemployment Compensation: Adverse Incentives and Distributional Anomalies," *National Tax Journal*, Vol. 27, No. 2, June 1974, pp. 231-44, and "Unemployment Insurance: Time for Reform," *Harvard Business Review*, March-April 1974, pp. 51-61.

Unemployment Insurance

date on the UI system has been an attempt to either support or contradict Feldstein's findings and methodology.

Feldstein's Research

Feldstein begins his analysis with a discussion of the major characteristics of unemployment in the United States during nonrecessionary times. First, the *duration* of unemployment is quite short. For example, in 1973, when the unemployment rate was a relatively high 4.9 per cent, more than half of the unemployed were without jobs for less than 5 weeks and less than 8 per cent were unemployed for more than 30 weeks. Second, *job losers* account for less than half of all the unemployed, the remainder consisting of job quitters, new entrants, and reentrants to the labor force. Third, *turnover* is extremely high, especially in manufacturing, where "total hirings and separations have each exceeded 4% of the labor force per month for more than a decade."⁸ Lastly, most layoffs are brief and *temporary*. The average manufacturing company rehires about 85 per cent of those it lays off.

All of these factors are very important for understanding the effects of the UI system on unemployment. Consider, for example, the duration of unemployment. The total amount of unemployment in the economy is the sum over all individuals of the number of times they are unemployed multiplied by the average duration of their spells of unemployment. Therefore, unemployment can be increased by either increasing the number of spells of unemployment or lengthening the duration of the spells. Feldstein stresses that, in a variety of ways, unemployment insurance has both of these effects.

The Effects of UI on the Structure of Employment

According to Feldstein, the negative aspects of UI affect not only the unemployed worker

but the structure of employment as well. UI benefits are financed by a payroll tax which tends to vary with the amount of labor turnover of the particular firm. However, because this "experience rating" system is imperfect, former employees of firms with high turnover can receive UI benefits well in excess of the tax cost to the firm.⁹ This creates an incentive for both employers and employees to structure employment with too much seasonal and cyclical variation and too many casual jobs. It has this effect because the net wage to employees (wages plus unemployment benefits) exceeds the cost to employers. "Because the price of unstable labor has been artificially subsidized, employers organize production in a way that makes too much use of unstable employment. Similarly, the economy as a whole consumes relatively too much of the goods that are produced in this way," because the prices of these goods are artificially low.¹⁰

Likewise, workers may be induced to accept seasonal, cyclical, or temporary jobs, even knowing they are likely to be laid off, because they know that unemployment benefits will be available to supplement their lost income. The net effect is the preservation and expansion of the *secondary sector* of the dual labor market, with its low wages, poor working conditions, layoffs, little chance for advancement, and high turnover.¹¹

In the absence of unemployment compensation, most workers could be induced to accept unstable work only if the wages were sufficiently higher than those in available stable employment so as to compensate for the greater probability of becoming unemployed. Similarly, if employers had to pay the full cost of UI benefits, they would tend to incur the expense

⁸ Feldstein, *Harvard Business Review*, p. 53.

⁹ Zell, "Unemployment Insurance Part I," pp. 13, 16-17, footnote 18, and discussion later in the present article.

¹⁰ Feldstein, *The Public Interest*, p. 34.

¹¹ See Zell, "Recent Developments in The Theory of Unemployment," pp. 7-10.

Table 1
REPLACEMENT OF LOST AFTER-TAX WAGES BY UNEMPLOYMENT BENEFITS
(Kansas City, Mo., 1975)*

	Hourly Wage			
	\$3/Hour	\$4/Hour	\$5/Hour	\$6/Hour
1. Gross Wage Income - 52 weeks of work	\$6,240	\$8,320	\$10,400	\$12,480
2. Gross Wage Income - 39 weeks (without UI)	4,680†	6,240	7,800	9,360
3. Gross Wage Lost	1,560	2,080	2,600	3,120
4. After-Tax Income - 52 weeks	5,902	7,292	8,789	10,292
5. After-Tax Income - 39 weeks	4,691†	5,902	6,922	8,049
6. Net Wage Lost	1,211	1,390	1,867	2,243
7. UI Benefit	1,014	1,105	1,105	1,105
8. Net Total Income Lost	197	285	762	1,138
9. Replacement Rate (#7 - #6) %	84	79	59	49
10. Implicit Tax Rate [100 - (#8 ÷ #3) 100] %	87	86	71	64

*Calculations assume 13 weeks of unemployment. After-tax income is net of all Federal, State, and local income taxes and the Social Security tax.

†After-tax income exceeds gross wage income due to low-income allowance.

of improved scheduling, greater inventory variability, more off-season work, and new technology so as to reduce the instability of employment. Finally, consumer demand for the output of these firms would fall as their prices rose, further reducing the amount of unstable employment.

The Effects of UI on the Duration of Unemployment

The second side of Feldstein's argument pertains to the work disincentive effects of unemployment compensation. Feldstein dismisses as a myth the often cited figure that UI benefits replace, on the average, about one-third of lost weekly wages. The flaw in these data, he notes, is that they ignore the fact that wages are taxed while UI benefits are not. Taking into consideration Federal and state income taxes and the Social Security tax, Feldstein found in his initial research that UI benefits in the state of Massachusetts for a family of four would replace more than 80 per

cent of the wages lost from an additional week of unemployment. Under some special circumstances, the wage replacement figure might even exceed 100 per cent.

Criticized on the grounds that Massachusetts was an atypical state, Feldstein calculated wage replacement ratios for all states and for 13 different family types. His findings confirmed his initial results. Men and women with median earnings for their state were entitled to unemployment benefits which replaced, respectively, over 60 per cent and over 70 per cent of lost weekly after-tax wages. Furthermore, the income replacement effect is greater for those persons with lower-than-average earnings; e.g., men and women whose income was only 70 per cent of the median for their state had replacement rates of 69 per cent and 78 per cent, respectively.

Similar calculations for Kansas City, Mo., in 1975 also confirm Feldstein's findings (Table 1). In each of four cases, a married worker earning either \$3, \$4, \$5, or \$6 per hour, was

Unemployment Insurance

assumed to have two dependent children and a nonworking spouse. Consider the worker who earned \$3 per hour. If he worked 52 weeks during the year, his gross wage income would have been \$6,240. Had he been unemployed for 13 weeks, this would have dropped to \$4,680, yielding a loss of \$1,560. This, however, represents his lost *gross* wages. Taking into consideration his reduced liability for Federal, state, and local income taxes and the Social Security tax, the amount of lost *net* wages would total only \$1,211. His UI benefit entitlement of \$1,014 for 13 weeks of unemployment would therefore replace 84 per cent of this net *wage* loss yielding a net *income* loss of only \$197. Looked at another way, since working an extra 13 weeks yields the worker \$1,560 of additional *gross* income, but only \$197 of additional *net* income, the implicit tax rate on this extra work is 87 per cent. By staying unemployed 13 weeks rather than 12 weeks, the worker would actually lose only \$15.20, or \$0.38 per hour.

Distributional and Unemployment Effects

Feldstein uses his results to examine two important questions: (1) What groups in the population benefit most from the present structure of UI benefits? and (2) What are the total effects on unemployment of the distortions introduced by UI?

On this second question, Feldstein provides some rough estimates of the magnitudes that might be involved.

For example, a reduction of three weeks in the average ten-week spell of insured unemployment would lower the overall unemployment rate by 0.75 [percentage points]. If one-third of the purely seasonal unemployment were avoided, the overall unemployment rate would fall by an additional 0.25 [percentage points]. Reducing the cyclical variation in labor

demand by 20% would reduce average unemployment by another 0.25 [percentage points].¹²

Given a labor force of almost 94 million persons, these changes could represent a decrease in unemployment of almost 1.2 million persons.¹³

Regarding the first question, if it were true that the poor are the greatest beneficiaries of UI benefits, some of the distortions introduced by the system might be justified. Unfortunately, this is not the case. In a study using 1970 data, Feldstein discovered that, "Half of the benefits go to the families in the top half of the income distribution. Fifteen per cent of the benefits . . . went to the 18 per cent of families with incomes over \$20,000. Only 17 per cent of the benefits went to families with incomes under \$5,000."¹⁴ Some of the reasons given for these surprising facts pertain to the different employment characteristics of poor workers relative to those with higher incomes, as well as to the basic structure of the UI system. When unemployed, poor workers are more likely to have quit their last job, to have worked too little to earn sufficient wage credits, or to have worked in employment not covered by the UI system. Even when qualifying for benefits, poor workers will frequently qualify for less than the maximum duration and will more often exhaust their benefits. Middle and higher income workers, on the other hand, will be entitled to higher benefits, will more often have two wage earners in a family, thus increasing the risk of unemployment, and be more likely to be laid off only temporarily and recalled by the same firm.

In addition to the fact that middle and higher income workers receive a **dispro-**

¹² Feldstein. *Harvard Business Review*, p. 58.

¹³ The research of Stephen Marston and of Kathleen Classen, discussed below, presents alternative interpretations and estimates of these changes.

¹⁴ Feldstein, *National Tax Journal*, p. 237.

portionate share of UI benefits, a further distortion is added by the tax system. Because higher income families are in higher income-tax brackets, the tax savings resulting from the fact that UI benefits are not taxed go far more than proportionately to these higher income families. Thus, while **29** per cent of all families earned over **\$15,000** in **1970**, they received **34** per cent of the UI tax savings. On the other hand, the **28** per cent of all families with incomes below **\$5,000** received only **15** per cent of the tax savings.¹⁵

If unemployment benefits were taxed as income, the Government would receive about \$1 billion in additional revenue (in nonrecessionary periods) and part of the regressivity of UI benefits would be reversed. Furthermore, the work disincentive effect of UI payments would be somewhat reduced. For example, in Kansas City, Mo., the effective tax rate on the income earned by accepting a job after **12** weeks of unemployment rather than **13** weeks would drop from **87** per cent to **76** per cent for the worker earning **\$3** per hour, if UI benefits were taxable.

RESOLVING THE CONTROVERSY

While many of Feldstein's findings pertaining to disincentive effects on individuals and firms are intuitively persuasive, his claims for their magnitude, especially in the aggregate, have been extensively debated. Much of the early criticism of his research, however, was based more on differing views of the structure and operation of the labor market than on contradictory empirical results.¹⁶

The two most important criticisms were, first, that there was little evidence confirming the significant effect of the UI system on either the duration of unemployment or the amount

of seasonal, cyclical, or unstable employment in the economy. Second, it was argued, whatever effects there were on unemployment duration, they would be unlikely to be of such magnitude as to significantly affect the overall unemployment rate. While data problems continue, especially regarding the effects of UI on the structure of employment, recent research has greatly clarified the duration issue and other important questions about the impact of the UI system.

Recent Research on Duration

In a **1975** study for the Brookings Institution, Stephen T. **Marston** developed a sophisticated model for estimating the effects of UI benefits on the duration of **unemployment**.¹⁷ Like Feldstein, **Marston** compared the duration of unemployment of insured and uninsured workers, hoping to estimate the disincentive effects of UI benefits. Correctly criticizing Feldstein for misinterpreting published duration data, **Marston** adjusted these data through a complex procedure which he hypothesized would yield more accurate results. In this manner, **Marston** calculated that unemployment insurance lengthens the expected duration of completed spells of unemployment for the insured by between **15.7** per cent and **31.4** per cent. The net effect of this, according to **Marston**, would be to raise the overall unemployment rate by about **0.2** to **0.3** percentage points. This contrasts with Feldstein's rough estimate that the unemployment rate might be lowered by **0.75** percentage points by reducing the effect of UI benefits on unemployment duration.

Numerous problems exist, however, in interpreting Marston's results. The most important of these problems is inherent in any comparison of insured and uninsured workers. Basically, most insured unemployed workers

¹⁵ *Ibid.*

¹⁶ See *Comments* by R. A. Gordon, Bennett Harrison, Charles C. Holt, Hyman Kaitz, and Frank C. Pierson, and Feldstein's reply in Feldstein, *Lowering the Permanent Rate of Unemployment*, pp. 56-101.

¹⁷ Stephen T. Marston, "The Impact of Unemployment Insurance on Job Search," *Brookings Papers on Economic Activity*, 1975: 1.

Unemployment Insurance

are job losers. On the other hand, the uninsured **unemployed** have either quit, been fired for misconduct, are new entrants or reentrants to the labor force, have not earned sufficient wage credits, or worked in uncovered employment. Furthermore, even the job loser group studied is a special group of such workers, since many job losers never become unemployed at all. Thus, besides the adjustments made by **Marston** to compensate for the differing demographic characteristics of the two groups, it is extremely difficult, if not impossible, to disentangle behavioral differences due to being an insured worker from those due to being a job **loser**.¹⁸

Other difficulties also exist with Marston's study. Because of problems with the restrictive nature of available data, **Marston** was required to use extremely "complex and often arbitrary techniques [to] circumvent these **problems**."¹⁹ As a consequence, it is difficult to assess the accuracy of his results or to interpret their meaning. For example, by adjusting for factors allegedly omitted by **Marston**, Feldstein deduces from Marston's figures that UI, operating solely through extended duration, causes an increase of **0.69** percentage points in the overall unemployment **rate**.²⁰ Similarly, Hall notes that other findings of Marston's show that right after exhausting benefits, the rate of leaving unemployment rises rapidly. "Part of that increase clearly consists of people who leave the labor force, but part clearly consists of those who take jobs. If every insured **worker** were delaying his exit from unemployment to the same degree as,

¹⁸ See *Comments* by Robert C. Hall, pp. 51-52 and by Feldstein, pp. 52-58 in Marston, "The Impact . . .". Both give several reasons why job losers would be likely to suffer shorter periods of joblessness than other unemployed workers, irrespective of UI benefits. If this is true, then Marston's study underestimates the true insured-uninsured duration differential.

¹⁹ Kathleen Classen, p. 11, and Feldstein, *Comments*, pp. 54-56.

²⁰ Feldstein, *Comments*, pp. 54-55.

apparently, do those who have exhausted their benefits, unemployment insurance would be lengthening unemployment **substantially**."²¹ **Marston** does make the excellent point that in an economy with limited employment opportunities, shortening the unemployment duration of some workers by eliminating UI might well result in the displacement of other workers, thus reducing the aggregate effect on unemployment. Nevertheless, it appears that there are more fruitful approaches that can be taken to examine the duration issue.

One such approach is found in a study conducted by Kathleen **Classen** of the Public Research Institute of the Center for Naval Analyses. For her study, **Classen** had the advantage of a body of data which permits the examination within a single state of similar individuals who receive different benefit amounts. In Pennsylvania, benefits were significantly increased in **1968** only for those workers earning above a specified level. By examining a sample of claimants who filed the year before and the year after the change in the benefit schedule, **Classen** was able to estimate the effects of an increase in weekly benefit amount (**WBA**) on the duration of unemployment while avoiding many of the pitfalls inherent in other data sources.²²

Looking first at aggregate data, **Classen** found a significant rise in the duration of unemployment for that group of individuals entitled to a WBA increase (of \$15 from \$45 to \$65). On the other hand, those claimants entitled to only a very small benefit increase experienced an actual decline in unemployment duration. Studying the data through regression analysis confirmed these initial findings. Specifically, a \$10 increase in WBA resulted in a 1.1 week increase in the average

²¹ Hall, *Comments*, p. 50.

²² In an appendix to her Pennsylvania work, Classen examined similar data for Arizona and obtained strikingly similar results despite major differences between the UI systems of the two states.

unemployment duration of all claimants. Furthermore, when persons who were recalled by their former employers were excluded from the sample (on the grounds that their unemployment duration was largely determined by their employer and thus not a function of their **WBA**), the length of time by which duration was extended by a \$10 rise in **WBA** climbed to 1.6 weeks. If these relationships are applicable to the nation as a whole they would imply that a \$10 increase in **WBA** for all covered workers would have increased the unemployment rate for these workers by about 0.6 percentage points, a very large increase.²³

Other Research

Several researchers, including **Classen**, have examined the related question of whether increased **UI** benefits result in longer and more productive job search, and, thereby, in better worker-job matches. If this is the case, it might be argued that the benefits deriving to society from improved job matches would more than compensate for the increased duration of unemployment.²⁴ Four papers dealing with this issue were presented at the Symposium on the Economics of Unemployment Insurance, held at the University of Pittsburgh on April 8-9, 1976.²⁵ The basic question examined by these papers was whether there was a positive

²³ Including the **SUA** program (see Part II), over 90 per cent of the labor force is employed in or unemployed from covered industries. While there are some econometric problems with **Classen's** methodology, it appears that her findings are of the right order of magnitude.

²⁴ As noted on page 15, however, subsidization of job search can be justified only if the benefits to society from this increased search do not simultaneously accrue to the searcher who would otherwise be likely to search the optimum amount in the absence of subsidies.

²⁵ Kathleen **Classen**, "Effects . . ."; Jerry L. **Kingston** and Paul L. **Burgess**, "Unemployment Insurance and Earnings Changes From the Preunemployment to the Postunemployment Year"; Arlene **Holen**, "Effects of Unemployment Insurance Entitlement on Duration and Job Search Outcome"; and Ronald G. **Ehrenberg** and Ronald L. **Oaxaca**, "Unemployment Insurance, Duration of Unemployment, and Subsequent Wage Gain."

relationship between **UI** benefits and, presumably as a result of increased job search, post-unemployment wages. The results ranged from no (**Classen**), to strongly yes for older men (**Ehrenberg - Oaxaca**).

In an incisive commentary on these papers, however, Professor **Finis Welch** of **UCLA** showed that none of the studies really proved its case.²⁶ During the examination of data provided by the "real" world, econometric difficulties combine with institutional factors to enormously complicate the estimation procedure. For example, state benefit formulas determine a claimant's **WBA** as a direct function of his pre-unemployment wages. Thus, by trying to find a relationship between **WBA** and post-unemployment wages, one is actually estimating the relationship between pre- and post-unemployment wages. Not surprisingly, this relationship is strong and positive. This finding, however, reveals little about the relationship between **UI** benefits and job-search productivity. Furthermore, **Welch** noted, the fact that employers must initially pay (through higher taxes) for increased **UI** benefits could very well lower, over time, the entire schedule of wages employers are willing to offer. Since both pre- and post-unemployment wages could be lowered by increasing **UI** benefits (though not necessarily to the same degree), a theoretical case can be made for either a positive or a negative relationship between **UI** benefits and post-unemployment wages. Whatever the results, however, they would yield no clear information on the productivity of job search. It appears, therefore, that much more work must be done before a definite relationship between **UI** benefits and productive job search can be determined.

In addition to the above questions, many other important **UI** issues have yet to be examined in depth. **Frank Brechling** has

²⁶ **Finis Welch**. "What Have We Learned From Empirical Studies of Unemployment Insurance?". unpublished paper presented at the Symposium.

Unemployment Insurance

conducted an extensive theoretical study designed to discover the incentive effects on individual firms of the unemployment insurance tax as it currently operates in most states.²⁷ Brechling theorizes, for example, that the structure of the current experience rating system of UI taxation affects the hiring and layoff policies of firms in a complicated manner with potentially strong policy implications. The actual magnitude of these effects, however, remains to be estimated.

A related issue is that of determining who ultimately pays the tax cost of financing unemployment insurance. While employers initially pay the UI payroll tax, it is unlikely that they absorb all of the cost. Some of it is certainly passed on to consumers in the form of higher prices. In addition, much of it may be indirectly paid by labor in the form of lower wage offers made by employers, substitution of capital for labor in some processes, and the reluctance of employers to hire from groups with a history of high turnover.²⁸ Furthermore, because some industries have very high turnover while others have very stable employment, there is an implicit cross-subsidization among industries and a potential distortion in the use of the nation's resources. The issues involved in these and other questions are very complicated, however, and much more theoretical and empirical work must be done before the magnitude of the effects can be estimated and the related policy implications assessed.

SUMMARY AND CONCLUSIONS

In this final article of a three-part series on unemployment insurance, some of the

²⁷ Frank Brechling, "The Incentive Effects of the U.S. Unemployment Insurance Tax," PRI 173-75, June 1975, and "Unemployment Insurance Taxes and Labor Turnover: Summary of Theoretical Findings," PRI 75-5, December 1975, Public Research Institute.

²⁸ For a preliminary theoretical study of this issue, see Charles E. McLure, Jr., "The Incidence of the Financing of Unemployment Insurance," unpublished paper. Department of Economics, Rice University.

important issues regarding the unintended effects of the UI system have been examined. Ever since the inception of the system, economists have been concerned that the payment of UI benefits might result in a reduction of work effort or in an increase in unemployment duration. This possibility was recently highlighted by Martin Feldstein of Harvard University.

In his controversial 1972 congressional testimony, Feldstein illustrated how UI benefits replace most of the after-tax income that is lost from being unemployed. Feldstein also noted that because the system permits workers to receive benefits in excess of the cost to their former employers, an excessive amount of seasonal, cyclical, and temporary employment is encouraged. Much of the research done since then has attempted to either support or contradict Feldstein's findings and methodology.

Of the issues involved in the UI controversy, the one receiving the closest scrutiny has been the effect of UI on the duration of unemployment. While Feldstein suggested the potential for such an effect, he never accurately estimated its magnitude. Recent research, especially that studying the marginal effect on duration of increasing benefits, seems to indicate that UI benefits are responsible for a sizable increase in the duration of unemployment of the insured unemployed.

On the question of whether this extended unemployment duration is spent in productive job search (yielding higher post-unemployment wages), the results are unclear. A theoretical case can be made for expecting either a positive or a negative relationship between unemployment benefits and post-unemployment wages. Furthermore, the very formulas by which UI benefit levels are determined (i.e., based on pre-unemployment wages) may make the empirical estimation of this relationship impossible using available data. Clearly, new experiments will have to be developed to deal with this issue.

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