Chapter Title: Trends in United States International Trade and Investment since World War II

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3

Trends in United States International Trade and Investment since World War II

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3.1 Introduction and Summary

At the end of World War II the United States was by far the dominant industrial economy in the world. With industrial capacity largely destroyed in Europe and Japan, the United States produced more than 60 percent of the world's output of manufactures in the late 1940s. As a result, the United States was a net exporter of manufactured goods of all kinds; historically the United States was a net importer of consumer goods, but in 1947 there was a net export surplus of $1 billion in that category. Thus in the immediate postwar years, the pattern of United States trade was distorted by a relative strength in manufacturing that was transitory. The recovery of the European and Japanese economies in the 1950s and 1960s, and the growth of manufacturing capacity in the developing countries in the 1960s and 1970s inevitably reduced the United States share of world output and of world exports. The evolution of United States trade patterns since World War II has been strongly

influenced by these initial postwar conditions. By the 1970s, trade patterns reflecting underlying comparative advantage had been restored, and the United States was once again an importer of consumer goods.

The United States international investment position just after World War II was miniscule. In 1950, its private long-term assets abroad totaled $17.5 billion; foreign investment in the United States was $8 billion. Thus while the United States was very open to trade at that point, there was little international ownership of assets. The United States long-term foreign asset and liability positions have both grown steadily at about 10 percent per year since 1950. This has resulted in an internationalization of investment over the same period in which the United States lost its dominant position in trade.

This paper presents and analyzes the data on the trends in United States international trade and investment since World War II. From this data we can perceive a shrinking United States fraction of manufacturing output and exports, a return to and strengthening of lines of comparative advantage, and balanced and rapid growth in long-term investment. We can also see increasing volatility of trade and long-term investment in the 1970s, along with a real depreciation of 25 percent in the weighted United States exchange rate.

Section 3.2 sets the framework for this analysis by studying trends in the United States position in the world economy since 1950. The United States trend real growth rate has been the lowest in the industrial world, while the European and Japanese economies recovered. Its share of manufacturing output shrank from 1950 to the 1970s, while its share of manufactured exports stabilized at about 13 percent since 1970. United States costs have risen at a rate that is about average for the industrial countries, and the dollar devaluation of the 1970s has resulted in a significant real depreciation.

Section 3.3 studies the trends in United States trade and comparative advantage since World War II against the background of data going back to 1925. The postwar export bulge was eliminated by the mid-1950s, and a stable pattern of trade emerged. It shows export surpluses in capital goods, chemicals, and agriculture and deficits in consumer goods and nonagricultural industrial inputs. Trade in automotive products switched from surplus to deficit in 1968, and of course energy imports soared in the 1970s. At the four-digit end-use code level one can also discern patterns of trade that are consistent with the internationalization of investment and production.

Trends in long-term investment position are summarized in section 3.4. It shows a picture of remarkably steady and balanced growth, with international assets and liabilities both growing at 10 percent or so a year. The data on direct investment are disaggregated by country and industry. United States investment abroad has been increasingly directed toward Europe, whose share of total United States direct investment rose

from 15 percent in 1950 to over 40 percent in 1977. To a large extent, direct investment has gone to the industrial economies, rather than to the developing countries. Foreign investment in the United States has been mainly European throughout, with a share of 66 percent in the 1950s and the 1970s.

Developments in the balance of payments, reserves, and exchange rates are discussed in section 3.5, which shows a trend from surplus to deficit in the United States basic balance (current account plus long-term capital), and a marked increase in the volatility of the basic balance (as measured by time series variance) from the 1960s to the 1970s. This increase in volatility has raised significantly the size of variation in reserves that would be needed to fix exchange rates. The result has been *more* movement in reserves with "floating" rates in the 1970s than with "fixed" rates in the 1960s.

It is difficult to summarize briefly the impression created by this intensive review of the data, but perhaps it is worth a try. At the end of World War II the United States dominated an industrial world that was tied together economically mainly by trade. This was clearly a temporary position, at least in hindsight. Gradually, over thirty-five years, the other industrial countries have caught up with the United States, restoring a kind of economic balance to the world picture. At the same time, international investment has thickened the connections of the United States to the world economy. My impression is that the United States has moved from a position of dominance to being one of several roughly equal centers, with increasingly tight economic interconnections among them.

3.2   Broad Trends in the United States Position in the World Economy

At the end of World War II, the United States was the dominant industrial producer in the world. With industrial capacity destroyed in Europe—except for Scandinavia—and in Japan and crippled in the United Kingdom, the United States produced approximately 60 percent of the world output of manufactures in 1950, and its GNP was 61 percent of the total of the present (1979) OECD countries. This was obviously a transitory situation. During the 1950s the European economies recovered and rebuilt capacity, competing with the United States in world markets. Japan entered the competition in a major way in the 1960s, and in the 1970s several developing countries became significant in terms of aggregate world output and trade in manufactures.

Thus during the thirty-five years since World War II, Europe, Japan and then the less developed countries (LDCs) have grown faster than the United States in terms of real GDP and industrial output, both aggregate and per capita. This has resulted in a shrinking United States

share of world output and exports and a closing of productivity differentials.

As its competitors' capacity grew faster than that of the United States, real depreciation of the dollar was required to keep trade and current account balances in line. This depreciation was delayed by monetary arrangements under the Bretton Woods agreements, which resisted change in the dollar exchange rate. Thus instead of a gradual real *depreciation*, a small real *appreciation* appeared in the late 1960s, contributing to a growing trade imbalance. Once the Bretton Woods system broke down, a significant real depreciation of the dollar occurred during the 1970s, helping to restore balance in trade among the industrial countries.

By 1980, the United States will have moved from a position of dominance to a position of equality or symmetry among groups of industrial countries. Its share of OECD real GNP is now (1979) 39 percent, and its share of world industrial production is about 35 percent, compared with 40 percent as late as 1963. Its share of world exports of manufactures has fallen from 29 percent in 1953 to 17 percent in 1963 and 13 percent in 1976. The weighted real exchange rate of the United States (in index terms, 1975 $=$ 100) has depreciated from around 83 in 1961 to 106 in 1978. The United States economy is now part of a world of nearly symmetric interdependence.

Data are presented below that describe and summarize the change in the United States position in the world economy since World War II, examining first comparative trends in production, then competitiveness and trade, and finally exchange rates. These data set the framework for subsequent analysis of trends in United States international transactions.

3.2.1   Measures of Trends in Output

Real GDP

United States real GDP has grown more slowly along trend than that of the other major industrial countries since World War II. Table 3.1 shows index numbers for real GDP for seven major countries: the United States, Canada, Japan, France, West Germany, Italy, and the United Kingdom. The data are indexed to 1967 $=$ 100. Among these countries, only the United Kingdom had a slower growth rate to 1967 (27 percent per year versus 3.5 percent for the United States). This is also true of the period since 1967, during which the United States growth rate has been 2.3 percent per year.

Real GDP per Capita and per Worker

More interesting than aggregate real GDP data are real GDP per capita and per worker. These summarize both income per capita and productivity trends in terms of domestic prices and over the entire economy.

Table 3.2 shows index numbers for GDP per capita in the same set

Table 3.1   **Index of Real Gross Domestic Product, Own Country Price Weights, 1967 = 100**

Year	United States	Canada	Japan	France	Germany	Italy	United Kingdom
1950	53.0	43.6	21.3	44.0	33.6	39.4	62.0
1955	65.1	56.3	33.0	53.8	52.7	52.6	72.2
1960	73.2	68.5	49.7	68.6	76.7	68.8	81.5
1965	91.8	90.3	80.2	90.8	97.7	88.3	95.4
1966	97.4	96.7	88.9	95.5	100.2	93.4	97.5
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968	104.4	105.6	114.1	104.3	106.3	106.3	103.6
1969	107.1	111.1	128.0	111.5	114.6	112.3	105.3
1970	106.8	114.0	142.8	117.9	121.5	118.0	107.7
1971	109.8	121.9	150.2	124.3	125.4	119.8	110.4
1972	116.2	129.0	164.3	131.7	130.0	123.6	112.7
1973	122.5	138.8	180.6	138.7	136.3	132.1	121.8
1974	120.9	143.7	180.0	143.2	137.1	137.8	119.8
1975	119.5	145.5	182.5	143.7	134.4	133.0	117.8
1976	126.4	153.9	194.1	150.3	141.1	140.5	121.9
1977	133.0	158.3	204.2	154.9	144.9	143.4	123.6
1978	138.4	163.8	216.0	159.6	149.4	146.9	127.9

Source: Department of Labor.

Table 3.2   **Index of Gross Domestic Product per Capita, 1967 = 100**

Year	United States	Canada	Japan	France	Germany	Italy	United Kingdom
1950	69.5	64.9	25.7	52.1	42.4	44.4	67.4
1955	78.3	73.2	37.1	61.3	63.5	56.9	77.6
1960	80.5	76.0	53.3	74.4	82.1	72.2	85.0
1965	93.9	93.7	81.8	92.3	98.8	89.5	96.4
1966	98.4	98.4	89.9	96.3	100.4	94.0	98.0
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968	103.3	104.0	112.7	103.5	105.9	105.7	103.1
1969	105.0	107.8	125.0	109.8	113.1	111.0	104.4
1970	103.6	109.1	138.1	115.1	118.7	115.8	106.5
1971	105.4	115.3	142.1	120.2	121.3	116.8	108.8
1972	110.6	120.7	153.2	126.2	124.9	110.6	110.7
1973	115.7	128.3	166.1	131.9	130.4	126.7	119.4
1974	113.3	131.0	163.4	135.3	130.9	130.9	117.4
1975	111.2	130.6	163.6	135.1	128.8	125.5	115.4
1976	116.7	136.4	172.1	140.8	135.9	131.8	119.6
1977	121.9	138.8	179.3	144.6	140.0	133.8	121.3
1978	126.2	142.3	187.9	148.4	144.5	136.5	125.6

Source: Department of Labor.

Table 3.3   **Average Annual Growth Rate of Real GDP per Capita (in Percentages)**

Country	1950–55	1955–60	1960–65	1965–70	1970–75	1975–78
United States	2.38	0.55	3.08	1.97	1.42	4.22
Canada	2.41	1.27	3.67	3.04	3.60	2.86
Japan	7.34	7.25	8.57	10.47	3.39	4.62
France	3.25	3.87	4.31	4.42	3.20	3.13
Germany	8.08	5.14	3.70	3.67	1.63	3.83
Italy	4.96	4.76	4.30	5.15	1.61	2.80
United Kingdom	2.82	1.82	2.52	1.99	1.61	2.82

of industrial countries, and table 3.3 gives the five-year average growth rates. In terms of per capita GDP, the United States growth rate is slightly lower than that of the United Kingdom, and much lower than those of the other major countries. The growth rate summary in table 3.3 shows a general deceleration of growth in the industrial world, throughout the period 1950–78, with the United States growth rate consistently slower than the others.

Tables 3.4 and 3.5 show index numbers and the growth rate summary for real GDP per employed worker, coming closer to a home currency

Table 3.4   **Index of Real GDP per Employed Person, Own Country Price Weights, 1967 = 100**

Year	United States	Canada	Japan	France	Germany (2)	Italy	United Kingdom
1950	68.2	65.8	29.4	45.9	44.3	41.6	68.1
1955	77.7	78.0	40.5	56.0	60.9	53.3	75.8
1960	83.4	85.4	55.2	71.0	76.4	65.1	84.0
1965	96.8	98.4	83.6	91.9	94.4	87.6	94.4
1966	99.7	99.4	90.8	95.9	100.9	94.5	96.2
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968	102.2	103.8	112.0	103.4	106.2	106.6	104.2
1969	102.4	105.9	124.4	109.0	112.9	113.8	105.9
1970	101.6	107.6	137.2	114.3	118.2	119.3	109.0
1971	104.3	112.4	143.4	119.7	121.7	121.4	113.8
1972	107.4	115.5	156.4	125.8	126.5	127.6	115.5
1973	109.9	118.1	167.7	130.8	132.4	135.3	122.2
1974	106.7	117.2	167.8	134.0	135.6	138.4	120.1
1975	107.0	117.5	170.6	136.9	137.4	132.9	118.9
1976	109.7	121.7	179.8	142.4	145.8	139.5	122.8
1977	111.7	123.0	186.7	145.8	150.1	141.6	124.2
1978	112.0	123.2	195.1	150.0	154.8	144.4	128.1

Source: Department of Labor.

Table 3.5   **Average Annual Growth Rate of Real GDP per Employed Worker (in Percentages)**

Country	1950–55	1955–60	1960–65	1965–70	1970–75	1975–78
United States	2.61	1.42	2.98	0.97	1.04	1.52
Canada	3.40	1.81	2.83	1.79	1.76	1.58
Japan	6.41	6.19	8.30	9.91	4.36	4.47
France	3.98	4.75	5.16	4.36	3.61	3.05
Germany	6.36	4.53	4.23	4.50	3.01	3.97
Italy	4.96	4.00	5.94	6.18	2.16	2.77
United Kingdom	2.14	2.05	2.33	2.88	1.74	2.48

productivity measure. The United States growth rate in these terms is relatively slower than in terms of GDP per capita. Over the entire period 1950–78, the United States growth rate was 1.7 percent per year; the next slowest was the United Kingdom with 2.2 percent.

Manufacturing Output per Hour

More precise estimates of trends in productivity are given in tables 3.6 and 3.7, for output per hour in manufacturing. Since manufactures are an important component of tradable goods, this brings us closer to fundamental movements in relative competitiveness, as well. In table 3.6 we can see that the United States and United Kingdom trends in manufacturing productivity have been about the same over the entire period; the United States growth rate for 1950–78 is 2.4 percent per year, while that for the United Kingdom is 2.5 percent. Both are well below the trends in the other countries. Table 3.7 shows the general deceleration in productivity growth; the United States is consistently low.

Tables 3.1 through 3.7 document the fact that the United States growth in output and productivity in manufacturing since 1950 has been slower than that of the other major industrial countries. This is the case even before adjustment for the major movements in exchange rates and the terms of trade in the 1970s. This phenomenon has permitted the other industrial countries to converge toward the United States level of productivity as of the late 1970s. The data imply a decline in the United States share of world output as the others catch up in productivity terms.

Shares of World Manufacturing Output

Calculation of shares of world manufacturing output is difficult because we have no firm data on the world aggregate. Thus any share calculation gives the share of a given country in total output of a group of industrial countries known to produce perhaps 90 percent of the world total. Share calculations have become even more difficult in the 1970s with the growth of manufacturing in the newly industrializing

Table 3.6   **Index of Output per Hour in Manufacturing, 1950–78, 1967 = 100**

Year	United States	Canada	Japan	France	Germany	Italy	United Kingdom
1950	65.0	51.6	21.5	43.9	37.3	35.0	62.5
1951	67.1	53.7	26.8	46.2	38.5	39.0	62.6
1952	68.3	55.2	28.2	47.7	42.1	40.6	60.0
1953	69.5	57.1	32.1	50.2	45.1	42.6	62.9
1954	70.6	59.6	34.3	51.6	47.0	44.9	64.9
1955	74.1	63.4	36.0	54.2	50.0	48.8	66.9
1956	73.5	66.1	38.4	57.7	51.3	51.5	67.0
1957	75.1	66.5	41.9	58.6	55.8	52.5	68.6
1958	74.7	68.8	39.2	60.9	58.6	53.4	69.8
1959	78.0	72.5	45.6	65.3	63.3	57.5	72.7
1960	78.9	75.1	52.6	68.7	67.8	61.2	77.0
1961	80.8	79.2	59.3	71.9	71.4	66.1	77.7
1962	84.5	83.3	61.9	75.2	75.8	73.2	79.6
1963	90.5	86.5	67.1	79.7	79.3	75.2	83.9
1964	95.2	90.3	75.9	83.7	85.2	79.6	89.8
1965	98.3	93.7	79.1	88.5	90.7	88.5	92.5
1966	99.7	96.9	87.1	94.7	93.9	94.4	95.8
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968	103.6	106.8	112.6	111.4	106.9	107.9	107.3
1969	104.8	113.1	130.0	115.4	113.4	116.1	108.6
1970	104.5	114.7	146.5	121.2	116.1	121.7	108.8
1971	110.1	122.9	151.0	127.6	121.4	125.2	113.2
1972	115.7	128.5	162.3	135.1	128.7	135.3	121.5
1973	118.8	134.3	181.2	142.5	136.6	151.7	127.6
1974	112.6	136.6	181.7	146.6	145.0	159.7	127.7
1975	118.2	133.3	174.6	150.7	151.3	152.9	124.2
1976	123.4	139.4	188.7	163.6	160.3	165.9	127.9
1977	127.5	146.1	199.2	171.7	169.0	167.8	126.5
1978	128.9	152.2	215.7	180.2	175.3	172.7	128.6

Source: Department of Labor.

countries (NICs) among the LDCs. Therefore I show here two sets of share data. The first is across an aggregate of ten major industrial countries since 1950; the second is across an OECD estimate of world output since 1963.

Shares of total manufacturing output across ten major OECD countries since 1950 are shown in table 3.8. Share data can be computed from underlying data supplied by the U.S. Department of Labor by one of two ways. The first is to use real output data by country, converted to a common valuation using a fixed nominal exchange rate. This is the method used for table 3.8, using 1967 exchange rates. The implicit PPP

Table 3.7   **Average Annual Growth Rate of Output per Hour in Manufacturing**

Country	1950–55	1955–60	1960–65	1965–70	1970–75	1975–78
United States	2.62	1.26	4.40	1.22	2.46	2.89
Canada	4.12	3.39	4.43	4.04	3.01	4.42
Japan	10.31	7.58	8.16	12.33	3.51	7.05
France	4.21	4.74	5.06	6.29	4.36	5.96
Germany	5.86	6.09	5.82	4.94	5.30	4.91
Italy	6.65	4.53	7.38	6.37	4.56	4.06
United Kingdom	1.36	2.81	3.67	3.25	2.65	1.16

assumption in this calculation is that nominal exchange rate movements, at least along trend, have followed relative price movements. The second way to perform the calculation would be to use nominal output data and convert them at current exchange rates. If the PPP assumption were correct, the two calculations would be the same. But if the assumption is incorrect, the nominal cum current rate calculation will distort the share data. 1950–78, the United States growth rate was 1.7 percent per year; the

In table 3.8 we see that the United States share of major industrial countries' total manufacturing output has indeed been shrinking—from 62 percent in 1950 to 44 percent in 1977. The countries gaining shares within the table 3.8 subset were certain European countries in the 1950s and 1960s, and Japan in the period since 1955.

The share data of table 3.8 omit manufacturing output in the developing countries, including the Southern European OECD. However, a

Table 3.8   **Shares of Total Manufacturing Output in Ten Industrial Countries, 1950–77**

Countries	Percentage Share of Total						
	1950	1955	1960	1965	1970	1975	1977
United States	61.9	58.1	50.5	50.1	43.6	42.5	44.0
Canada	3.5	3.4	3.3	3.5	3.4	3.7	3.6
Japan	2.1	3.5	6.3	8.0	13.1	13.2	13.4
Denmark	0.7	0.5	0.6	0.6	0.7	0.7	0.7
France	7.6	7.1	8.1	8.1	8.9	9.8	9.6
Germany	10.1	14.1	17.2	16.7	17.2	16.5	16.0
Italy	2.2	2.5	3.1	3.1	3.7	4.3	4.3
Netherlands	1.8	1.9	2.2	2.1	2.3	2.3	2.2
Sweden	2.0	1.7	1.9	1.9	1.9	2.0	1.6
United Kingdom	8.2	7.2	6.9	5.9	5.3	4.9	4.5

Source: Department of Labor.

major development of the 1970s has been growth of output in the NICs. This has brought them into competition with the industrialized countries in markets for manufacturing, raising fears of a "new protectionism." Table 3.9 provides estimates of the distribution of world output of manufactures since 1963, including the LDCs.

In the first row of table 3.9 the United States share of world output falls from 40 percent in 1963 to 37 percent in 1970 and 35 percent in 1975–76. The rise in 1977 is probably due to the United States recovery that was not matched by European growth. The 1980–81 slowdown

Table 3.9   Geographical Distribution of World Industrial Production Percentages and Index Numbers

	1963	1970	1973	1974	1975	1976	1977
Major Industrial Countries							
United States	40.25	36.90	36.59	36.30	34.97	35.42	36.90
Japan	5.48	9.28	9.74	9.28	8.88	9.06	9.14
Germany	9.69	9.84	9.19	8.95	8.98	8.97	8.85
France	6.30	6.30	6.25	6.35	6.25	6.25	6.15
United Kingdom	6.46	5.26	4.78	4.61	4.67	4.29	4.16
Italy	3.44	3.49	3.29	3.43	3.28	3.41	3.33
Canada	3.01	3.01	3.08	3.16	3.17	3.08	3.08
Newly Industrializing Countries							
Spain	0.88	1.18	1.37	1.48	1.47	1.43	1.56
Portugal	0.23	0.27	0.30	0.31	0.31	0.30	0.32
Greece	0.19	0.25	0.30	0.30	0.33	0.33	0.33
Yugoslavia	1.14	1.25	1.31	1.43	1.60	1.53	1.62
Brazil	1.57	1.73	2.10	2.25	2.47	2.49	—
Mexico	1.04	1.27	1.30	1.38	1.54	1.44	1.45
Hong Kong	0.08	0.15	0.18	0.17	0.17	0.21	—
Korea	0.11	0.22	0.32	0.41	0.51	0.63	0.69
Taiwan	0.11	0.23	0.34	0.33	0.37	0.42	0.46
Singapore	0.05	0.06	0.08	0.08	0.09	0.09	0.10
Total "Gang of 4"	0.35	0.66	0.92	0.99	1.14	1.35	—
Total NICs	5.40	6.61	7.60	8.14	8.86	8.87	(9.28)
Other developed countries[a]	10.99	9.72	9.83	9.73	10.58	9.90	9.29
Other developing countries	8.98	9.59	9.65	10.05	10.36	10.75	9.30
India	1.21	1.11	1.03	1.04	1.15	1.17	1.19
Argentina	0.94	1.07	1.09	1.14	1.18	1.06	1.06
World	100.0	100.0	100.0	100.0	100.0	100.0	100.0
World (1970 = 100)	66.0	100.0	121.0	122.0	115.0	125.0	129.0

Sources: The Growth of World Industry, and *Monthly Bulletin of Statistics*, United Nations; IMF Statistics; Secretariat estimates.

Notes: The Eastern bloc is excluded from all World calculations. Figures for 1970 represent value added; those for other years are based on industrial production indexes.

[a] All other OECD countries plus South Africa and Israel.

will restore the United States share relationship. Most of the other developed countries in the top tier of table 3.9 have also had shrinking shares in the 1970s. In this decade the gainers have been the NICs, shown in the middle tier in the table. On aggregate, their share has risen from 5.4 percent in 1963 to 6.6 percent in 1970 and about 9 percent in 1975–77. Thus in terms of share of world output in manufacturing, those of the ten NICs have nearly doubled from 1963–77.

An interesting subset of the NICs is the Gang of Four: Hong Kong, Korea, Taiwan, Singapore. Their share of world manufactures output has risen from 0.4 in 1963 to 0.7 in 1970 and 1.4 in 1976, a tripling in fifteen years. Thus the major gainers during the 1970s have been the industrializing LDCs collectively, with the United States share shrinking from 37 percent to 35 percent of the estimated world total.

3.2.2   Trends in Competitiveness

With manufacturing capacity and output growing relatively rapidly in Europe, Japan, and the LDCs, a significant improvement in United States competitiveness would have been required to hold the United States share of world markets. During the period 1950–70, in general, United States costs relative to those of its competitors, adjusted for exchange rate changes, did not decline. The result was a shrinking United States share of world trade in manufactures. After 1970, the depreciation of the United States dollar led to an improvement in United States competitiveness of about 40 percent (1970–78), and the United States share of world manufactures exports stabilized at about 13 percent.

Index numbers for unit labor costs in manufacturing, adjusted for exchange rate changes, are shown in table 3.10 for seven major industrial countries. Their growth rates are summarized in table 3.11. During the period 1950–70 the increase in unit labor cost in the United States was in the middle of the league. Over that twenty-year period the average annual growth rate of unit labor cost in the United States was 2.6 percent, the same as Italy, faster than Canada, Japan, and France, and slower than Germany and the United Kingdom. In table 3.10 it is clear that the growth rate of unit labor cost in Germany is exaggerated by the choice of 1970 as the terminal year; the 1950–69 growth rate is 2.8 percent, almost the same as that of the United States. Thus during the Bretton Woods period, while the rest of the world expanded capacity relative to the United States, unit labor cost in the United States rose at about the same rate as did that of its competitors.

This flat relative trend is confirmed in the IMF-weighted competitiveness indexes. Table 3.12 shows the ratio of the United States unit labor cost to a trade-weighted average of fourteen competitors' unit labor costs, adjusted for exchange rate changes. This is an index of cyclically adjusted relative "normal" unit labor cost, computed by the IMF. Fol-

Table 3.10   Indexes of Unit Labor Costs in Manufacturing, United States
                    Dollar Basis, 1950–78, 1967 = 100

Year	United States	Canada	Japan	France	Germany	Italy	United Kingdom
1950	69.4	75.2	83.2	69.1	61.1	70.6	54.7
1951	73.9	84.9	85.0	84.2	68.3	69.4	59.3
1952	77.3	97.6	93.3	94.3	66.7	71.9	67.7
1953	80.2	98.6	86.0	92.3	65.3	73.6	68.3
1954	82.5	100.8	88.1	94.8	64.7	72.7	69.9
1955	81.6	96.4	87.9	97.2	64.8	72.3	72.3
1956	87.5	97.7	85.9	98.4	68.3	73.9	78.6
1957	90.8	106.3	82.7	86.9	70.2	75.2	81.4
1958	95.4	106.8	90.1	81.5	72.7	77.8	85.7
1959	94.8	106.5	86.1	79.3	73.2	75.2	84.9
1960	97.7	106.9	82.5	81.5	76.5	76.5	85.5
1961	98.3	99.7	84.7	85.8	84.7	78.3	91.1
1962	97.7	92.4	92.8	90.3	90.7	83.4	93.7
1963	94.2	91.4	95.6	94.2	92.8	96.1	92.8
1964	93.4	90.9	94.8	96.4	93.3	101.0	92.7
1965	92.6	92.0	102.5	98.2	94.4	97.1	98.6
1966	95.4	96.0	102.5	97.7	100.4	95.1	103.0
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968	103.3	100.6	103.8	101.2	99.1	99.0	86.9
1969	108.7	102.1	107.2	96.7	103.5	104.3	92.6
1970	116.5	111.7	113.2	96.7	125.7	119.2	104.8
1971	117.6	116.1	130.7	102.9	142.8	135.6	117.4
1972	118.1	122.0	159.7	118.4	164.3	152.2	125.7
1973	123.2	127.0	195.2	146.3	211.7	172.5	130.2
1974	143.1	147.7	237.3	157.7	236.2	182.6	154.7
1975	152.4	166.6	284.8	206.2	268.5	245.1	196.2
1976	158.2	187.4	285.3	195.1	265.4	212.5	182.9
1977	166.6	183.7	326.5	207.5	299.4	234.9	196.9
1978	179.4	175.8	412.0	243.9	358.3	270.4	249.0

Source: Department of Labor.

Table 3.11   Average Annual Growth Rate of Unit Labor Cost in United
                    States Dollars (in Percentages)

Country	1950–55	1955–60	1960–65	1965–70	1970–75	1975–78
United States	3.2	3.6	−1.1	4.6	5.3	5.4
Canada	5.0	2.1	−3.0	3.9	8.0	1.8
Japan	1.1	−1.3	4.3	2.0	18.5	12.3
France	6.8	−3.5	3.7	−0.3	15.1	5.6
Germany	1.2	3.3	4.2	5.7	15.2	9.6
Italy	0.5	1.1	4.8	4.1	14.4	3.3
United Kingdom	5.6	3.4	2.9	1.2	12.5	7.9

Table 3.12   **Index of United States Weighted Relative Unit Labor Cost, 1975 = 100**

Year	Relative Cost Index	Year	Relative Cost Index
1961	152.6	1970	144.8
1962	151.8	1971	137.0
1963	151.0	1972	123.9
1964	151.2	1973	110.1
1965	148.1	1974	105.8
1966	147.5	1975	100.0
1967	148.1	1976	105.1
1968	151.4	1977	104.2
1969	151.2	1978	96.5

Source: International Monetary Fund.

lowing the table, the United States showed a small improvement in the mid-1960s, which was eliminated by 1969, when the index stood at 151.2 compared with 152.6 in 1961. Then the depreciation of the dollar beginning with the German float of 1969 brought relative unit labor cost down to 100 by 1975 and 96.5 by 1978.

3.2.3   Shares of World Trade in Manufactures

With competitors' capacity growing and no significant improvement in unit labor cost, over the period since 1950 the United States has lost 55 percent of its share of the world market for manufactures. In 1953, 29 percent of global manufactured exports were from the United States: by 1976 its share had shrunk to 13 percent. This reduction is striking enough to warrant detailed attention here.[1] To set the framework for the detailed look at United States trade in section 3.3, I will describe in some detail trends in world manufacturing trade, with particular emphasis on the relative market shares of major competitors during the 1953 to 1976 period. The description is divided into two parts. The first is an examination of changes in trade shares of total manufactures over three periods: 1953–59, 1959–71, and 1971–76. The second focuses on trends in three basic manufacturing categories: chemicals, machinery and transport equipment, and other manufactures.

Total Manufactures

Movements in the distribution of world exports of total manufactures for the period 1953–59 are shown in table 3.13. There we see that the United States share fell from 29.2 percent in 1953 to 13.2 percent in 1976. The share has been relatively constant at 13.2–13.4 percent throughout the 1970s.

Table 3.13 Distribution of Exports of Manufactures (SITC 5–8)

Country	1953	1956	1959	1962	1965	1968	1971	1974	1976
Total ($ millions)	37,738	51,721	61,400	79,330	109,730	150,070	226,670	483,070	585,260
					Percentage of Total				
Developed[1]	88.0	83.5	82.1	81.6	82.0	83.1	83.9	83.7	83.1
LDCs[2]	7.0	6.6	5.3	5.3	5.8	5.8	5.5	7.8	8.0
CPEs[3]	5.0	9.9	12.6	13.1	12.1	11.0	10.4	8.4	8.9
Developed									
Western Europe	49.0	50.1	53.7	54.4	54.7	53.0	54.7	54.9	54.0
EEC	—	—	31.9	33.5	34.4	34.4	35.8	*44.9	44.0
EFTA	—	—	20.3	19.2	18.4	17.2	17.2	* 8.2	8.0
Germany	9.7	12.2	15.6	14.8	15.4	14.8	15.4	16.3	15.5
United States	29.4	23.0	18.7	17.6	15.8	15.8	13.4	13.2	13.2
Canada	5.0	4.3	3.9	3.5	3.7	4.9	4.6	3.4	3.5
Japan	2.8	4.2	4.9	5.5	7.1	8.1	10.0	10.9	10.9
Other	1.9	2.0	1.2	0.6	0.8	1.4	1.3	1.4	1.5
LDC									
Africa[4]	1.6	1.4	1.3	1.2	1.3	1.3	0.9	0.9	0.6
Latin America	1.6	1.6	1.2	1.1	1.2	1.6	1.4	1.9	1.6
Middle East	0.3	0.4	0.4	0.3	0.4	0.2	0.2	0.5	0.4
Asia[5]	3.5	3.2	2.4	2.6	2.8	2.7	2.9	4.5	5.4
NIC[6]	0.9	0.9	0.8	0.9	1.2	1.5	1.8	2.4	3.0

*Reflects admission of the United Kingdom, Ireland, and Denmark to the EEC and their departure from the EFTA.
[1]Developed market economies: United States, Canada, Japan, Western Europe, Australia, New Zealand, and South Africa.
[2]All countries excluding developed countries and CPEs.
[3]Eastern Europe, USSR, People's Republic of China, Mongolia, North Korea, North Vietnam.
[4]Excludes South Africa and Rhodesia.
[5]Excludes developed countries and CPEs.
[6]Republic of Korea, Hong Kong, Singapore (data for Taiwan were not available for the entire period).

1953–59. Two-thirds of the decrease in United States market share since 1950 occurred between 1953 and 1959. The U.S. share decreased by 8.7 percent (36 percent of the 1953 share) during this period. Canada and the LDCs together lost 2.8 percent (23 percent of their 1953 share). Most of the gain went to the centrally planned economies (CPEs), Germany and Japan.

Most of the CPEs' increase was due to the rapid postwar expansion of their own market, i.e., most of the increase was in trade among the CPEs. Although Germany's growth can be attributed to rapid growth of the West European economies, it should be noted that the rest of Western Europe's market share *declined* during the period, while Germany's increased by almost 6 percent (60 percent of the 1953 share). Clearly Germany was increasing its position in the European market and capturing a larger share of non-European markets. Japan's share increased by 2.1 percent (75 percent of the 1953 share), beginning a trend which continued until 1974. Three of the LDC regions lost market shares while the Middle East's remained unchanged.

Table 3.14 displays the growth rates of real exports for 1953–76. The deflator used is the export price index for all manufactures. Therefore, the deflated values include changes in the relative price of a region's manufactures as well as volume growth. During the 1953–59 period United States export growth was nil, and the LDCs and Canada also had very slow growth.

1959–71. During the 1960s the U.S. lost market shares at a slower pace. Germany and the CPEs stopped penetrating markets as the lead passed to Japan and the other members of the Common Market. Japan doubled its share from 5 percent to 10 percent of the world market. The non-German EEC countries gained 4 percent of the market. Canada's growth was due entirely to the rapid increase in machinery and transport equipment during 1965–71. Examination of bilateral flows reveals that this was due mainly to the effects of the 1965 Auto Agreement between Canada and the United States.

An interesting pattern developed among the LDCs during this period. Overall they gained only 0.2 percent of the world market. The Middle East and Africa lost; Latin America gained slightly; non-NIC Asia lost; but the NICs more than doubled their market share.

1971–76. During the final five years the United States share remained constant at 13.2 percent. The shares of Japan and Germany changed only slightly. The most dramatic movement was the increase in Asian and NIC shares. All of the growth in the LDCs' share was captured by Asian countries (2.5 percent increase in market share), and half of that is concentrated in the three NICs. The growth of Asian exports appears to have been at the expense of the CPEs, Canada, and Africa. Had the

Table 3.14 Average Annual Growth Rates (in Percentages) of Manufactured Exports, Constant (1970) World Prices

Country	1953–56	1956–59	1959–62	1962–65	1965–68	1968–71	1971–74	1974–76	1953–59	1959–71	1971–76	1953–76
World	10.6	5.5	7.6	10.2	9.8	9.8	11.4	3.6	8.0	9.3	8.2	8.7
Developed[1]	8.7	4.9	7.4	10.4	10.3	10.2	11.2	2.1	6.8	9.6	7.5	8.4
LDCs[2]	8.1	−1.6	7.5	13.6	9.4	7.9	25.6	3.3	3.1	9.6	16.2	9.2
CPEs[3]	39.3	14.1	9.1	7.2	6.5	7.8	3.8	4.1	26.1	7.6	3.9	11.3
Developed												
Western Europe	11.5	7.9	8.1	10.4	8.6	11.0	11.5	1.8	9.7	9.5	7.5	9.1
EEC	—	—	9.4	11.1	9.8	15.0	—	1.7	—	11.3	—	—
EFTA	—	—	5.7	8.5	3.4	9.8	—	1.4	—	6.8	—	—
Germany	19.5	14.3	5.8	11.7	8.4	11.2	13.5	0.6	16.9	9.2	8.2	10.9
United States	1.9	−1.5	5.3	6.3	9.7	4.1	10.4	2.5	0.2	6.3	7.2	4.9
Canada	5.2	2.3	3.5	12.2	20.8	7.7	0.8	3.4	3.7	6.5	1.8	4.7
Japan	27.4	11.2	11.6	19.8	14.9	17.6	14.5	2.4	19.0	15.9	9.5	15.3
Other	11.4	−11.6	−11.6	17.7	*33.8	7.4	12.5	4.8	−0.8	10.6	9.4	7.3
LDC												
Africa[4]	6.9	3.8	4.0	14.2	7.1	−0.5	9.8	−11.2	5.3	6.1	0.9	4.7
Latin America	9.4	−4.3	4.2	13.7	20.7	6.1	23.2	−3.9	2.3	11.0	11.5	8.8
Middle East	12.1	7.4	1.8	16.1	*12.0	10.8	50.9	−2.1	9.7	3.6	26.9	9.9
Asia[5]	7.7	−3.9	10.7	12.7	8.6	11.8	29.2	8.8	1.7	10.9	20.6	10.4
NIC3[6]	13.0	1.7	11.5	18.5	24.5	16.9	22.3	10.4	7.2	17.8	17.4	14.9

*Reflects admission of the United Kingdom, Ireland, and Denmark to the EEC and their departure from the EFTA.
[1]Developed market economies: United States, Canada, Japan, Western Europe, Australia, New Zealand, and South Africa.
[2]All countries excluding developed countries and CPEs.
[3]Eastern Europe, USSR, People's Republic of China, Mongolia, North Korea, North Vietnam.
[4]Excludes South Africa and Rhodesia.
[5]Excludes developed countries and CPEs.
[6]Republic of Korea, Hong Kong, Singapore (data for Taiwan were not available for the entire period).

data for Taiwan been available, the concentration of market share in the NIC category would be even higher.

Chemicals

The pattern of change in trade shares of chemicals (about 10 percent of the total) has been quite different from that for all manufactures. This is shown in table 3.15. Over the 1953–76 period the LDCs, CPEs, and Japan have captured little, if any, increased share of the world market. The major shift has been a combined loss by the United States and Canada of 12 percent and a 9 percent gain by Western Europe. Almost 5 percent of the market has been captured by Germany. The last two years of data reflect a slight reversal of the trend; the United States and Canada gain and West Europe and Japan lose.

Machinery and Transport Equipment

Exports in machinery and transportation equipment have grown from 50 percent of total United States manufactures exports in 1953 to 64 percent by 1976. Table 3.16 illustrates that since 1956 the developed countries have maintained their aggregate market share, about 87 percent.

Although United States exports have grown rapidly they have not kept pace with world growth in this category. During the 1950s the United States lost almost 16 percent of the world market. Half of this went to the CPEs and most of the remainder to Western Europe, especially Germany. The United States share diminished more slowly in the 1960s. Between 1959 and 1971 the United States lost 5.9 percent, the CPEs lost 4 percent, and Western Europe 2 percent. Of this 12 percent, Japan gained 7 percent (thereby *tripling* its market share in twelve years), Canada gained over 4 percent (mainly due to the Auto Agreement with the United States), and the LDCs gained 1 percent.

Japan continued to increase its share in the 1970s and was joined by the Asian countries, which tripled their share in five years. The burden of these gains was not concentrated on the United States. During the 1971–76 period the United States lost only 1 percent of the market while more serious losses were sustained by Western Europe, Canada, and the CPEs.

Other Manufactures

Trade patterns in other manufactures are shown in table 3.17. Here the United States lost two-thirds of its 1953 share by 1976. Most of the loss came in the 1950s: since 1962 the loss has been moderate and of decreasing importance to the overall United States position in manufactures. During the 1950s the big gains were made by Japan, the CPEs,

Table 3.15   Distribution of Exports of Chemicals (SITC 5)

	1953	1956	1959	1962	1965	1968	1971	1974	1976
% of World Manufacturing	9.3	10.1	10.9	10.7	11.1	11.3	10.7	13.3	11.7
Total ($ millions)	3,518	5,198	6,668	8,460	12,220	16,970	24,210	64,110	68,440
Country					Percentage of Total				
Developed[1]	87.8	87.8	87.3	86.2	86.9	88.5	88.8	88.2	88.2
LDCs[2]	7.8	4.7	3.9	4.1	4.2	3.7	3.9	5.8	5.3
CPEs[3]	4.4	7.5	8.8	9.7	8.9	7.8	7.3	6.0	6.5
OPEC	—	—	—	—	—	—	0.3	0.9	0.9
Developed									
Western Europe	55.7	54.8	56.8	57.7	59.2	60.3	62.5	64.7	64.0
EEC	—	—	35.4	36.9	38.8	41.2	42.7	*55.2	54.6
EFTA	—	—	20.7	20.0	18.9	17.6	18.3	* 7.9	8.0
Germany	13.6	15.0	16.6	17.1	17.0	18.4	18.7	18.9	18.3
United States	23.8	24.5	22.8	22.2	19.6	19.4	15.9	13.8	14.6
Canada	4.9	5.1	3.7	2.4	2.4	2.4	2.4	1.7	2.1
Japan	1.8	2.0	2.5	3.1	4.5	4.8	6.2	6.3	4.0
Other	1.6	1.4	1.5	0.8	1.2	1.6	1.8	1.7	3.5
LDC									
Africa[4]	2.0	1.4	1.3	1.3	1.0	0.6	0.7	0.6	0.5
Latin America	2.6	1.7	1.1	1.3	1.3	1.7	1.8	2.3	2.2
Middle East	0.3	0.2	0.3	0.2	0.5	0.2	0.2	1.0	0.9
Asia[5]	2.9	1.4	1.3	1.3	1.4	1.1	1.2	1.8	1.7
NIC3[6]	2.6	1.2	0.5	0.5	0.4	0.7	0.8	1.0	0.8

*Reflects admission of the United Kingdom, Ireland, and Denmark to the EEC and their departure from the EFTA.
[1]Developed market economies: United States, Canada, Japan, Western Europe, Australia, New Zealand, and South Africa.
[2]All countries excluding developed countries and CPEs.
[3]Eastern Europe, USSR, People's Republic of China, Mongolia, North Korea, North Vietnam.
[4]Excludes South Africa and Rhodesia.
[5]Excludes developed countries and CPEs.
[6]Republic of Korea, Hong Kong, Singapore (data for Taiwan were not available for the entire period).

Table 3.16   Distribution of Exports of Machinery and Transport Equipment (SITC 7)

	1953	1956	1959	1962	1965	1968	1971	1974	1976
% of World Manufacturing	36.7	38.4	39.7	41.8	41.6	43.6	45.9	42.6	47.6
Total ($ millions)	13,855	19,859	24,360	33,140	45,690	65,640	104,050	205,670	278,350
Country					Percentage of Total				
Developed[1]	92.5	86.7	84.9	86.4	85.9	86.8	87.8	87.2	87.9
LDCs[2]	1.2	1.1	0.6	0.8	0.9	1.0	1.4	3.2	3.4
CPEs[3]	6.3	12.3	14.8	12.8	13.2	12.1	10.8	9.6	9.1
OPEC	—	—	—	—	—	—	—	0.1	0.2
Developed									
Western Europe	47.9	48.8	54.7	56.3	55.2	50.9	52.6	51.5	51.0
EEC	—	—	30.8	33.7	34.4	33.3	34.9	*43.1	42.8
EFTA	—	—	22.9	21.4	19.5	16.8	16.6	* 7.1	6.9
Germany	12.1	15.0	17.6	18.5	20.3	17.3	17.8	18.5	17.4
United States	40.3	33.4	24.6	24.3	21.9	22.0	18.7	18.6	17.8
Canada	2.5	1.6	1.7	1.8	2.6	5.9	5.8	4.3	4.3
Japan	1.4	2.4	3.3	3.8	5.8	7.5	10.2	12.3	13.4
Other	0.4	0.5	0.6	0.3	0.4	0.5	0.5	0.5	0.4
LDC									
Africa[4]	—	—	—	0.1	0.1	0.1	0.1	0.1	—
Latin America	—	—	0.1	0.1	0.1	0.2	0.4	0.7	0.7
Middle East	0.1	—	0.1	—	0.1	0.1	0.1	0.2	0.2
Asia[5]	.9	.8	0.4	0.6	0.6	0.5	0.8	2.2	2.5
NIC3[6]	0.1	0.1	0.1	0.2	0.3	0.4	0.6	1.3	1.5

*Reflects admission of the United Kingdom, Ireland, and Denmark to the EEC and their departure from the EFTA.
[1]Developed market economies: United States, Canada, Japan, Western Europe, Australia, New Zealand, and South Africa.
[2]All countries excluding developed countries and CPEs.
[3]Eastern Europe, USSR, People's Republic of China, Mongolia, North Korea, North Vietnam.
[4]Excludes South Africa and Rhodesia.
[5]Excludes developed countries and CPEs.
[6]Republic of Korea, Hong Kong, Singapore (data for Taiwan were not available for the entire period).

Table 3.17   Distribution of Exports of Other Manufactures (SITC 6 and 8)

Country	1953	1956	1959	1962	1965	1968	1971	1974	1976
% of World Manufacturing	53.9	51.4	49.3	47.6	47.2	45.0	43.4	44.2	40.7
Total ($ millions)	20,357	26,610	30,290	37,730	51,820	67,460	98,410	213,290	238,470
					Percentage of Total				
Developed[1]	85.0	80.3	78.9	76.3	77.5	78.3	79.0	79.0	77.1
LDCs[2]	10.8	11.0	9.4	9.5	10.6	11.0	10.2	12.9	14.2
CPEs[3]	4.2	8.7	11.7	14.2	11.9	10.8	10.8	8.1	8.6
OPEC	—	—	—	—	—	—	—	0.4	0.3
Developed									
Western Europe	48.6	50.2	52.3	51.9	53.2	53.1	55.1	55.3	54.6
EEC	—	—	32.1	32.5	33.2	33.8	35.1	*43.4	42.5
EFTA	—	—	18.2	17.1	17.2	17.4	17.6	* 9.4	9.3
Germany	7.4	9.7	10.9	11.0	10.7	11.6	12.1	13.5	12.4
United States	22.9	15.0	12.5	10.6	9.5	8.7	7.3	7.8	7.5
Canada	6.6	6.1	5.7	5.2	4.9	4.5	3.9	3.1	3.0
Japan	3.9	6.0	6.8	7.6	8.9	9.6	10.7	10.8	9.9
Other	3.0	3.0	1.5	1.0	1.0	2.4	2.0	2.0	2.1
LDC									
Africa[4]	2.5	2.4	2.4	2.3	2.5	2.5	1.9	1.8	1.2
Latin America	2.5	2.7	2.0	1.9	2.0	2.8	2.3	2.9	2.4
Middle East	0.5	0.6	0.7	0.6	0.7	0.3	0.3	0.6	0.6
Asia[5]	5.3	5.3	4.3	4.8	5.2	5.3	5.5	7.6	9.9
NIC[6]	1.1	1.5	1.5	1.7	2.1	2.8	3.3	3.8	5.4

*Reflects admission of the United Kingdom, Ireland, and Denmark to the EEC and their departure from the EFTA.
[1]Developed market economies: United States, Canada, Japan, Western Europe, Australia, New Zealand, and South Africa.
[2]All countries excluding developed countries and CPEs.
[3]Eastern Europe, USSR, People's Republic of China, Mongolia, North Korea, North Vietnam.
[4]Excludes South Africa and Rhodesia.
[5]Excludes developed countries and CPEs.
[6]Republic of Korea, Hong Kong, Singapore (data for Taiwan were not available for the entire period).

and Germany. During the 1960s leadership passed to other West European countries along with Japan.

From 1968 to 1976 a major shift occurred in this category. The United States market position stabilized, Japan's growth was nil, and the Asian LDCs made all of the market gains. Since 1968 the Asian LDCs have captured 4.6 percent of the market; of this three NIC countries have taken more than half, 2.6 percent. This is the category of manufactures most important to Asian and NIC penetration of manufactured exports.

Summary

Since 1953 the United States has experienced a major reduction of its share of world trade in manufactures. During the 1950s the gains were made by Western Europe, especially Germany, the CPEs, and Japan. During the 1960s Japan's share increased very rapidly while growth of Western Europe slowed and the CPEs actually lost market shares. In the 1970s the growth centers were the Asian LDCs, especially the newly industrializing countries. Japan's share continued to increase but at a much slower rate than in the earlier periods.

The movements of market shares have been different amongst the three categories of manufactures: chemicals, machinery and transport equipment, and other. Japan's performance has been led by the second category while the third has been most important to the LDCs.

3.2.4   Trends in Effective Exchange Rates

The combination of growing capacity in the rest of the world relative to the United States and roughly comparable cost developments led to a significant drop in the United States share of world exports in manufacturing from 1950 to 1970, as shown in section 3.2.3 above. This in turn built up pressure for a devaluation of the United States dollar. Since, under the Bretton Woods system, a dollar devaluation was effectively ruled out, the United States trade balance deteriorated after reaching a peak surplus in the early 1960s. As pressure accumulated, eventually the system broke down in 1970–71. Section 3.5 will examine monetary developments in detail, while here we will focus on movements in the *real effective exchange rate* as an adjustment mechanism that was frozen during the period 1950–70, but has worked reasonably well since.

Measures of Exchange Rates

When we consider exchange rate adjustment, we must keep in mind two distinctions. First, we can consider bilateral or effective rates. Bilateral exchange rates are the relative prices of individual currencies; an effective rate is the average price of a group of currencies. For example, we can consider the bilateral rates of the United States dollar in relation

to the Swiss franc or the Canadian dollar, or in terms of an effective rate that averages the United States dollar price of these bilateral rates. With some bilateral rates rising and some falling, an effective rate will generally show less movement than most bilateral rates. We see this in figure 3.1.

The second distinction differentiates between nominal and real exchange rates. These can be either bilateral or effective. The nominal rate is simply the home currency price of foreign exchange. The real rate is the nominal rate adjusted for movements of the relevant price levels. Thus if the United States dollar price of the deutschemark (DM) rose by 10 percent over a given period, this would be a nominal devaluation of the United States dollar. But if United States prices rose by 10 percent relative to German prices over the same period, there would be no change in the real dollar-DM rate. Analysis of short-term monetary developments usually focuses on *nominal bilateral* rates; analysis of long-run adjustment in a country's overall trade normally focuses on the *real effective* rate.

Adjustment in the Real Effective Rate

Table 3.18 shows index numbers for the United States nominal effective exchange rate in column 1, relative wholesale price indexes (WPIs) in column 2, and real effective exchange rates in column 3 for the period 1961–78. The period breaks clearly into two subperiods: 1961–70 where the three series are fairly constant, and 1970–78 where the effective rates fall substantially.

During the 1960s the United States WPI fell slightly relative to the weighted average of the other industrial countries, from 102.6 in 1961 to 98.4 in 1970. This reflects the middle-of-the-road performance of unit labor cost shown above in table 3.11. The effective nominal exchange rate also fell slightly during this period—an *up* valuation or appreciation of the United States dollar as other exchange rates moved. The combination of a small relative price improvement and an equally small effective appreciation in nominal terms resulted in almost no movement in the real effective rate. From 82.9 in 1961, it rose to 85.9 in 1965 then returned to 83.0 in 1969. Thus over the 1960s there was essentially no adjustment in the real effective rate as the United States lost trade shares.

Beginning in 1971 nominal bilateral rates began to move substantially, and the United States real effective rate began to adjust. Figure 3.1 shows the movements of four United States bilateral rates and the United States nominal effective rate. The bilateral rates shown are the United States dollar price of the Swiss franc, Japanese yen, Canadian dollar, and pound sterling. These are important rates that span the experience of the 1970s. The effective nominal United States rate is the weighted
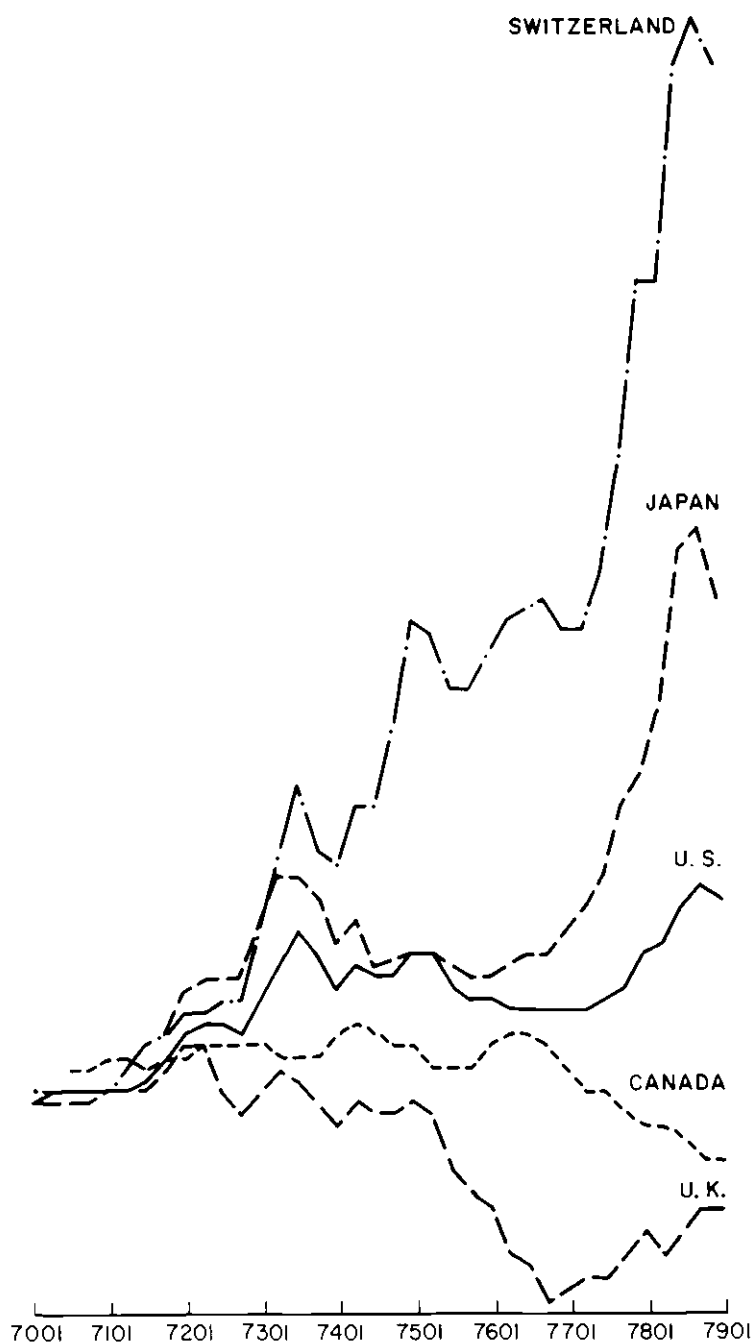
Fig. 3.1   Bilateral and effective nominal exchange rate.

		United States	Exchange Rate
	Effective	WPI Rela-	Adjusted for
	Exchange	tive to	Relative WPI
	Rate[a]	Competitors	$(3) = (1) \div (2) \times 100$
Year	(1)	(2)	(3)
1961	85.0	102.6	82.9
1962	84.3	101.7	82.9
1963	84.2	99.7	84.4
1964	84.2	98.2	85.7
1965	84.2	98.0	85.9
1966	84.2	98.4	85.6
1967	84.0	98.7	85.1
1968	82.6	99.0	83.5
1969	82.4	99.3	83.0
1970	83.2	98.4	84.5
1971	85.5	98.3	86.9
1972	92.3	98.4	93.8
1973	100.3	98.3	102.0
1974	98.1	97.9	100.2
1975	100.0	100.0	100.0
1976	94.4	97.3	97.0
1977	95.6	96.4	99.2
1978	105.3	98.9	106.4

Table 3.18   **United States Effective Exchange Rates, 1961–78, 1975 = 100**

Source: International Monetary Fund.

[a]This is the inverse of an index of the weighted average of the foreign exchange prices of the United States dollar.

index of the United States dollar price of foreign exchange from table 3.18. All the series in figure 3.1 are indexed to 1970 = 100. We see the Swiss franc and yen moving up against the dollar, and the Canadian dollar and sterling moving down. The United States nominal effective rate is essentially an average of these movements. From 1970 to 1978, in terms of the nominal effective rate, the United States dollar was devalued 27 percent, as shown in figure 3.1 and column 1 of table 3.18.

From 1970 to 1978 the United States relative price performance again matched the average of its competitors. The weighted ratio index of WPIs in table 3.18 is 98.4 in 1970, and 98.9 in 1978. Thus the movement in the real effective rate was almost exactly that of the nominal effective rate in the 1970s. The real rate in column 3 of table 3.18 shows a 26 percent devaluation of the United States dollar in real terms from 1971 to 1978, almost exactly the same as the nominal rate.

In terms of broad trends, United States price performance has been roughly comparable to that of its industrial competitors since 1960. During the decade 1960–70, the nominal effective United States rate

was essentially constant (with a small upward creep due to an occasional devaluation in one of the other countries), and so was the real effective rate. With capacity growing abroad, the United States lost trade shares. In the 1970s, movement in the nominal effective United States rate brought about a real effective devaluation of over 20 percent, and the shrinkage of export shares halted. It appears that the real effective rate has worked as an instrument for adjustment, and that its movements have come through movements in the nominal rate with roughly parallel price performance.

3.3   Trends in the Composition of United States Trade

At the end of World War II the pattern of United States trade was distorted by the fact that industrial capacity had been significantly reduced in the other major advanced countries. Trade in consumer goods provides a good example of this distortion. In every year from 1925 to 1938 the United States was a net importer of consumer goods (see table 3.19). But in 1946 the United States emerged from the war as a net exporter, and in 1947 the surplus on consumer goods was $1 billion. As industrial capacity was rebuilt in Europe and Japan, the surplus shrank steadily, and in 1959 the United States again became a net importer, with a deficit in consumer goods that has grown steadily since then. This example is typical of the pattern we see in the long-run data on the composition of trade. During the years since 1950 the composition of United States trade has moved back toward its longer run base of comparative advantage. By the mid-1960s we see growing surpluses in trade in capital goods, chemicals, and agriculture, and deficits in consumer goods and nonagricultural industrial supplies and materials. Trade in automotive products switched from surplus to deficit in 1968.

This section examines the long-term trends in commodity composition of United States trade, using end-use data developed by the Commerce Department. Section 3.3.1 analyzes the aggregate data by major end-use categories. These show the broad trends just described. Section 3.3.2 studies the disaggregated data, down to the four-digit level. At that level one can see the effects of product cycles, international rationalization of the location of industry, and international location of stages in processing within an industry, for example.

Section 3.3.3 moves to consider the implicit factor composition of trade, and finds that the United States, on balance, is a net exporter of the services of human capital and an importer of labor services. Thus the broad picture that emerges in this section is an increasing international division of labor along the lines of comparative advantage, with the United States showing strength in goods that are intensive in human capital.

Table 3.19   **United States Trade Balances by End-Use Commodity, 1925–78 ($ Millions)**

| | | Industrial Supplies and Materials | | | |
Year	Agricultural Goods	Fuels and Lubricants	Chemicals	Other	Capital Goods
1925	355	473	−37	−345	399
1926	52	634	−22	−418	422
1927	154	484	−14	−352	454
1928	186	494	−20	−309	516
1929	−78	517	−6	−370	618
1930	15	433	3	−271	518
1931	−45	243	5	−221	312
1932	54	188	16	−136	123
1933	67	211	17	−200	127
1934	23	244	26	−111	207
1935	−158	260	31	−237	251
1936	−333	275	26	−310	325
1937	−459	395	22	−184	486
1938	19	403	34	−33	512
1939	−267	403	64	−63	570
1940	−399	323	136	217	945
1946	1,082	587	262	−100	1,628
1947	1,604	1,013	553	890	3,144
1948	645	713	476	−600	2,523
1949	864	379	464	−460	2,456
1950	−810	174	354	−1,632	2,033
1951	−499	787	479	−1,494	2,356
1952	−706	605	376	−1,705	2,585
1953	−1,258	274	334	−2,227	2,705
1954	−936	136	533	−1,500	2,699
1955	−625	102	620	−1,571	2,817
1956	272	220	746	−1,689	3,470
1957	495	297	857	−926	4,087
1958	−202	−544	829	−1,412	4,292
1959	−260	−699	914	−2,515	4,026
1960	857	−739	1,128	−1,227	4,949
1961	980	−933	1,133	−1,098	5,217
1962	741	−1,080	1,187	−2,021	5,685
1963	1,068	−956	1,313	−2,010	5,781
1964	1,699	−1,069	1,627	−1,793	6,424
1965	1,516	−1,264	1,504	−2,989	6,581
1966	1,570	−1,270	1,627	−3,634	6,756
1967	1,139	−1,127	1,729	−3,359	7,531
1968	230	−1,457	2,075	−4,574	8,292
1969	190	−1,584	2,044	−3,945	9,013

Table 3.19—*continued*

	Industrial Supplies and Materials				
Year	*Agricultural Goods*	*Fuels and Lubricants*	*Chemicals*	*Other*	*Capital Goods*
1970	533	−1,390	2,231	−3,394	10,457
1971	888	−2,068	2,045	−5,913	10,871
1972	1,560	−3,180	2,114	−7,183	10,955
1973	7,967	−6,373	3,156	−6,299	13,760
1974	10,527	−21,913	4,946	−7,527	20,663
1975	11,414	−21,880	5,163	−5,010	26,126
1976	10,471	−29,913	5,509	−7,470	25,198
1977	8,804	−40,218	5,572	−10,950	25,358
1978	13,258	−38,415	6,596	−15,055	26,771

Year	*Consumer Goods*	*Automotive Products*	*Other*	*Military Goods*	*N.E.C.*
1925	−107	323	−475	5	92
1926	−144	326	−558	6	81
1927	−152	395	−381	5	87
1928	−138	506	−279	6	76
1929	−173	544	−275	8	55
1930	−92	282	−153	7	40
1931	−63	151	−78	5	25
1932	−40	78	−29	5	18
1933	−45	92	−50	6	0
1934	−28	192	−97	12	11
1935	−37	232	−126	10	11
1936	−33	245	−202	14	26
1937	−38	353	−291	22	−39
1938	16	275	−146	37	18
1939	21	259	−176	54	−5
1940	68	258	−320	169	−1
1946	592	551	−153	97	221
1947	958	1,147	−183	174	231
1948	599	904	−204	249	142
1949	519	759	−115	306	175
1950	310	723	−381	441	112
1951	445	1,180	−689	1,260	144
1952	352	968	−508	2,244	175
1953	329	945	−198	3,773	116
1954	310	1,019	−122	2,522	81
1955	143	1,191	−293	1,568	41
1956	113	1,250	−223	2,035	0
1957	126	1,010	−175	1,823	−147
1958	119	568	−60	1,111	−207
1959	−261	343	−214	936	−319

Table 3.19—*continued*

Year	Consumer Goods	Automotive Products	Other	Military Goods	N.F.C.
1960	−505	633	−99	804	−274
1961	−448	805	−5	792	−167
1962	−821	780	−14	914	−112
1963	−831	882	63	954	−80
1964	−943	962	90	881	22
1965	−1,506	990	107	1,170	−109
1966	−1,877	444	146	1,155	−107
1967	−2,102	150	145	952	−325
1968	−3,041	−842	113	963	−349
1969	−3,883	−1,400	56	1,502	−244
1970	−4,670	−2,242	135	1,230	230
1971	−5,530	−3,521	173	1,335	58
1972	−7,600	−4,207	111	1,038	206
1973	−8,175	−4,542	73	1,385	556
1974	−8,096	−3,798	139	2,015	916
1975	−6,735	−1,596	297	2,782	860
1976	−9,248	−4,911	312	2,413	697
1977	−12,979	−6,554	165	3,041	1,175
1978	−17,894	−9,853	343	4,341	1,392

Year	Total	Year	Total
1925	1,025	1950	2,788
1926	763	1951	5,959
1927	1,058	1952	6,078
1928	1,436	1953	6,519
1929	1,300	1954	6,788
1930	1,154	1955	6,335
1931	606	1956	8,886
1932	467	1957	10,373
1933	451	1958	7,326
1934	749	1959	5,117
1935	557	1960	9,199
1936	357	1961	9,982
1937	661	1962	9,167
1938	1,463	1963	10,424
1939	1,280	1964	12,958
1940	1,930	1965	11,020
1946	5,833	1966	10,490
1947	11,411	1967	10,619
1948	7,081	1968	8,310
1949	6,931	1969	1,749

Table 3.19—*continued*

Year	Total	Year	Total
1970	3,120	1975	11,422
1971	−1,659	1976	−6,939
1972	−6,185	1977	−26,585
1973	1,508	1978	−28,516
1974	−2,125		

Source: OBE 1970, table 5 (exports) and table 6 (imports); BEA 1977, table 2.2.

3.3.1 Long-term Trends in United States Trade by Aggregate End-Use Categories

A useful perspective on developments in United States trade can be obtained by reviewing its longer run trends by end-use commodity categories. The OBE data on trade are broken into six summary categories: foods, feeds, and beverages (0); industrial supplies and materials (1); capital goods (2); automotive products (3); consumer goods (4); and military goods (5) (OBE 1970; BEA 1977). This section considers these aggregate end-use categories. Selected three- and four-digit categories are examined in table 3.22 to observe more detailed movements in trade.

Initial Assumptions and Hypotheses

Two basic questions arise in analyzing and presenting the OBE data: How should the data be disaggregated—in terms of both categories to be used and degree of detail? And how should exports and imports be related to each other?

To a large extent, the answer to the first question involves the way the OBE organizes the data. This disaggregation makes sense if the course of trade in subcategories is more similar *within* major categories than *across* major categories. Thus a decision was made to disaggregate, within the end-use framework, as far as possible to see whether similar trade patterns obtain *within*, and dissimilar patterns *across*, categories.

The second question called for focus on trade balances by commodity groups. This focus, of course, does not suggest that all categories "should" show surpluses, or that categories showing large and growing deficits display "weakness" that necessarily should be corrected by policy action. The net balance of payments should be in equilibrium on whatever basis is thought appropriate, while within it some items show deficits, and others surpluses. Furthermore, the basic notion of comparative advantage implies that the United States should be a net importer of some goods and a net exporter of others.

But even at the finest level of statistical disaggregation that is available, it appears that most goods are subject to two-way trade. Thereby,

the notion of comparative advantage becomes the proposition that the United States should be a *net* exporter of goods in which it has a comparative advantage—whether it derives from resource endowment, technological advantage, or education embodied in human capital—and a *net* importer of goods in which it is at a disadvantage.[2] Thus it is natural to focus on net exports by commodity group in an analysis that attempts to reveal something about movements in United States comparative advantage and trade.[3]

Trends in Aggregate End-Use Categories

Table 3.19 shows net exports for ten major export end-use categories for the years 1925–78, excluding the war years 1941–45. In the table, total nonagricultural industrial supplies and materials are disaggregated into three parts: fuels and lubricants; chemicals; and a residual component. This disaggregation is necessary for two reasons. Fuels and lubricants include as major subcategories crude petroleum and semifinished petroleum products and natural gas. Throughout the period trade in these categories was heavily influenced both by natural resource advantages and by government policies. The oil price increases of the 1970s show up here. Chemicals are shown separately because they are the only three-digit category among nonagricultural industrial supplies and materials to show a surplus consistently since World War II.

Agricultural goods. Exports and imports of agricultural goods are shown in figure 3.2. From 1925 to 1972, the United States trade balance in agricultural goods typically fluctuated in a range from a surplus of $1.5 billion to a deficit of $1.2 billion. Deficits dominated in the 1950s, and there were small surpluses throughout the 1960s. A major change in United States agricultural trade came in the years 1972–74. Exports rose from $9.5 billion in 1972 to $22.2 billion in 1974, and the surplus went from $1.6 to $10.5 billion. Of the increase, approximately $5 billion was in wheat and feed grains, and the other $4 billion was scattered across other commodities. The 1972–74 increase is associated with the boom in agricultural prices in those years. However, exports stayed in the $22–24 billion range in 1974–77, and rose to $30 billion in 1978, with the surplus rising to $13.3 billion in 1978. Thus food prices do not account for the persistence of the change. During the mid-1970s United States agricultural trade moved from a position typically near balance to a surplus of $10–14 billion.

Fuel and lubricants. Trade in fuel and lubricants is shown in figure 3.3. It consistently showed a small surplus from 1925 through 1957. This was replaced in 1958 by a deficit, which grew fairly steadily to 1970. The deficit began to increase progressively in 1971, with major jumps to $22 billion in 1974 and $40 billion in 1977–78. On the basis of the first two quarters of 1979, the fuels and lubricants deficit for the year is about $50 billion. The increase in the deficit in recent years is,

of course, due to the oil price increases. In the period 1946–70, however, trade in fuel and lubricants followed a pattern frequently seen in United States trade in industrial supplies and materials and in consumer goods. There was a significant postwar bulge in the export surplus, which then

EXPORTS

IMPORTS

| 1925 | 1930 | 1935 | 1940 | '46 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | '78 |
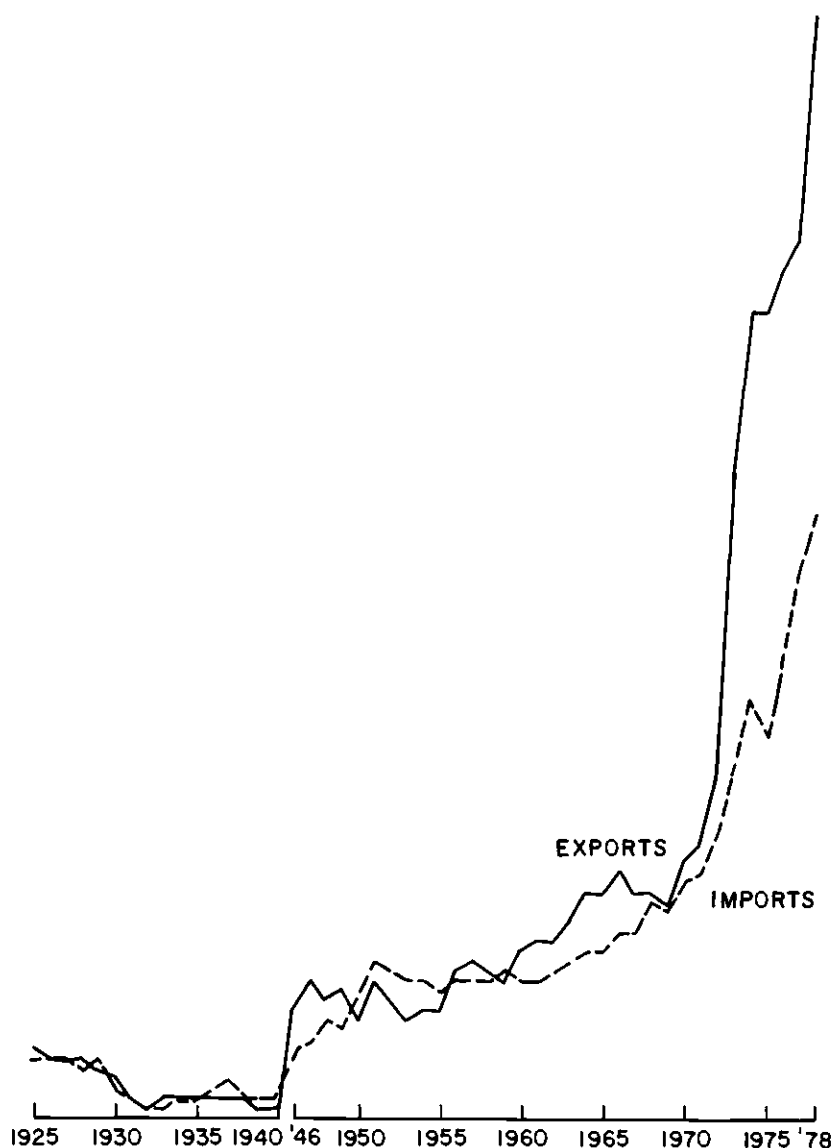
Fig. 3.2   United States exports and imports of agricultural goods, 1925–78.

diminished to balance in the mid-1950s, and a growing deficit in the 1960s. This is a sign of comparative advantage being reestablished in the postwar economy.

Chemicals. A different pattern appears in chemicals (including fertilizers but excluding medicinal preparations), shown in figure 3.4. From
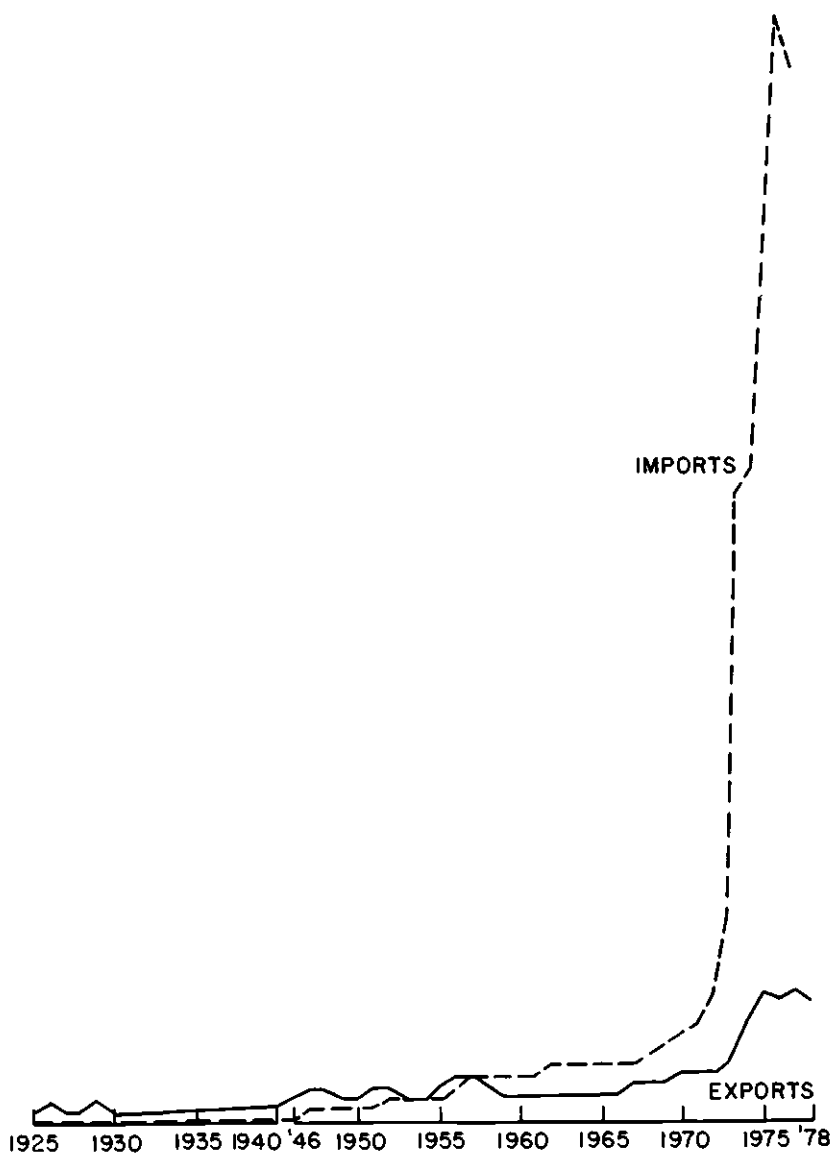
Fig. 3.3   United States exports and imports of fuels and lubricants, 1925–78.

1925 to 1937 trade in these products was roughly balanced. Then in 1938–40 a small but growing surplus appeared. After the war, exports started off substantially above imports, which were roughly at their pre-war level, then grew substantially faster than imports throughout the period 1946–68. From 1968 to 1972, the surplus stabilized at about $2

EXPORTS

IMPORTS

1925   1930   1935 1940 '46 1950   1955   1960   1965   1970   1975 '78
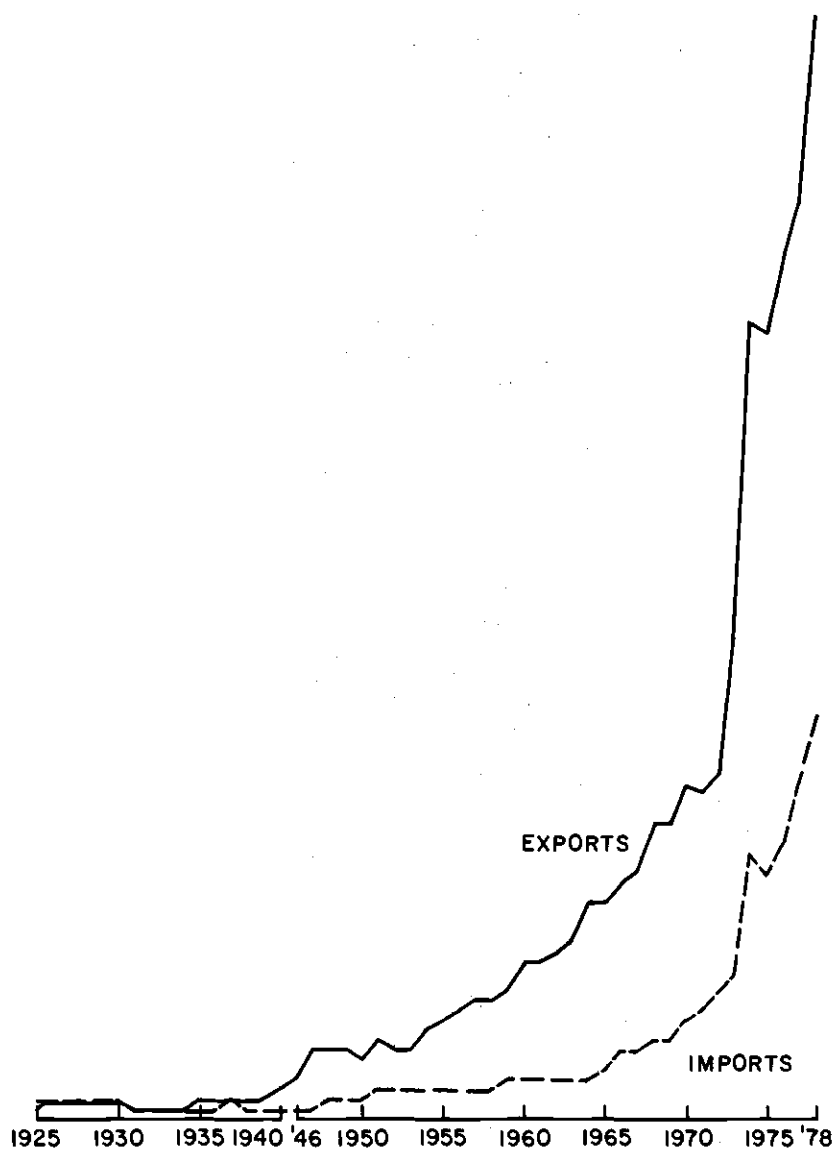
Fig. 3.4   United States exports and imports of chemicals, 1925–78.

billion. Then, with the increase in the price of oil, the principal input into chemicals, the surplus rose to the level of $5–5.5 billion in 1974–77, and $6.6 billion in 1978.

Other nonagricultural industrial supplies and materials. The category of other industrial supplies and materials is a heterogeneous group of products, as can be seen in table 3.19. Most of them have shown deficits throughout the period 1925–70. Some of the more interesting subcategories will be discussed in the section on disaggregated trade patterns. On aggregate, the deficit in this category has grown irregularly since 1946. In the late 1960s, the deficit was around $4 billion. During the 1970s, it grew fairly steadily to $15 billion in 1978.

Capital goods. Capital goods had a surplus in every year of the period 1925–70. As is apparent in figure 3.5, imports were flat before World War II, varying in the range of $10 million to $40 million, while exports generally were in the $400 million to $600 million range. After the war, capital goods exports showed the typical bump in the late 1940s, yielding a much higher surplus than in the prewar years. The postwar bulge disappeared in 1950, and the surplus grew steadily to about $11 billion in 1971–72. From 1972 to 1975, capital goods exports increased from $17 billion to $36 billion, and the surplus rose by $15 billion. The distribution of the $19 billion increase in capital goods exports is shown in table 3.20. Exports to Western Europe and Canada rose significantly. More striking is the increase to the developing countries and OPEC. As shown in table 3.20, the increase was spread across all the subcategories of capital goods.

Consumer goods. Consumer goods (excluding food and beverages) describe a pattern completely different from that of capital goods, as figures 3.5 and 3.6 confirm. Before World War II, the United States typically was a net importer of consumer goods by a small margin. Immediately after the war, a sizable surplus emerged as exports quadrupled from around $250 million to $1 billion. After this postwar bulge disappeared, exports grew slowly but steadily. Imports of consumer goods, on the other hand, have expanded at an increasingly rapid pace, overtaking exports in 1959. The deficit has increased exponentially ever since, reaching $5 billion in 1970–71, $10 billion in 1976, and $18 billion in 1978.

The plot of consumer goods trade in figure 3.6 suggests two generalizations. First, once the postwar bulge in consumer goods exports had disappeared and the irregularly declining surplus dwindled away, the deficit grew steadily, not settling at one level as it had before the war. Second, the growth in the deficit was not a result of excess demand in the late 1960s or 1972–73. The data reveal it in the shrinkage of the surplus beginning in the early 1950s.

Automotive products. In automotive products, the United States had a surplus every year until 1968, but since then has had an increasing

deficit. There was a small but steady surplus before World War II, following a pattern quite similar to that of capital goods (see fig. 3.7). After the war the familiar export bulge appeared but was eliminated by the early 1950s. Exports grew erratically from 1953 to 1962, and at a
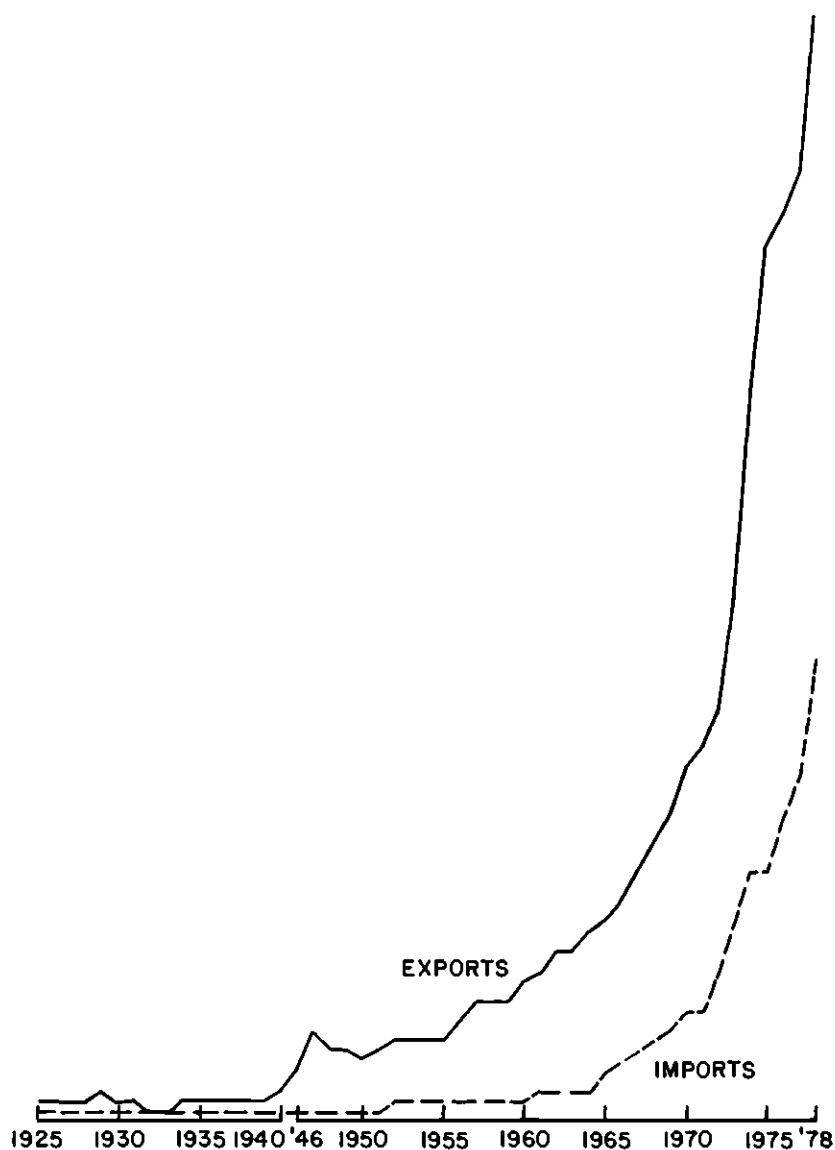

Fig. 3.5   United States exports and imports of capital goods, 1925–78.

smoothly increasing rate after that. Imports did not appear at a significant level until about 1955. They then grew at an increasing rate—with a relapse in 1959–61—and overtook exports in 1968, generating a deficit that has been growing ever since. The deficit on automotive products
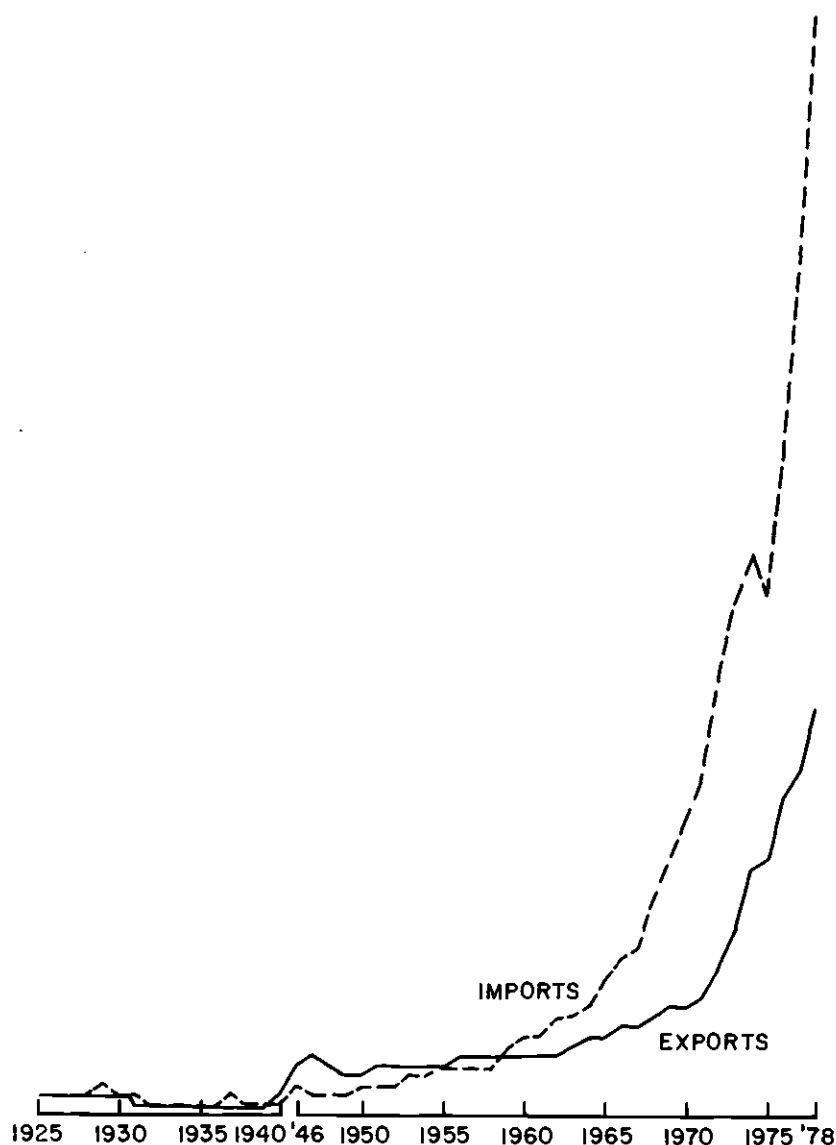
Fig. 3.6   United States exports and imports of consumer goods, 1925–78.

jumped from the $5 billion level in 1976 to nearly $10 billion in 1978. Over that period imports increased by $8.2 billion, while exports grew by $3.2 billion. The geographic division of the change is shown in table 3.21. The increase in trade with Canada reflects continued rationaliza-
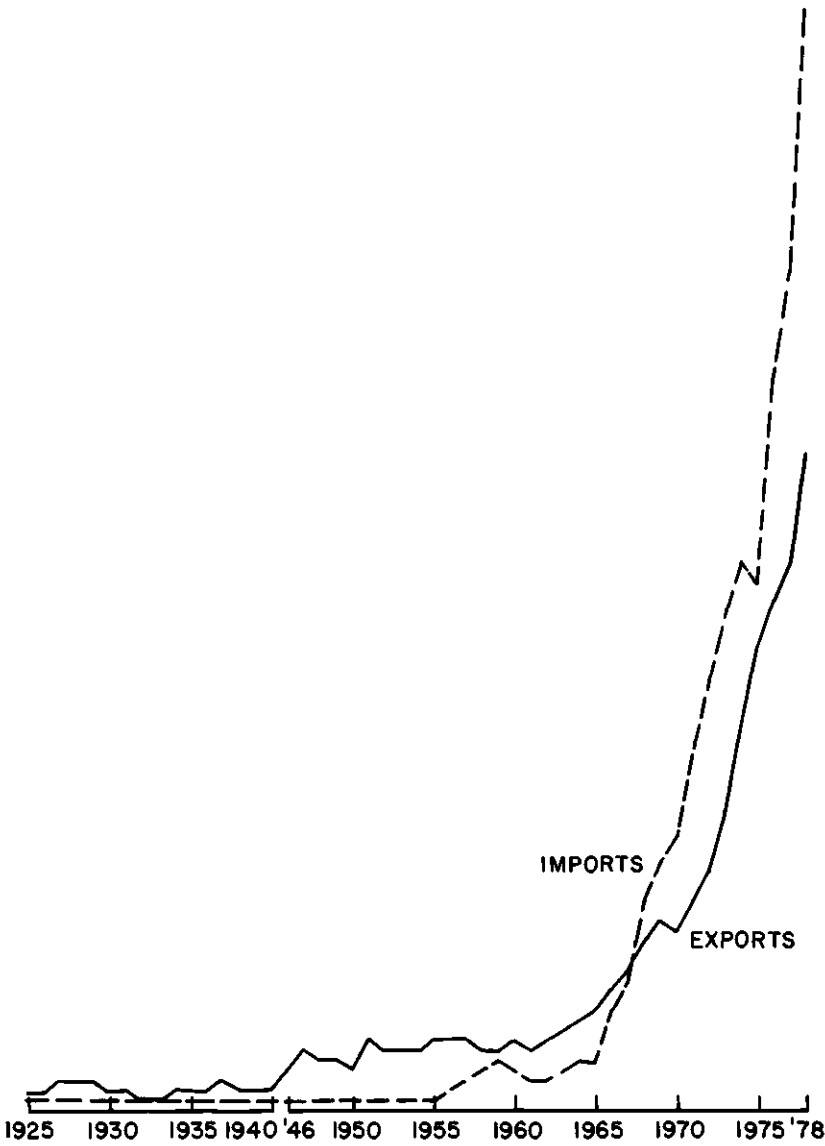
Fig. 3.7   United States exports and imports of automotive products, 1925–78.

Table 3.20   **Change in Capital Goods Exports, 1972–75 ($ Billions)**

Area	Increase in Exports
Western Europe	$ 4.9
Eastern Europe	0.7
Canada	2.7
Japan	0.5
Latin America	3.6
Australia, New Zealand, South Africa	1.1
Other Asia and Africa	5.5
Total	$19.0

Table 3.21   **Change in Trade in Automotive Products, 1976–78 ($ Billions)**

Area	Exports	Imports	Balance
Western Europe	0.3	2.0	−1.7
Canada	1.7	2.5	−0.8
Japan	0	3.4	−3.4
Latin America	0.7	0.2	+0.5
Other	0.5	0.1	+0.4
Total	3.2	8.2	−5.0

tion of the industry across the Canada-United States border following the Auto Agreement of 1965. The major shift has come in the deficit vis-à-vis Japan, with Western Europe next.

Military goods. Trade in military goods is shown in figure 3.8. Imports of aircraft and parts have grown erratically to about $150–200 million a year in 1975–78. Exports have had two major periods of expansion. In 1950–53, during the Korean War, exports rose from $0.4 billion to $3.8 billion. Exports then shrank to a level of about $0.8–1.3 billion a year in the period 1958–73. Since 1974, exports have again grown rapidly, reaching $4.3 billion in 1978.

Summary. The data of table 3.19 give a strong impression that United States trade since World War II has been characterized by growing surpluses in chemicals and capital goods and growing deficits in consumer goods and industrial materials. Once the immediate postwar adjustment to 1950 or so was finished, a clear pattern of comparative advantage in these goods emerged. More recently, in the 1970s we have seen a growing deficit on automotive products and surplus in agriculture. These also can be assumed to reflect comparative advantage. Finally, the oil price increases of the 1970s have produced a $40 billion deficit in fuels, and military sales show a $4 billion surplus.

3.3.2   Disaggregated Patterns of Trade in Manufactured Goods

Patterns of United States trade in manufactured goods, disaggregated into thirty-four end-use commodity groups, are outlined in table 3.22.[4] The table attempts to summarize the movements of exports and imports

EXPORTS

IMPORTS

1925   1930   1935 1940 '46 1950   1955   1960   1965   1970   1975 '78
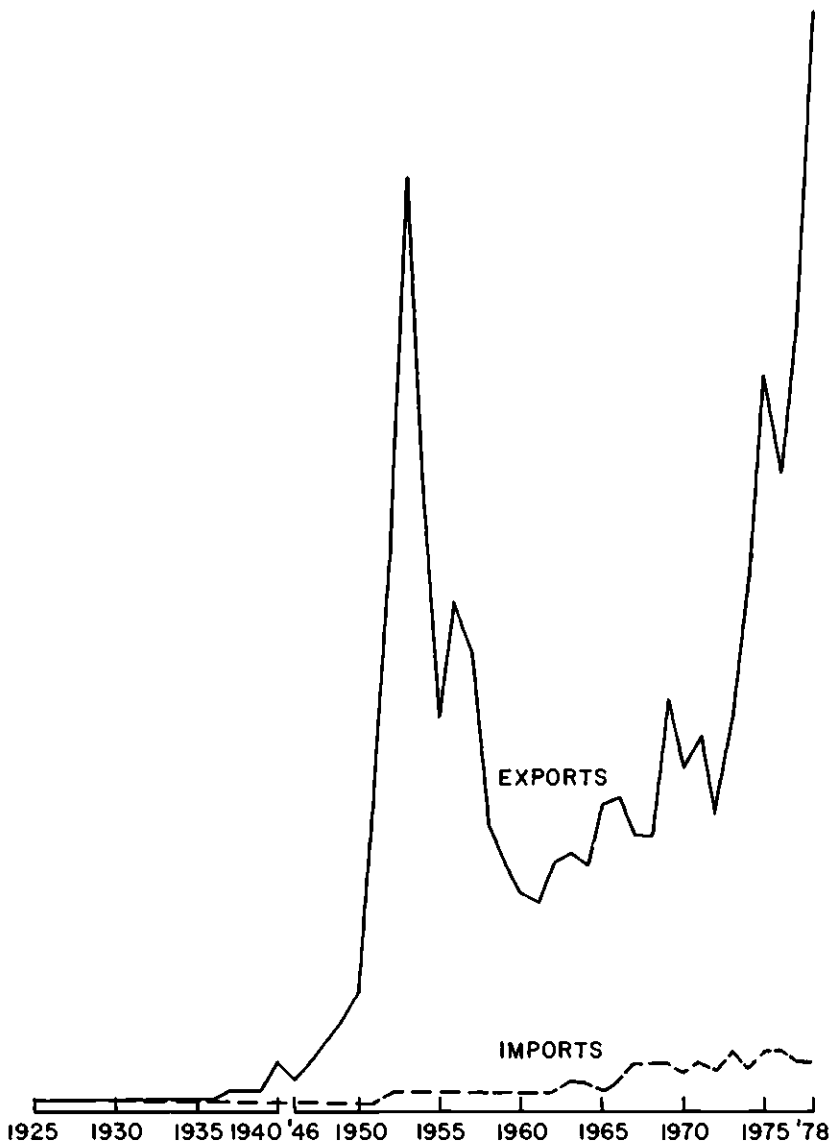
Fig. 3.8   United States exports and imports in military goods, 1925–78.

Table 3.22   United States Foreign Trade in Manufactured Goods, 1978, and Trade Patterns, 1946–78 (Dollar Amounts in Millions)

Commodity[a]	End-Use Code Number		1978 Trade			Trade Pattern, 1946–78
	Exports	Imports	Exports	Imports	Surplus	
Fuels and lubricants	11	10	4,499	42,915	−38,415	Surplus to 1957; deficit growing since 1958 with discontinuous jumps after 1973.
Nonagricultural industrial supplies and materials, except fuels	12 less 1273, 1275–77[b]	11, 1203, 121, 1220–22, 1225–26, 1230–31, 1300–01, 1311, 14, 15, 1603–05, 1610	26,433	34,892	−8,459	Postwar export bulge and resurplus 1946–47; deficit since 1950 except 1961 and 1975; rapid import growth since 1975.
Chemicals, excluding medicinal preparations	125	1225–26, 1230–31	10,362	3,765	6,597	Postwar export bulge; surplus throughout; growing rapidly since 1972.
Nonagricultural industrial supplies and materials less chemicals and fuels	12 less 125, 1273, 1275–77[b]	11, 1203, 121, 1220–22, 1300–01, 1311, 14, 15, 1603–05, 1610	16,071	31,126	−15,056	Postwar export bulge; deficit since 1948; growing sharply in 1977–78.
Basic material for iron and steel	120	1400–01	845	993	−147	Usually in deficit since 1946; no tendency for deficit to grow.
Iron and steel products excluding advanced manufactures	121	141, 150	2,028	7,590	−5,563	Postwar export bulge; deficit since 1962; grew rapidly in 1977–78.
Other primary metals, crude and semimanufactured	122	142–43, 1402–03	3,260	8,648	−5,388	Deficit throughout; growing in 1970s.

Table 3.22—continued

Commodity[a]	End-Use Code Number		1978 Trade			Trade Pattern, 1946–78
	Exports	Imports	Exports	Imports	Surplus	
Finished metal shapes and advanced manufactures	123	151, 152	1,534	1,494	40	Postwar export bulge; surplus to 1965, near balance 1966–73, surplus since.
Lumber, wood, pulp, and paper, including newsprint	124	11, 1300–01, 1311	4,804	8,001	−3,197	Deficit throughout. Rapid import growth 1976–78.
Industrial textile fibers, yarn, fabric	126	121, 1203	2,245	1,683	563	Postwar export bulge; surplus to 1962; deficit growing rapidly 1965–76, reversed in 1972–74.
Other nonagricultural industrial materials	127 less 1273, 1275–77[b]	1220–22, 1603–05, 1610	1,354	2,717	−1,363	Deficit throughout, growing since 1971.
Capital goods, less automotive[c]	2	2	45,952	19,181	26,771	Surplus throughout; growing rapidly to $26 billion in 1975; level since.
Electrical machinery	20	200	8,110	5,860	2,251	Surplus generally growing since 1946; exports growing rapidly since 1971.
Construction and contracting machinery less nonfarm tractors	210 less 2104	2011	4,429	2,333	2,095	Surplus growing to $4 billion in 1975; decreasing since.
Nonelectrical industrial machinery	211	2010, 2012	12,890	4,275	8,614	Surplus growing rapidly to 1975; level at $8–9 billion since.
Machine tools and metal working machinery	2112	2010	1,161	969	192	Surplus growing rapidly to 1975; declining since.
Industrial machinery less machine tools and metal working machinery	211 less 2112	2012	11,729	3,306	3,306	Surplus growing rapidly to 1975; level since; jump in exports 1972–75.
Agricultural, scientific, and business machinery less tractors	212 less 2120	2015–16, 2018	9,949	3,982	5,967	Surplus growing since 1959; rapid growth since export take-off in late 1960s.

Table 3.22—*continued*

Commodity[a]	End-Use Code Number		1978 Trade			Trade Pattern, 1946-78
	Exports	Imports	Exports	Imports	Surplus	
Agricultural machinery, except tractors	2121	2015	1,249	507	742	Balance to 1973; rapid growth of exports since 1974.
Business machinery	2122	2016	5,241	2,143	3,098	Little trade to 1960; surplus growing exponentially since.
Scientific and medical instruments and equipment and tools for photo and other service industries	2123, 2124	2018	3,459	1,332	2,126	Post-war export bulge and surplus throughout; growing rapidly since 1968.
Tractors, nonfarm, and farm and garden tractors and parts	2104, 2120	2013, 2014	2,497	929	1,568	Surplus throughout; rapid export growth 1972-75.
Civilian aircraft, engines, and parts	220	21	7,283	982	6,302	Little trade to 1958; rapid export growth since 1965.
Complete aircraft, civilian	2200	2100	3,616	231	3,385	Rapidly growing surplus since 1958.
Civilian aircraft, engines, and parts, except complete aircraft	220 less 2200	2101	3,667	751	2,916	Exports and surplus growing rapidly since 1967.
Automotive vehicles, parts and engines	3	3	14,460	24,314	−9,854	Postwar export bulge and surplus to 1967; deficit growing since 1968.
Passenger cars, new and used	300	300	3,691	13,674	−9,982	Deficit growing since 1957; exponential import growth since 1972.
Trucks, buses, and special-purpose vehicles	301	301	2,768	3,709	−939	Postwar export bulge, surplus to 1967; deficit since 1968 except after export jump in 1973-75.
Automotive parts	31	302	7,998	6,930	1,068	Surplus throughout, fluctuating in $0.5-1.7 billion range since 1955.
Consumer goods, less automotive	4	4	10,272	28,166	−17,894	Postwar export bulge and surplus; deficit since 1959; increasing exponentially.

Table 3.22—continued

Commodity[a]	End-Use Code Number		1978 Trade			Trade Pattern, 1946–78
	Exports	Imports	Exports	Imports	Surplus	
Consumer durables, manufactured	400	41	4,602	14,551	−9,949	Postwar export bulge and surplus to 1954; growing deficit since then.
Electrical household appliances and radios and so forth	4000, 4001	4103, 4104	1,685	4,705	−3,020	Surplus to 1961; rapid import growth and growing deficit since product cycle.
Nonelectric cooking and heating equipment	4002	4101, 4102	572	1,851	−1,278	Postwar export bulge, deficit growing steadily since 1951.
Clocks, watches, jewelry, and antiques	4003	4108, 4109	555	2,841	−2,286	Deficit growing exponentially throughout.
Toys and sporting goods	4004	4100, 4105, 4107	766	3,749	−2,893	Deficit growing exponentially since 1950.
Other consumer durables, manufactured	4005	4106, 410A	1,024	1,404	−379	Postwar export bulge; trade roughly balanced since 1950.
Consumer durables, nonmanufactured[a]	401	421	493	2,231	−1,739	Deficit growing steadily throughout.
Consumer nondurables—textiles, except rugs	410	400	883	5,357	−4,474	Postwar export bulge and surplus to 1954; imports and deficit growing rapidly since 1975.
Consumer nondurables, except textiles	411	400	4,294	5,892	−1,599	Postwar export bulge and surplus to 1968; deficit growing irregularly since 1970.
Footwear, luggage, apparel of leather, fur, rubber, plastic	4110	4010, 4011	196	3,215	−3,019	Postwar export bulge and surplus to 1954; deficit growing steadily since then.
Medicinal and pharmaceutical preparations	4113	4012	1,521	699	821	Surplus throughout, growing rapidly since 1967.
Other consumer nondurables	4111–12, 4114	4013	2,552	1,978	575	Surplus except 1970; rapid export growth since then.

See following page for sources.

of manufactured goods down to the level represented by four-digit end-use codes. Selected commodities serve as illustrations of four general points.

From Raw Inputs to Finished Products: Steel

Within a given industry, such as steel or petroleum, the United States trade balance tends to move from deficit to surplus along the industrial scale from raw materials to semifinished products to finished products. Iron and steel and finished metals provide a good example.

The trade balance in iron and steel is depicted in figure 3.9. In basic materials, there was a surplus in the 1930s, but almost continuous deficits have existed after 1946, widening since 1960. In iron and steel products, except advanced manufactures, a prewar surplus widened after the war, and then narrowed, giving way to balance in the early 1960s, but a deficit opened from 1963 onward. Finally, in unfinished metal shapes and advanced metal manufactures the United States still has a small surplus after a few years of deficit in the period 1966–73.[5]

This description makes clear that the United States has become basically a net importer of steel with basic inputs and semifinished products in deficit and a small surplus in advanced products by 1978. While the United States has steadily lost its comparative advantage in iron and steel in general, the figure also suggests that, the more advanced the stage of production, the longer the United States trade advantage is maintained.[6]

Textiles: Postwar Export Bulge and 1970s Rationalization

In several commodities the United States characteristically had a balanced or deficit trade position before World War II, enjoyed a substantial surplus with a major increase in exports just after the war, and then

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Sources: OBE 1970, table 5 (exports) and table 6 (imports); BEA 1977, table 2.2, and data tape provided by OBE. OBE's criterion for splitting off end-use categories below the one-digit level is generally the volume of trade in a category. For this reason, export and import categories do not generally match one for one. The development of the trade balances by commodity, described in the table, followed the export end-use breakdown, and matched imports to exports as closely as possible. Thus the first two columns of the table give the export end-use description and code number, and the third column gives the import end-use code numbers covering the same commodity as the second column's export end-use code number.

[a]Commodity descriptions are for export end-use code numbers, as described in OBE 1970.

[b]Groups 1273 and 1275–77 are subgroups of other nonagricultural industrial commodities that are a heterogeneous group and very difficult to match to an import category. In 1968, these groups accounted for $686 million of exports.

[c]Total includes other transportation equipment, not shown separately below.

[d]This nonmanufactured category is included in the table because of its relative importance in foreign trade.

lost it in a growing deficit after 1950. Also, in several commodities in the 1970s we can see the effects of international reallocation of the location of production, with labor-intensive stages of manufacturing moving away from the United States. A good example of these patterns is presented by textiles, both industrial and consumer textiles, as reflected in the trade balances shown in figure 3.10.
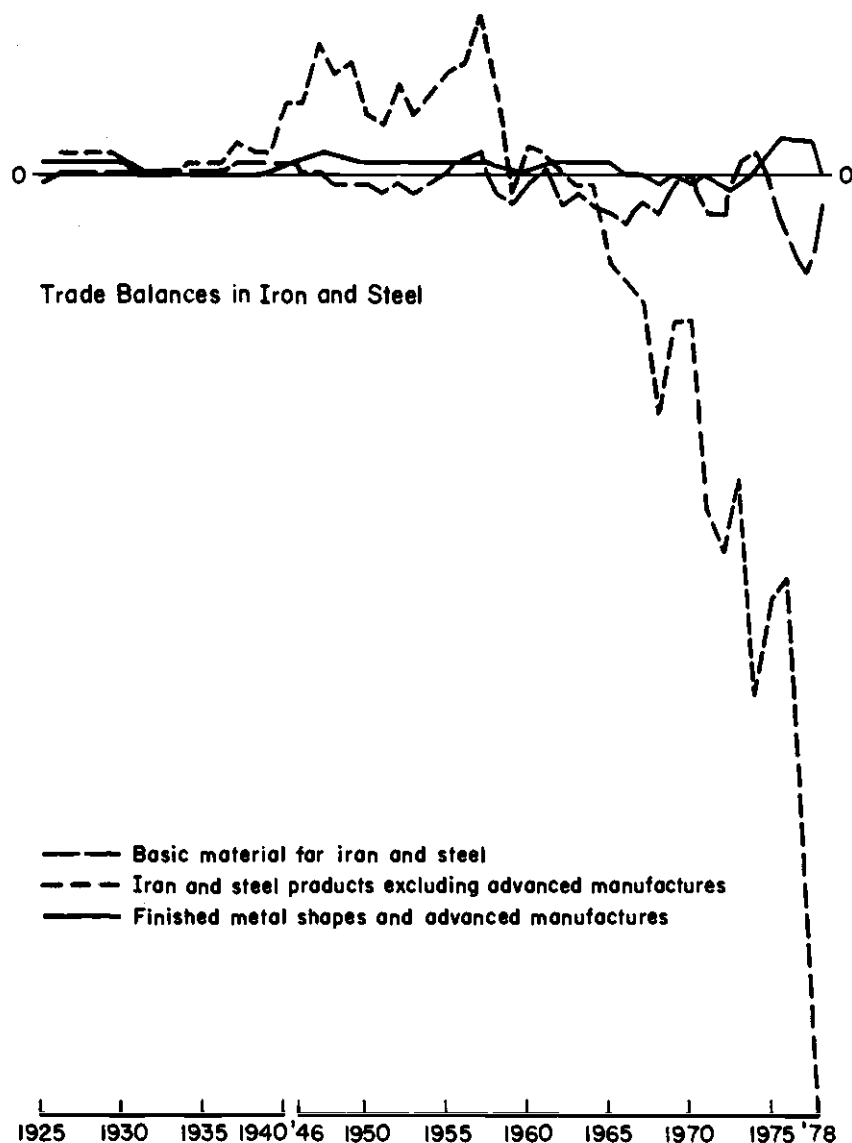

Trade Balances in Iron and Steel

——— Basic material for iron and steel
— — — Iron and steel products excluding advanced manufactures
——— Finished metal shapes and advanced manufactures

1925 1930 1935 1940 '46 1950 1955 1960 1965 1970 1975 '78

Fig. 3.9   Trade balances in iron and steel, 1925–78.

The postwar export bulge in textiles disappeared by 1949, leaving exports essentially flat at $500 million to $600 million in industrial textiles and $150 million to $200 million in consumer textiles from 1950 on, with little growth in the latter in the 1960s. Imports, however, grew in both cases. Consumer textile imports rose slowly from 1947 through 1954 and increasingly rapidly after 1954, while industrial textile im-

Trade Balances in Textiles

— — — Industrial textiles

————— Consumer textiles

1925   1930   1935 1940 '46 1950   1955   1960   1965   1970   1975 '78
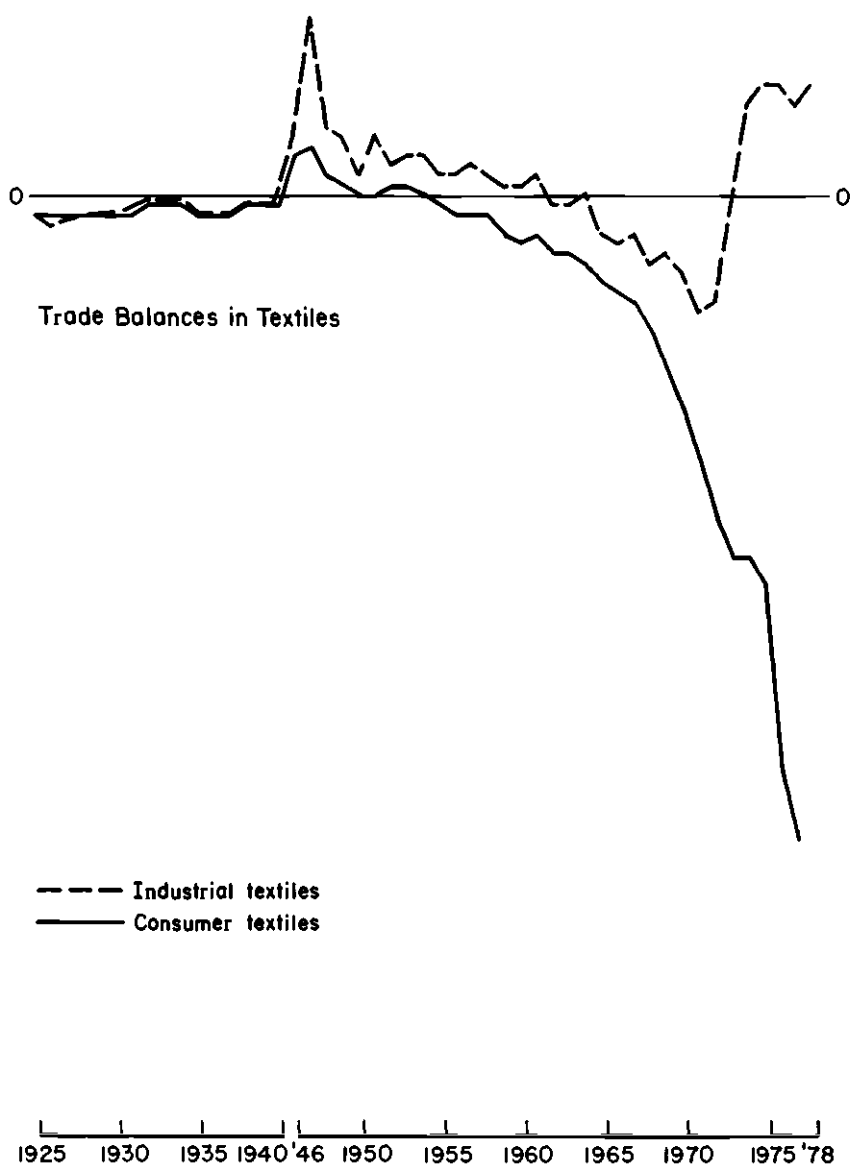
Fig. 3.10   Trade balances in textiles, 1925–78.

ports grew irregularly from 1949 to 1961 and extremely rapidly after that. The United States became a net importer of consumer textiles in 1955 and of industrial textiles in 1963.[7]

Since 1972, imports of consumer textiles have taken another significant jump, and trade in industrial textiles has moved back into surplus. At the consumer end, imports rose from $1.9 billion in 1972 to $5.4 billion in 1978, with the deficit moving from $1.2 billion to $3.6 billion. At the industrial end, however, exports rose from $0.9 billion in 1972 to $2.2 billion in 1978, while the balance moved from a $0.5 billion deficit to a $0.6 billion surplus. The United States is now an exporter of the industrial good and an importer of the consumer good.[8]

The Product Cycle: Household Appliances

Disaggregation to the four-digit level makes it possible to determine the pervasiveness of the product cycle phenomenon. In his seminal paper, Raymond Vernon (1966) suggested that trade in manufactured goods typically follows a cycle in which the United States is first a net exporter as a good is introduced and "shaken down," and then becomes a net importer as production of the good becomes standardized and moves abroad to minimize production costs. Since the product cycle involves patterns of trade in individual commodities, the likelihood that it can be observed increases with disaggregation of the data.

Household appliances are a good illustration of the product cycle (see fig. 3.11). After World War II there was a bulge in exports in 1946–48, and then growth from $109 million in 1949 to $261 million in 1956. Export growth slowed after 1956, and imports accelerated beginning in 1959. By 1962 the product cycle had reached the net import stage.[9]

The product cycle is, of course, a microeconomic phenomenon, observable at the four-digit level at best. That it *can* be observed at that level of aggregation suggests, however, that it is a fairly widespread phenomenon and should be taken into account in trade projections. At any point in time, commodities in which a substantial trade surplus exists may be in the maturing phase of the cycle with shrinking surpluses, while products just entering it may be at trade levels too small to seem significant. Thus the existence of the product cycle may tend to bias trade projections made on a commodity-by-commodity basis in a pessimistic direction (in the sense of small surpluses).

The 1970s Boom in Capital Goods Exports

In the aggregate data of figure 3.5, we saw that capital goods exports made a discontinuous jump from 1972 to 1975. The jump was spread across all the subcategories of capital goods except agricultural, scientific, and business machinery, where steady rapid growth continued. The increase in three subcategories is shown in table 3.23. There we see

that the developing countries and OPEC took the biggest fraction of the increase, followed by Western Europe and Canada. The change in capital goods exports may point toward future growth as demand continues to rise in the LDCs and OPEC.

Consistency within Aggregates: Capital and Consumer Goods

Finally, the disaggregated data on trade in capital goods and in consumer goods exhibit strikingly similar patterns within the aggregate categories. Throughout the period 1946–78, in each category of capital goods, the United States typically has had a surplus, which has grown substantially since the early 1950s. The only exception is agricultural machinery. In the consumer categories, the United States typically had a deficit before the war and a surplus just after it. The surplus then shrank to balance in the middle or later 1950s and a growing deficit developed in the 1960s. Thus the patterns of trade are similar within
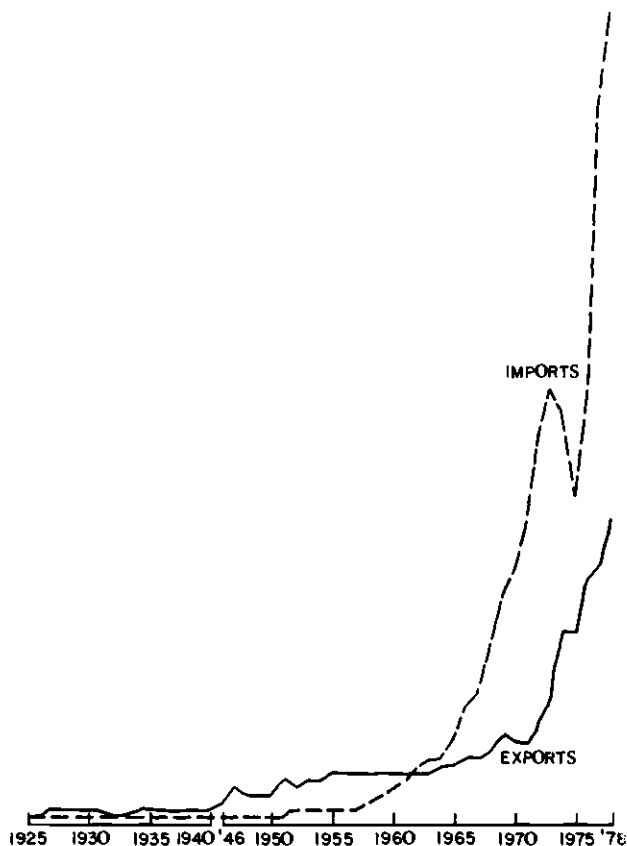
Fig. 3.11   United States exports and imports of household appliances, 1925–78.

Table 3.23   **Change in Exports of Selected Capital Goods, 1972–75 ($ Millions)**

Area	Electrical Machinery	Construction Machinery	Nonelectrical Industrial Machinery
Western Europe	668	599	1,626
Eastern Europe	66	80	389
Canada	283	357	922
Japan	100	61	180
Latin America	624	487	1,266
Australia, New Zealand, South Africa	110	194	333
Other Asia and Africa	1,099	1,208	1,472
Total	2,950	2,446	6,188

end-use aggregates and dissimilar across them, confirming the usefulness of the OBE categorization.

Conclusions from the Long-Term Data

From this survey of the long-term data, it appears that the United States has a growing comparative trade advantage in capital goods and chemicals but is at a disadvantage in consumer goods and other industrial supplies and materials. In consumer goods, the United States typically had a deficit from 1925 to 1938, and after a postwar surplus, returned to a deficit position starting in 1959. In some industrial supplies and materials—fuels and lubricants, basic materials for iron and steel, and their products—the United States was a net exporter before World War II and became a net importer thereafter.

Part of the movement from surplus to deficit in consumer goods and nonchemical industrial supplies and materials since the late 1940s has been due to the loss of a temporary advantage after World War II. This seems to be the case in consumer goods and textiles, although the trade deficit continued to increase even after the postwar advantage disappeared in the mid-1950s. In these areas, as well as in steel and petroleum, the loss of the postwar advantage merely reinforced the more fundamental loss in competitive advantage.

3.3.3 Sources of the United States Comparative Advantage in Manufactured Goods

As we have seen in sections 3.3.1 and 3.3.2, the United States has been a net exporter of capital goods and chemicals since World War II, with surpluses increasing rapidly since the late 1960s. In nonfuel, nonagricultural industrial supplies and materials the United States has likewise been a net importer since World War II. After a post-World War II bulge in exports of consumer goods, by 1960 the United States had

become a net importer in that category, with deficits growing in the 1970s. In its trade in automotive products, the postwar surplus turned to deficit in the late 1960s. Within each of these categories there are complications and exceptions to the general trend. Notable among these is the pattern caused by international rationalization of the location of production, a phenomenon appearing in the trade data only since 1970. This can be seen in the growing export of auto parts and import of complete autos or in the export of industrial textiles and import of consumer textiles, for example. But the basic pattern of trade in the period beginning in 1970 is clear; the United States exports chemicals and capital goods, and imports consumer goods, automobiles, and nonfuel, non-agricultural industrial supplies and materials.

Presumably this very stable pattern of trade results from underlying relative advantages the United States has in chemicals and capital goods and disadvantages in consumer goods, automobiles, and other industrial supplies and materials. If the trade pattern showed large random fluctuations, we might not search for an underlying pattern of sources of comparative advantage. But with a stable pattern of trade, we look for a stable underlying basis for it.

In the immediate post-World War II period, trade analysts focused on a two-factor, capital and labor, model of comparative advantage, assuming that the United States trade pattern would reflect a heavy endowment of capital. This assumption was refuted by Leontief (1953). Gradually, after fifteen years of confusion and further analysis, a new consensus has appeared, which focuses on the role of human capital as the principal source of United States comparative advantage.

Capital Labor and Human Capital

The classical factor-endowments theory of international trade, generally associated with Heckscher and Ohlin, predicts that a country will export goods whose production is intensive in the use of primary input factors with which it is relatively well endowed, and import goods whose production intensively uses factors in which it is relatively poor. In the usual two-goods, two-factors, two-countries models, this dictum means simply that a country better endowed with capital than with labor should export goods whose production is capital-intensive and import goods that are labor-intensive. Since the United States has a high ratio of capital per employee, this proposition was generally taken to mean that its exports would be more capital-intensive than its imports.

This assumption was refuted by Leontief in 1953, when, using the 1947 input-output coefficients, he showed that United States exports are less capital-intensive in production than are the goods it imports. Leontief's findings were subsequently confirmed by Leontief (1956), using 1951 data, and by Hufbauer (1970) and Baldwin (1971), who used

the 1963 input-output coefficients. Hufbauer showed that they also hold for manufactured goods separately.

Leontief suggested that his findings were due to higher labor productivity in the United States than in its trading partners. In support of this conjecture, in his 1956 paper he showed that production of United States exports employed relatively more skilled labor than did production of import-competing goods. At about the same time, Irving Kravis (1956) published a paper showing that leading United States export industries paid, on average, higher wages than leading import-competing industries. Both Leontief's conjecture and Kravis's findings point to the importance of a third factor of production in explaining United States trade patterns. If the high productivity of United States workers were due to a relatively large endowment of capital (physical capital, that is), then United States net exports should, by the factor proportions theory, be capital-intensive. But if there were a third factor involved, namely human capital, then a relatively high endowment of human capital relative to physical capital could explain both Leontief's and Kravis's results within a three-factor H-O model. This was noted by Gary Becker (1964).

A consensus was developing by the mid-1960s that an important explanation of the Leontief paradox was that the usual two-factor version of the Heckscher-Ohlin model was too simple. An analysis of trade in manufactured goods must be couched in terms of at least three inputs: physical capital, human capital, and raw (or uneducated) labor. In this case, the United States, because of its higher levels of education and training, may be relatively better endowed with human capital than with physical capital. In a two-factor model this situation would lead to United States exports of labor-intensive goods; a three-factor model might reveal that the United States exports goods that embody a high amount of human capital per man. The role of human capital in comparative advantage and trade was developed in a fundamental paper by Kenen (1965).

Since 1965, work on the human capital approach to Leontief's paradox has followed two tracks. One assumes that, in a cross-section, wage differentials reflect differences in human capital, following the spirit of Kenen's article. Thus Bharadwaj and Bhagwati (1967) as well as Hufbauer (1970), find a role for wage differentials as representing human capital in explaining trade. The other approach attempts to measure differences in human capital across industries by proportions of employees in various skill classifications. This is the route taken recently by Baldwin (1971), and earlier by Keesing (1966).

The first approach should be preferable if human capital is, in fact, reflected in earned income. If human capital is correctly valued, and this value accrues as earned income, wage differentials should fully capture the effects on productivity of differences in human capital per person.

The presence of, say, a high proportion of scientists in an industry should make that a high-wage industry, with the capitalized value of the excess of that wage rate over the wage of an uneducated person measuring the human capital input. In this event, the wage, or human capital, differential should capture the contribution of the input of human capital to production, or to trade advantage. Only if the scientists contribute something extra, in excess of their wage, to production should a "skill ratio" of scientists to total employees add to the ability of the human capital measure to explain variations in output or trade advantage.

Thus if wage rates accurately reflect differences in human capital, the capitalized value of the average wage above the wage of raw labor can serve as a measure of human capital in explaining net exports. If, in addition, a skill ratio is significant, it reveals that the skilled personnel are, in a sense, contributing more to comparative advantage than their market-determined wage indicates.

By the mid-1970s, the human capital explanation of the basis for United States comparative advantage was broadly accepted in the economics literature, as reflected in the paper by Bertil Ohlin (1977) and the comments thereon. A brief summary of one set of empirical results that supports this view follows.[10]

Empirical Estimates

In a paper that studied the composition of inputs into United States trade in manufactured goods, Branson and Monoyios (1977) found that in its trade, the United States exports the services of human capital and, marginally, physical capital, and imports the services of unskilled labor. For 1963 and 1967, they developed data matching the inputs of physical capital (K), human capital (H), and labor (L) in manufacturing industries to trade in commodities produced by these industries. They then performed cross-section regressions of net exports of commodities on the inputs of the industries. A representative sample of their results is shown in table 3.24.[11] The first column in the table identifies the dependent variables net exports (NX), exports (X), or imports (M). The next three columns show the estimated coefficients of K, H, L, and the constant terms of the regressions in that order. The numbers in parentheses under the coefficients are the t-ratios. Those marked with one asterisk identify coefficients that are significantly different from zero at the 5 percent confidence level, while those with two asterisks are significant at both the 5 percent and 1 percent levels. In the sixth column the multiple correlation coefficient R^2 for the regression is given and in the last column, the identifying number for the equation.

The simple r^2 in the sample data between NX and H is equal to 0.32. In equation 2–1 in table 3.24 both K and H are introduced as independent variables. While the coefficient of H is positive and highly signifi-

Table 3.24   **Estimates of Regression Equations at the Three-Digit SITC Level**

Dependent Variables	Independent Variables				R^2	Equation Number
	K	H	L	C		
NX (1963)	−0.04	0.03		−2.29	0.34**	2–1
	(1.63)	(5.31)**		(0.08)		
NX (1963)	−0.05	0.04	−0.67	18.54	0.45**	2–2
	(2.18)*	(6.87)**	(3.99)**	(0.72)		
X (1963)	0.01	0.03	−0.44	37.56	0.53**	2–3
	(0.61)	(5.39)**	(2.58)*	(1.45)		
M (1963)	0.06	−0.01	0.23	19.02	0.40**	2–4
	(5.58)**	(2.88)**	(2.77)**	(1.48)		
NX (1967)	−0.04	0.04	−0.69	19.05	0.34**	2–5
	(2.33)*	(6.02)**	(3.21)**	(0.53)		

cant, that of K is negative and not even marginally significant; the R^2 for regression stays practically unchanged from 0.32 to 0.34. When L is entered into the regression in equation 2–2 the size and sign of the co-efficients of K and H are not affected while their significance is increased slightly so that K becomes marginally significant. The coefficient of L is negative and significant, and R^2 rises from 0.34 to 0.45.

Equation 2–3 of the table shows that industries with high gross exports are human capital intensive in production, other things being equal. Physical capital input is not significant. On the other hand, equation 2–4 indicates that the United States imports goods whose domestic production intensively uses physical capital and labor relative to human capital. The signs of the coefficients are the reverse of 1–2 and all three coefficients are significant although the fit of the regression is not as good as when X is the dependent variable.

The Branson and Monoyios results confirm that the United States exports human capital and imports unskilled labor in its trade in manufactured goods, at least in 1963–67. Since sections 3.3.1 and 3.3.2 showed that the mid-1960s pattern of trade became even clearer in the 1970s, there is no reason to expect that the Branson-Monoyios results do not still hold. This conclusion is supported by the Stern and Maskus (1979) study that considers the 1958–76 time-series data.

Summary

Combining the evidence on trends in United States trade in sections 3.3.1 and 3.3.2 with the results on United States comparative advantage in this section, we obtain the following broad picture of United States trade patterns. The United States exports chemicals and capital goods and imports consumer goods, nonfood, nonfuel industrial supplies and materials, and automobiles. In this exchange the United States exports

the services of human capital—i.e., skilled or educated labor—and perhaps physical capital and imports the services of unskilled labor.

Thus human capital and unskilled labor play a clear role in the formation of United States comparative advantage. Good examples are aircraft on the export side, which are extremely human capital intensive but not very intensive in physical capital, and consumer textiles on the import side. Physical capital plays a more neutral role, combining relatively more with human capital in exports and unskilled labor in imports. Good examples may be chemicals on the export side and consumer electronics on the import side.

In the ten years or so after World War II, the United States had a false boom in exports of goods that are relatively labor intensive in production. But after the mid-1950s comparative advantage reasserted itself with the growth of industrial capacity in Europe and Japan. The United States trade pattern moved back to a base in comparative advantage discussed just above. In the 1970s, growth in industrial capacity in the LDCs seems to be generally along lines of their comparative advantage. This is strengthening the pattern of United States trade in a world of increasing specialization and interdependence.

3.4   Trends in Long-Term Investment

During the period since World War II there has been significant growth in United States long-term investment abroad and foreign long-term investment in the United States. Both United States long-term claims on foreigners and liabilitities to foreigners have grown at an annual rate of about 9 percent during the period 1950–77. Within this balanced growth of the aggregate long-term investment position there have been significant changes in composition in terms of type and location of United States foreign investment and type and geographical source of foreign investment in the United States. The following section presents the data on the long-term United States investment position compiled for the years 1950–77.

3.4.1   United States Aggregate Investment Position

The aggregate United States long-term foreign investment position is summarized in table 3.25. There we see that United States private plus government long-term claims have grown from $28.3 billion in 1950 to $264.4 billion in 1977, while long-term liabilities have risen from $8 billion to $94 billion. The United States net long-term position was $170.5 billion in 1977. Over the twenty-seven-year period for which we have data, United States total long-term claims have grown at an annual rate of 8.3 percent (table 3.25, cols. 1 and 2) and United States liabili-

Table 3.25   United States Long-Term Assets and Liabilities, 1950–77
($ Billions)

Year	U.S. Private Long-Term Assets (1)	U.S. Government Long-Term Credits (2)	U.S. Long-Term Liabilities (3)	Balance (1)+(2)−(3)
1950	17.5	10.8	8.0	20.3
1955	26.8	12.4	13.4	25.8
1960	44.4	14.1	18.4	40.1
1965	71.0	20.3	26.4	64.9
1970	105.0	29.6	44.7	89.9
1975	174.4	39.8	80.7	133.1
1977	216.6	47.8	93.9	170.5

ties have grown at the annual rate of 9.1 percent. The distribution of United States claims has shifted from government toward private. In 1950 private claims were 62 percent of the total; by 1977 this ratio had risen to 82 percent.

3.4.2   Distribution and Growth of United States Long-Term Assets and Liabilities

United States Assets

Table 3.26 shows the breakdown of the United States long-term private asset position from table 3.25 into direct investment, investment in foreign bonds and stocks, and other long-term investment. Roughly, the definitional division between direct investment and stock ownership

Table 3.26   United States Private Long-Term Foreign Assets ($ Billions)

Year	Total	Direct	Foreign Bonds	Foreign Stocks	Other
1950	17.5	11.8	3.2	1.2	1.4
1955	26.7	19.4	3.0	2.4	1.9
1960	44.4	31.9	5.5	4.0	3.1
1965	71.0	49.5	10.2	5.0	6.4
1970	105.0	78.2	13.2	6.4	7.2
1971	114.5	83.0	15.9	7.6	8.1
1972	127.8	90.5	17.1	10.5	9.7
1973	139.8	101.3	17.4	10.0	11.1
1974	151.0	110.1	19.2	9.0	12.7
1975	174.4	124.0	25.3	9.6	15.4
1976	198.3	136.4	34.7	9.5	17.8
1977	216.6	148.8	39.2	10.1	18.5

is 10 percent control; once that level of ownership is reached, all further investment in that firm is direct.

Growth rates of United States foreign assets are summarized in table 3.27. There we see that the United States private long-term asset position has grown in a very balanced way since 1950. The sole exception is slower-than-average growth in ownership of foreign stock at an annual rate of 7.8 percent. In table 3.26 we see that stock-ownership peaked in 1972 at $10.5 billion; the growth rate for 1950–72 was 10 percent.

United States direct investment abroad has grown at a remarkably steady rate. During the 1950s the direct investment position grew at a 10 percent rate; during the 1960s the growth rate was 9 percent; and from 1970 to 1977 it was 9.2 percent. Thus long-term United States investment abroad has proceeded at a very stable rate of 9–10 percent throughout the entire, sometimes turbulent, period.

United States Liabilities

The disaggregation of United States long-term liabilities to foreigners is shown in table 3.28, and the growth rate summary is given in table 3.29. Within an aggregate growth rate of 9.1 percent over the period, foreign investment in United States private and government bonds grew by 15.9 percent, and direct investment grew by 8.5 percent.

Foreign investment in United States bonds started from the low base of $181 million in 1950, and grew with two big jumps, in 1955–60 and 1965–70. From 1965 to 1971 foreign bond ownership rose tenfold to nearly $10 billion. Direct investment has gone through a growth cycle, beginning at 8 percent in 1950–55, falling to 5 percent in 1960–65, and rising to 13.5 percent per year in the 1970s. Foreign investment in United States corporate stock has grown at an annual average rate of 9.7 percent, fluctuating between a high of 16.2 percent in 1950–55 and a low of 4.9 percent in 1965–70.

Table 3.27   Average Annual Growth Rates of United States Private Long-Term Foreign Assets (in Percentages)

Item	1950–77	1950–55	1955–60	1960–65	1965–70	1970–75	1975–77
Long-Term Private, Total	9.3	5.5	10.2	9.4	7.8	10.2	10.8
Direct Investment	9.4	10.0	9.9	8.8	9.2	9.2	9.1
Foreign Bonds	9.3	–0.7	11.9	12.2	5.2	13.1	21.9
Foreign Corporate Stocks	7.8	14.6	9.8	4.7	4.9	8.0	2.7
Other	9.7	6.3	9.9	14.5	2.4	15.3	9.1

| Table 3.28 | | United States Long-Term Liabilities to Foreigners ($ Billions) | | | |

Year	Total	Direct	Bonds	Corporate Stock	Other
1950	8.0	3.4	0.2	2.9	1.5
1955	13.4	5.1	0.3	6.6	1.5
1960	18.4	6.9	0.6	9.3	1.6
1965	26.4	8.8	0.9	14.6	2.1
1970	44.8	13.3	6.9	18.7	5.9
1971	50.1	13.9	8.6	21.4	6.1
1972	60.8	14.9	10.9	27.8	7.1
1973	74.3	20.6	12.6	33.5	7.7
1974	67.6	25.1	10.7	24.2	7.6
1975	80.7	27.7	10.0	35.3	7.7
1976	92.6	30.8	12.0	42.9	7.0
1977	93.9	34.1	13.4	39.7	6.7

Source: Survey of Current Business.

| Table 3.29 | | Average Annual Growth Rates of Foreign Long-Term Assets in the United States (in Percentages) | | | | | |

Item	1950–77	1950–55	1955–60	1960–65	1965–70	1970–75	1975–77
Long-Term Total	9.1	10.3	6.3	7.2	10.6	11.8	7.6
Direct Investment	8.5	8.0	6.2	4.8	8.2	14.7	10.4
Bonds	15.9	7.2	18.4	6.0	41.2	7.5	5.7
Corporate Stock	9.7	16.2	6.9	9.0	4.9	12.7	5.9
Other	5.6	.0	0.8	6.0	20.8	5.2	−6.7

3.4.3 United States Investment Abroad

The data on United States direct investment abroad can be disaggregated by industry and area. The geographic breakdown is Europe, Canada, Japan, Latin America, and other, while the industry breakdown is mining and smelting, petroleum, manufacturing, and other. The disaggregated data on direct investment are given in table 3.30 for the total, and tables 3.31 through 3.35 for the geographic areas. The shares of United States direct investment on each geographical area are given in table 3.36.

Turning first to the industry disaggregation of total direct investment, we see a steady growth of the direct investment position throughout the

Table 3.30   United States Direct Investment, Total
                    ($ Billions)

Year	Mining and Smelting	Petroleum	Manu-facturing	Other
1950	1.1	3.4	3.8	3.4
1955	2.2	5.9	6.6	4.7
1960	3.0	10.9	11.2	7.7
1965	3.8	15.3	19.3	10.9
1970	6.2	21.7	32.3	18.0
1971	6.7	24.2	35.6	19.7
1972	7.1	26.3	39.7	21.2
1973	6.0	27.3	44.4	26.0
1974	6.1	30.2	50.9	31.3
1975	6.5	26.2	55.9	35.6
1976	7.1	29.7	61.1	39.4
1977	7.1	30.9	65.6	45.2

Source: *Survey of Current Business.*

Table 3.31   United States Direct Investment in
                    Europe ($ Billions)

Year	Mining and Smelting	Petroleum	Manu-facturing	Other
1950	0.0	0.4	0.9	0.3
1955	0.0	0.8	1.7	0.5
1960	0.0	1.7	3.8	1.1
1965	0.0	3.4	7.6	2.9
1970	0.0	5.5	13.7	5.2
1971	0.0	6.2	15.6	5.8
1972	0.0	6.9	17.6	5.9
1973	0.0	8.5	20.8	8.9
1974	0.0	10.0	23.8	10.7
1975	0.0	11.4	26.0	12.1
1976	0.0	13.4	28.7	13.7
1977	0.0	13.9	31.4	15.2

Source: *Survey of Current Business.*

Table 3.32   **United States Direct Investment in Canada ($ Billions)**

Year	Mining and Smelting	Petroleum	Manu-facturing	Other
1950	0.3	0.4	1.9	0.9
1955	0.9	1.4	3.1	1.4
1960	1.3	2.7	4.8	2.4
1965	1.8	3.4	6.9	3.2
1970	3.0	4.8	10.1	4.9
1971	3.2	5.1	10.6	5.1
1972	3.5	5.3	11.6	5.4
1973	2.7	5.3	11.8	5.8
1974	2.8	5.7	13.4	6.4
1975	3.1	6.2	14.7	7.1
1976	3.2	7.2	16.0	7.6
1977	3.2	7.7	16.7	7.8

Source: Survey of Current Business.

Table 3.33   **United States Direct Investment in Japan ($ Billions)**

Year	Mining and Smelting	Petroleum	Manu-facturing	Other
1950	0.0	0.0	0.0	0.0
1955	0.0	0.0	0.0	0.1
1960	0.0	0.0	0.0	0.2
1965	0.0	0.0	0.3	0.4
1970	0.0	0.5	0.7	0.2
1971	0.0	0.6	1.0	0.2
1972	0.0	0.9	1.2	0.3
1973	0.0	0.9	1.4	0.4
1974	0.0	1.4	1.5	0.4
1975	0.0	1.3	1.6	0.5
1976	0.0	1.6	1.7	0.5
1977	0.0	1.5	1.9	0.6

Source: Survey of Current Business.

Table 3.34 **United States Direct Investment in Latin America ($ Billions)**

Year	Mining and Smelting	Petroleum	Manu-facturing	Other
1950	0.6	1.2	0.8	1.8
1955	1.0	1.6	1.4	2.2
1960	1.2	2.9	1.6	2.7
1965	1.1	3.0	2.7	2.5
1970	2.1	3.9	4.6	4.1
1971	2.1	4.2	5.0	4.5
1972	2.1	4.3	5.6	4.8
1973	1.7	3.0	6.5	5.3
1974	1.4	3.6	7.5	7.1
1975	1.5	3.3	8.6	8.7
1976	1.6	2.9	9.2	9.8
1977	1.6	3.4	10.0	12.8

Source: Survey of Current Business.

Table 3.35 **United States Direct Investment in Other Countries ($ Billions)**

Year	Mining and Smelting	Petroleum	Manu-facturing	Other
1950	0.1	1.3	0.2	0.3
1955	0.3	2.2	0.5	0.5
1960	0.5	3.7	0.8	1.3
1965	0.9	5.5	1.8	1.9
1970	1.0	7.0	3.1	3.5
1971	1.3	8.0	3.5	4.0
1972	1.5	8.9	3.7	4.9
1973	1.6	9.6	4.0	5.5
1974	1.8	9.6	4.7	6.6
1975	2.0	3.9	5.1	7.2
1976	2.2	4.6	5.4	7.8
1977	2.2	4.3	5.7	8.7

Source: Survey of Current Business.

Table 3.36		Distribution of United States Direct Investment by Area (in Percentages)			
Year	Europe	Canada	Japan	Latin America	Other
1950	.15	.30	.00	.38	.17
1955	.15	.35	.01	.31	.18
1960	.20	.34	.01	.26	.19
1965	.28	.31	.01	.19	.20
1970	.31	.29	.02	.19	.19
1971	.32	.28	.02	.18	.19
1972	.32	.27	.03	.18	.20
1973	.37	.25	.03	.16	.20
1974	.38	.24	.03	.16	.19
1975	.40	.25	.03	.18	.15
1976	.41	.25	.03	.17	.15
1977	.41	.24	.03	.19	.14

period at 9.4 percent per year. There was a slowdown of growth in assets in mining and smelting and petroleum after 1970, steady growth in manufacturing at about 10 percent per year over the entire period, and an acceleration in other investments after 1970. Manufacturing investment grew from 32 percent of the total in 1950 to 44 percent in 1977.

United States direct investment in Europe grew at a 13 percent annual rate, 1950–77. Mining and smelting investment in Europe was nil, and the three other categories show balanced growth, each increasing at a 13–14 percent annual rate. In table 3.36 we see that Europe's share of total United States direct investment rose from 15 percent in 1950 to 41 percent in 1977.

In Canada, United States investment in petroleum had the highest growth rate, 10.8 percent over the entire period. United States investment in Japan grew at 11.9 percent from a tiny base in 1950. By 1977 the Japanese share of United States direct investment was still a miniscule 2.7 percent. The United States direct investment position in Latin America grew at an annual rate of 6.8 percent from 1950 to 1977. Investment in Latin America was concentrated in manufacturing, with a 9.4 percent growth rate, and with a 7.3 percent growth rate in other. In the share table, we see a cycle in the Latin American position. It fell from 38 percent in 1950 to a low of 16 percent in 1973, and then began to rise to 18.6 percent by 1977.

To summarize, the United States direct investment position grew remarkably steadily during the period 1950–77. There was a movement

away from resource-based investment, except in Canada, toward manu-
facturing and other investment. The major growth area remains Europe,
whose share of the total rose from 31 percent in 1970 to 41 percent in
1977. After a long period of relative decline, United States investment
in Latin America also shows acceleration since 1973 or so.

3.4.4   Foreign Direct Investment in the United States

The foreign direct investment position in the United States can be
disaggregated geographically by investment from Europe, Canada, Ja-
pan, and other, and by industry into petroleum, manufacturing, insur-
ance and finance, and other. The disaggregated data by industry are
given for total foreign direct investment in the United States in table
3.37, and for each area in tables 3.38 through 3.41. The distribution
of shares by geographic source is shown in table 3.42.

Total foreign direct investment in the United States has risen from
$3.4 billion in 1950 to $34.1 billion in 1977. This is 23 percent as large
as United States direct investment abroad. The growth rate of the direct
foreign investment position in the United States doubled in the 1970s
compared to the previous two decades: 7.1 percent per year in the
1950s, 6.5 percent in the 1960s, and 13.5 percent in the 1970s. The
distribution of the total across industries has moved from insurance and
finance towards the other three categories. The petroleum share rose
from 12 to 19 percent, manufacturing from 34 to 40 percent, and other
from 23 to 34 percent, while the share of insurance and finance fell
from 31 to 7 percent.

In the share distribution of table 3.42, we see Europe fairly steady at
65 to 70 percent over the period, Canada falling from 30 to 18 percent,
Japan growing from nil as late as 1973 to 5 percent in 1977, and other
growing from 4 to 11 percent. As foreign direct investment in the United
States accelerated in the 1970s, the Canadian and European shares fell,
and the Japanese and other shares rose. Table 3.43 shows the distribu-
tion of the increase in foreign investment from 1970 to 1977. There we
see that even as the Japanese and other shares rose, the bulk of the in-
crease in investment position came from Europe. The rising shares of
Japan and other began from a very small base.

To summarize, foreign direct investment in the United States rose in
the 1970s relative to the trend of 6–7 percent growth of the 1950–70
period. The distribution moved away from finance toward manufactur-
ing, petroleum, and other, essentially from finance toward nonfinancial
firms. While foreign investment in the United States is only a quarter of
United States investment abroad, we may be seeing the beginning of the
internationalization of ownership of United States industry.

Table 3.37 **Foreign Direct Investment in the United States ($ Billions)**

Year	Total	Petroleum	Manu-facturing	Insurance and Finance	Other
1950	3.4	0.4	1.1	1.1	0.8
1955	5.1	0.9	1.8	1.5	1.0
1960	6.9	1.2	2.6	1.8	1.3
1965	8.8	1.7	3.5	2.2	1.4
1970	13.3	3.0	6.1	2.3	1.9
1971	13.9	3.1	6.7	2.6	1.5
1972	14.9	3.3	7.3	2.9	1.4
1973	20.6	4.8	8.2	1.9	5.6
1974	25.1	5.6	10.4	1.3	7.8
1975	27.7	6.2	11.4	1.6	8.4
1976	30.8	5.9	12.6	2.1	10.1
1977	34.1	6.6	13.7	2.3	11.5

Source: Survey of Current Business.

Table 3.38 **Direct Investment in the United States by Europe ($ Billions)**

Year	Petroleum	Manu-facturing	Insurance and Finance	Other
1950	0.3	0.7	0.9	0.3
1955	0.7	1.0	1.3	0.4
1960	1.0	1.6	1.5	0.6
1965	1.5	2.2	1.7	0.7
1970	2.8	4.1	1.8	0.9
1971	2.9	4.5	2.0	0.9
1972	3.0	4.8	2.3	0.9
1973	4.1	4.8	1.5	3.5
1974	4.7	6.1	1.0	5.0
1975	5.5	6.7	1.2	5.2
1976	5.0	7.4	1.6	6.1
1977	5.5	8.4	1.8	7.0

Source: Survey of Current Business.

Table 3.39   Direct Investment in the United States by Canada ($ Billions)

Year	Petroleum	Manu-facturing	Insurance and Finance	Other
1950	0.1	0.5	0.2	0.4
1955	0.2	0.7	0.2	0.5
1960	0.2	0.9	0.2	0.6
1965	0.2	1.2	0.4	0.6
1970	0.2	1.8	0.3	0.8
1971	0.2	2.0	0.3	0.8
1972	0.2	2.2	0.4	0.7
1973	0.4	2.3	0.2	1.3
1974	0.5	2.9	0.2	1.5
1975	0.6	3.1	0.2	1.5
1976	0.7	3.4	0.2	1.6
1977	0.7	3.4	0.2	1.7

Source: *Survey of Current Business.*

Table 3.40   Direct Investment in the United States by Japan ($ Billions)

Year	Petroleum	Manu-facturing	Insurance and Finance	Other
1950	0.0	0.0	0.0	0.0
1955	0.0	0.0	0.0	0.0
1960	0.0	0.0	0.0	0.0
1965	0.0	0.1	0.0	0.0
1970	0.0	0.1	0.0	0.1
1971	0.0	0.1	0.1	−0.4
1972	0.0	0.1	0.1	−0.3
1973	0.1	0.1	0.0	−0.1
1974	0.0	0.3	0.0	0.0
1975	0.0	0.3	0.0	0.2
1976	0.0	0.3	0.0	0.8
1977	0.0	0.3	0.0	1.3

Source: *Survey of Current Business.*

Table 3.41   **Direct Investment in the United States by Other Countries ($ Billions)**

Year	Petroleum	Manu-facturing	Insurance and Finance	Other
1950	0.0	0.0	0.0	0.1
1955	0.0	0.0	0.0	0.1
1960	0.0	0.1	0.1	0.1
1965	0.0	0.0	0.1	0.1
1970	0.0	0.1	0.1	0.1
1971	0.0	0.2	0.1	0.1
1972	0.0	0.2	0.2	0.1
1973	0.2	1.0	0.2	0.9
1974	0.3	1.0	0.1	1.4
1975	0.1	1.3	0.2	1.5
1976	0.2	1.5	0.3	1.6
1977	0.3	1.5	0.3	1.6

Source: Survey of Current Business.

Table 3.42   **Distribution of Foreign Investment in the United States by Area (in Percentages)**

Year	Europe	Canada	Japan	Other
1950	.66	.30	.00	.04
1955	.66	.30	.00	.03
1960	.68	.28	.00	.04
1965	.69	.27	.01	.02
1970	.71	.23	.02	.03
1971	.74	.24	−.02	.03
1972	.75	.23	−.01	.03
1973	.68	.20	.01	.11
1974	.67	.20	.01	.12
1975	.67	.19	.02	.11
1976	.65	.19	.04	.11
1977	.67	.18	.05	.11

Table 3.43   **Increase in the Foreign Direct Investment Position in the United States, 1970–77 ($ Billions)**

Change in Liabilities to	
Canada	2.9
Europe	13.1
Japan	1.5
Other	3.3
Total	20.8

3.5   The Change in Balance of Payments and Exchange Rate Arrangements, 1960–78

Sections 3.3 and 3.4 reviewed trends in trade and investment since World War II against the background of section 3.2. They showed that the dominant United States economic position of the 1950s eroded subsequently, perhaps in a return to more normal historic patterns. This section briefly reviews the major changes in monetary arrangements, as they reflect or affect the changing structure of the United States economy. It does not present a full-scale review of international monetary developments.[12] Rather, it focuses on two major structural changes since 1960. One is an increase in the underlying volatility of the United States "basic balance," defined as the current account plus net long-term capital flows, from the 1960s to the 1970s. The other is the shift from fixed exchange rates in the 1960s to managed floating rates since 1973. To an extent, these two changes have a cause-and-effect relationship. The increase in variability of the basic balance is an economic fact that makes the equilibrium exchange rate more variable over time. This is one of the reasons for the emergence of the system of managed floating, to permit use of the exchange rate to absorb some of this variability.

3.5.1   Intervention and Exchange-Rate Flexibility

During the period 1971–73, between President Nixon's speech of 15 August 1971, which ended gold convertibility of the dollar, and March 1973 when "generalized floating" of the major currencies began, there was a major shift in United States exchange rate policy. This was one of the two major structural changes affecting reserve and exchange rate relationships during the period. Most commentators agree that after March 1973 the world had completed a shift to more or less managed floating among major currencies, but there is disagreement on whether this period began in 1971 or 1973. During that interim period we experienced a type of "mini" Bretton Woods system in which the German and Japanese authorities attempted to hold their exchange rates fixed at the values decided in the Smithsonian Agreement of December 1971.

Before 1971, central banks generally intervened by buying or selling reserves in the foreign exchange markets to hold exchange rates within bands of specified width around parity values. After 1973, exchange rates were allowed to vary toward market equilibrium rates but with official intervention following guidelines or rules that generally have not been made public. To clarify the discussion of intervention versus flexibility, and the subsequent analysis of the effects of a change in the volatility of underlying determinants of the equilibrium exchange rate, we turn to the analytical framework of figure 3.12.

An Analytical Framework

Figure 3.12 shows the interaction between the basic balance (B), short-term capital movements (S), the exchange rate $(e$, in dollars per unit of foreign exchange, the weighted nominal rate$)$, and net changes in reserves (R). The balance of payments identity in these terms can be written as

$$B - S = \Delta R.$$
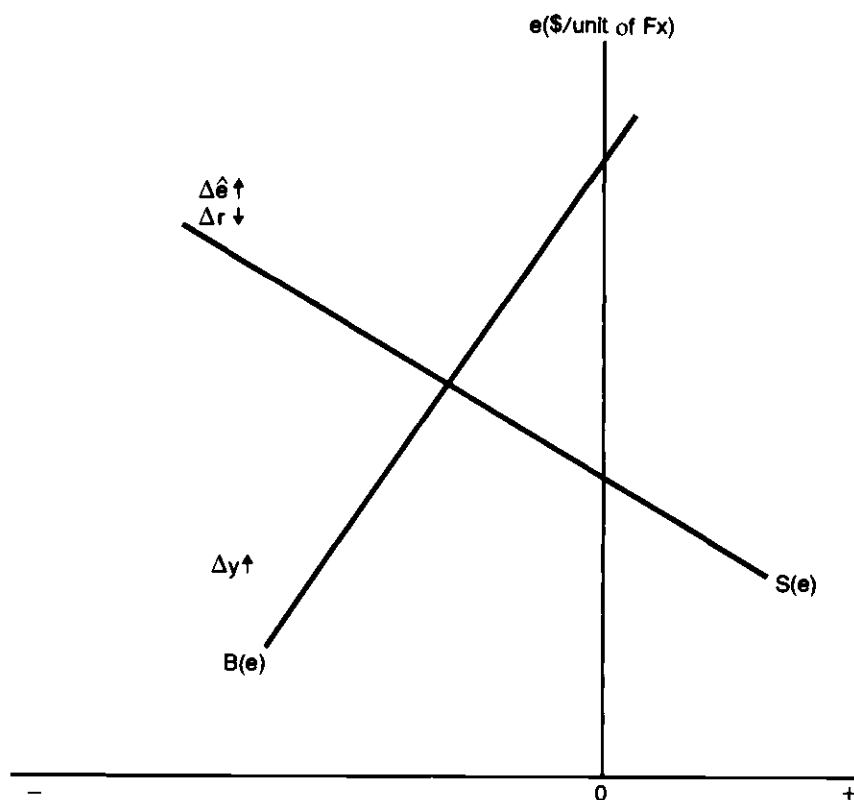
Fig. 3.12   Basic balance and short-term capital.

Here, and in figure 3.12, B is the *surplus* on basic balance, S is the *deficit* on short-term capital, and R is the *increase* in reserves. The basic balance is the current account surplus less net long-term capital outflow, and short-term capital is defined over private transactions. Data for these aggregates are given in table 3.44. The B and S curves in figure 3.12 are drawn in the negative quadrant because the basic balance has generally been in deficit since 1960.

The basic balance function $B(e)$ in figure 3.12 has a steep positive slope reflecting the effect of an increase in e (devaluation of the dollar) on the current value of the trade balance. An increase in income Y would shift B up, yielding a larger current account deficit at any given value of the exchange rate. The $B(e)$ function takes as given other determinants of the basic balance, including lagged values of the real exchange rate. The short-term capital function $S(e)$ has a flat negative slope reflecting the sensitivity of short-term capital inflows as the exchange rate changes *relative* to the expected rate e. An increase in expected rate shifts $S(e)$ up, as the surplus on short-term capital is reduced; an increase in domestic interest rates shifts it down.[13]

Table 3.44   United States Balance of Payments ($ Billions)

Year	Current Account (1)	Long-Term Capital Surplus (+) (2)	Basic Balance (1)+(2) (3)	Short-Term Capital Net Outflow (+) (4)	Change in Reserves (3)−(4) Net Income (+) (5)
1960	2.8	− 4.4	− 1.6	1.8	− 3.4
1961	3.8	− 3.7	0.1	1.4	− 1.3
1962	3.4	− 4.6	− 1.2	1.5	− 2.7
1963	4.4	− 6.0	− 1.6	0.3	− 1.9
1964	6.8	− 7.1	− 0.3	1.2	− 1.5
1965	5.4	− 7.4	− 2.0	−0.7	− 1.3
1966	3.0	− 6.0	− 3.0	−3.2	0.2
1967	2.6	− 6.7	− 4.1	−0.7	− 3.4
1968	0.6	− 2.9	− 2.3	−3.9	1.6
1969	0.4	− 4.4	− 4.0	−6.7	2.7
1970	2.3	− 6.3	− 4.0	5.9	− 9.9
1971	− 1.4	− 9.1	−10.5	19.2	−29.7
1972	− 5.7	− 5.1	−10.8	−0.6	−10.2
1973	7.1	− 7.9	− 0.8	4.5	− 5.3
1974	2.1	− 6.1	− 4.0	4.7	− 8.7
1975	18.3	−17.3	1.0	5.4	− 4.4
1976	4.6	−15.3	−10.7	−0.2	−10.5
1977	−14.1	−14.8	−28.9	6.1	−35.0

Source: Survey of Current Business.

Operation with Fixed Exchange Rates

If foreign central banks are committed to intervention at a given weighted nominal United States exchange rate (from the United States point of view) $\bar{e}$ then the difference between the B and S functions of figure 3.12 at $\bar{e}$ gives the effect on net United States reserves. For example, in figure 3.13, if the dollar rate is fixed at $\bar{e}$, below the market equilibrium value, the basic balance deficit is larger than the short-term capital surplus, and the resulting intervention to hold the exchange rate at $\bar{e}$ reduces net United States reserves by the difference $B - S = R$, which is negative. A tightening of United States monetary policy, shifting $S(e)$ down, would reduce the reserve loss, as would a United States recession that shifts $B(e)$ down.

If the parity rate $\bar{e}$ were above the market equilibrium rate, then intervention would result in gain in United States reserves, $R > 0$. An easing of United States monetary policy or expansion of demand would reduce the size of the reserve change in this case.

The average level of the United States reserve position over time will depend on whether the weighted parity rate $\bar{e}$ tends to be below or above
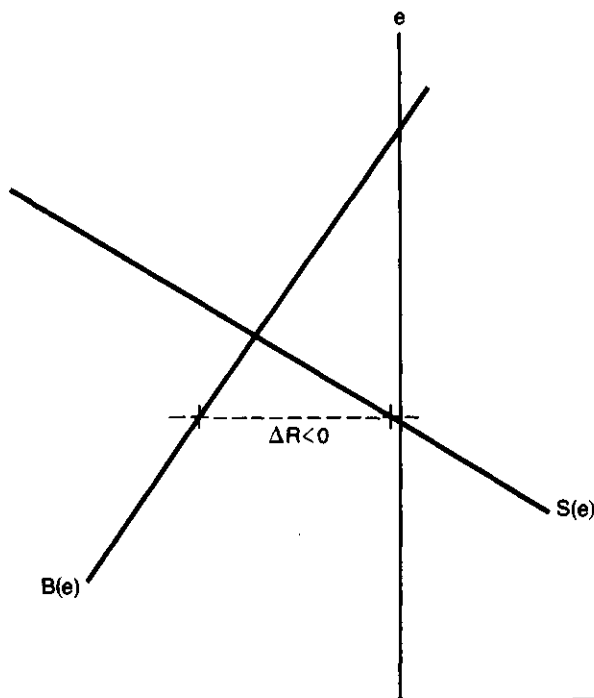
Fig. 3.13   Intervention with a fixed rate.

the market equilibrium rate in figure 3.13. In section 3.2, we saw that during the 1960s the United States share in world export markets decreased while the United States experienced roughly average price performance internationally. In figure 3.13 this development would be interpreted as a drift toward the left of the $B(e)$ function, with an increasing basic balance deficit at any given exchange rate. As a result, the market equilibrium nominal exchange rate drifted up along the $S(e)$ function, and the equilibrium real exchange rate moved along with it. It was this pressure of cumulative reserve loss and a growing gap between the equilibrium rate and the parity rate that led to the breakdown of the fixed rate system in 1971.

Operation with Flexible Exchange Rates

A system of cleanly floating exchange rates is defined as one with no intervention, that is $\Delta R = 0$. In this case the nominal exchange rate will find its market equilibrium value e^* where $B(e) = S(e)$, as shown in figure 3.14. There have been only a few short periods of completely clean floating since 1971. One clean float came in March 1973 when
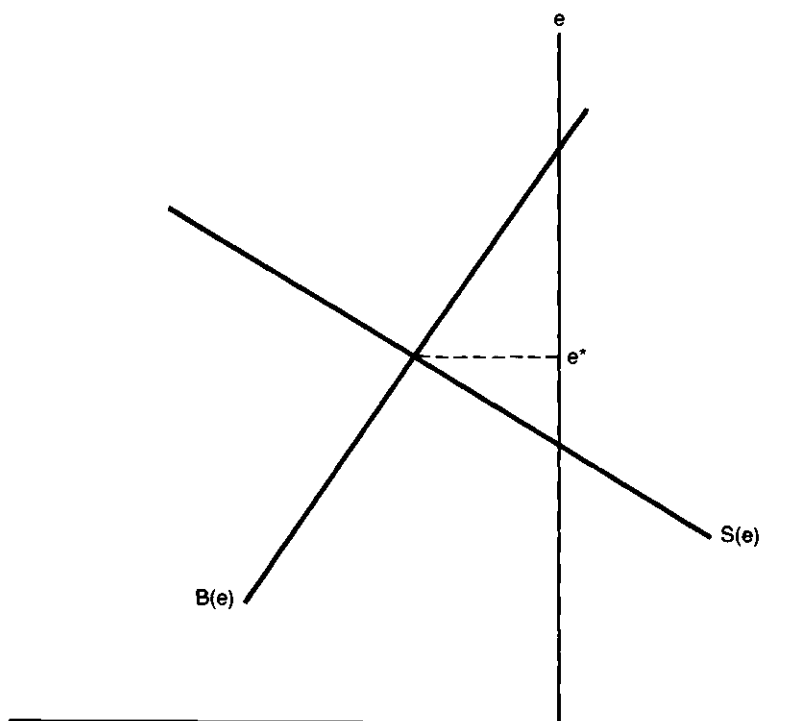
Fig. 3.14   Floating rate, no intervention.

intervention had become unsustainable and rates were so far from market equilibrium that they had to be floated to see where the equilibrium was. Other periods of minimal intervention have come when the $B(e)$ and $S(e)$ functions remained stable for a period of time and as a consequence exchange rates remained stable without intervention. One such period came during 1975, when the weighted nominal United States exchange rate rose 1.25 percent (fig. 3.1, 1975:1–1976:1), and United States reserves fell by only \$4.4 billion (table 3.44).

Partial Intervention or "Leaning against the Wind"

Generally in the period since 1971, exchange rates have been neither fixed nor cleanly floating. Instead we have had a period of generally managed floating, in which central banks have intervened to slow the movement of the rate, effectively resulting in partial adjustment of the actual rate when the equilibrium rate moves. This intervention policy, called "leaning against the wind" in foreign exchange markets, is illustrated in figure 3.15.[14] There the initial market rate is e^{*}_0. A leftward shift of $B(e)$ from B_0 to B_1 would raise the market equilibrium rate to
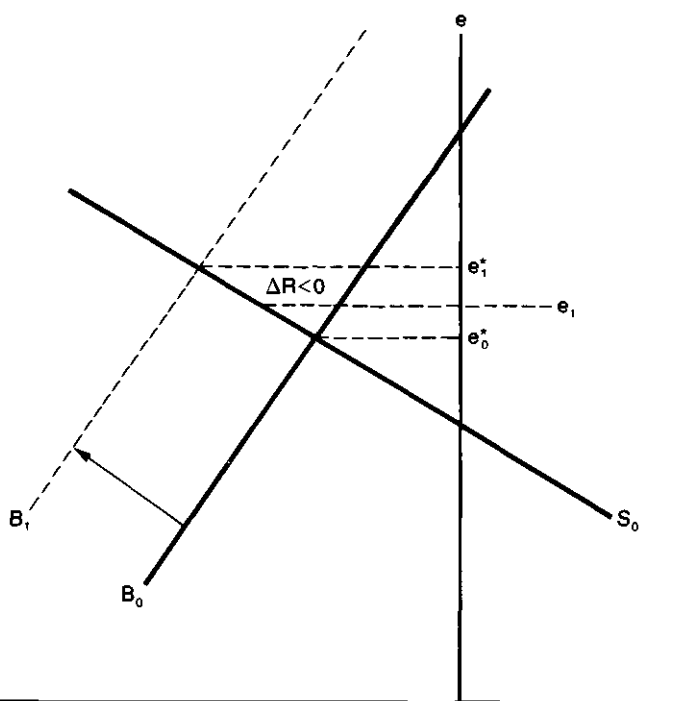
Fig. 3.15   "Leaning against the wind."

e^*_1. If the rate of change of e from e^*_0 to e^*_1, is viewed as too large by foreign central banks or the Fed, intervention could hold the rate at some intermediate value e_1. The resulting reserve loss to the United States would be ΔR, in figure 3.15.

An example of this policy appears in the data for 1977–78 in figure 3.1 and table 3.44. The United States basic balance deficit increased from \$11 billion in 1977 to \$29 billion in 1978 (table 3.44). This was accompanied by an increase in the weighted nominal exchange rate of 12.6 percent from 1977:4 to 1978:4 *and* an increase in reserve loss from \$11 billion in 1977 to \$35 billion in 1978 as central banks slowed the movement in the exchange rate.

It should be clear from the example of 1977–78 that observed reserve movements can be larger under managed floating than under fixed rates, if the stability of the $B(e)$ function changes across periods. When $B(e)$ is relatively stable, fixed rates may be maintained with little intervention as long as the parity rate is close to the market equilibrium rate on average over time. But if $B(e)$ becomes unstable, larger interventions are required. If these become too large for central banks to countenance, they move to managed floating. This permits the exchange rate to absorb some of the shock of $B(e)$ disturbances. For example, in figure 3.15 the ΔR that would be to hold the rate at e^* as B shifts from B_0 to B_1 is much larger than the intervention under managed floating.

Thus a significant increase in the volatility of the current account or the basic balance could move the system from fixed rates to managed floating. Here the structural change in policy regime in the 1970s could be traced to a change in the underlying structure of the economy. We now turn to evidence of such an increase in basic balance volatility.

3.5.2   Volatility of Underlying Exchange Rate Determinants

The annual data for United States balance of payments aggregates since 1970 are shown in table 3.44. There the data are arranged to correspond to the framework of figures 3.12 through 3.15. The basic balance surplus of column 3 is $B(e)$; the short-term capital outflow of column 4 is $S(e)$, and the change in reserves of column 5 is ΔR. The basic balance shows deficits every year except 1961 and 1976; the reserve column shows losses every year except 1966, 1968, 1969. The current account column generally shows surpluses. The exceptions are the cyclical recovery years of 1971–72 and 1977–78. It is interesting to note that cyclical fluctuations rather than movements in the price of oil have dominated movement in the current account in the 1970s.

The increase in volatility in the basic balance from the 1960s to the 1970s is evident in table 3.44. From 1960 to 1969 the range of variability of the basic balance was \$4.2 billion, from a surplus of \$0.1 billion

in 1961 to a deficit of $4.1 billion in 1967. But from 1970 to 1978 the range widened to $30 billion, from a $1 billion surplus in 1975 to a deficit of $28.9 billion in 1977. The time-series standard deviation of the basic balance increased from $1.4 billion in 1960–69 to $9.4 billion in 1970–77.[15] Thus there was a significant increase in the volatility of the basic balance from the 1960s to the 1970s. This resulted both from the increase in variation of the price of oil and the international business cycle, and from a jump in the net outflow of long-term capital in the last half of the 1970s.

By comparison with the basic balance, the increase in variability of the balance on short-term capital from the 1960s to the 1970s is small. The range of variation in the short-term capital balance of table 3.44 in the 1960s is $8.5 billion; in the 1970s it rose to $19.2 billion, including the massive outflow in 1971 when the fixed rate system gave way. If we exclude 1971 as a unique event, the range of variation from 1970 to 1978 is $6.2 billion, *less* than in the 1960s. The standard deviation of the short-term capital time series for the 1960s is $2.8 billion. For the 1970s it is $6.1 billion including 1971 and $2.9 billion excluding it. Thus there has not been a significant increase in the volatility of short-term capital in the 1970s.

The reserve column of table 3.44 shows significantly greater net interventions in the 1970s than in the 1960s. During the 1960s, annual changes in the net United States reserve position varied from the $3.4 billion increase in the tight-money year of 1967 to a $2.7 billion decrease in 1969. Since the regime of managed floating began in 1973, foreign central banks have absorbed dollars every year, slowing the rate of devaluation of the dollar. As a consequence, the net United States reserve position has decreased each year, with the biggest change since 1973 coming with the $35 billion accumulation of official dollar holdings abroad in 1977.

The increase in intervention, in quantitative terms, from the 1960s to the 1970s is not evidence of increased fixity of exchange rates. Rather, the variability of the underlying determinants of the exchange rate, especially the basic balance, has increased significantly. As a result, the intervention that would be needed to hold rates fixed has increased substantially. Thus we see larger interventions in the "floating rate" system of the 1970s than in the "fixed rate" system of the 1960s, even as movements in exchange rates now absorb some of the pressure of variation in the basic balance.

The data of table 3.44 support the view that the variability in exchange rates since 1973 is largely the result of underlying variability in the basic balance. As the basic balance is perceived to change, the exchange markets forecast the consequences for exchange rates, and the

pressure appears as an immediate movement of the rate. Thus in interpreting balance of payments and exchange rate fluctuations in the 1970s, we should go back to underlying economic determinants of movements in the basic balance.

Notes

1. The data and an initial draft of this section were contributed by Dennis Warner of Michigan State University and NBER, using OECD trade data.

2. Strictly speaking, in a list of commodities ordered from those with maximum net exports to those with maximum net imports, the United States has a comparative advantage in producing the goods higher on the list relative to those lower on the list.

3. Disaggregation of the end-use data in an analysis focusing on net exports runs into the problem that, beyond the two-digit level, export and import categories do not match. This arises because a major criterion the OBE used for creating subcategories was the contribution of an item to the value total in its major category, and this criterion was applied separately on the export and import sides. In disaggregating beyond the two-digit level, therefore, the analysis here basically follows the export end-use categories, assigning import categories to the relevant export groups. For a discussion of the rationale and structure of the end-use groupings, see OBE (1970 pp. vii–xviii).

4. The analysis here focuses on trade in manufactured goods, for several reasons. First, and perhaps most important, trade in agricultural goods is greatly affected by nonmarket activities, mainly government subsidy and import programs in all the developed countries, and the P.L. 480 agricultural aid program in the United States. This general intervention is much more extensive in agricultural trade than in trade in manufactured goods, and could easily obscure underlying trends in comparative advantages. In addition, the cross-section data used to assess the basis for United States comparative advantage in the mid-1960s relate only to trade in nonagricultural goods, although they include trade in goods from the mining industry.

5. A similar pattern can be seen in the petroleum industry. The United States has had a deficit in crude petroleum trade since 1946, a deficit in semifinished petroleum products since 1949, and a surplus in finished petroleum products that has been shrinking from a $520 million peak in 1951 to a deficit of $114 million in 1976.

6. This could, of course, be due either to a basic United States comparative advantage in more advanced manufacturing or to an effective tariff structure that favors it.

7. Trade in footwear, luggage, and apparel of leather, fur, rubber, or plastic has followed a pattern quite similar to that of consumer textiles.

8. A similar pattern is observable in trade in automotive goods, with a surplus in parts and a deficit in finished product.

9. The same product cycle can also be observed in man-made fibers and in synthetic rubber. By 1963 the United States was a net importer of fibers, and by 1966 trade in synthetic rubber was roughly balanced. For examples of the product cycle at a disaggregated level, see Seev Hirsch (1965) and Louis T. Wells, Jr. (1969).

10. After this paper was completed, I received a copy of Stern and Maskus (1979). Their work, on cross-section and time-series data for 1958–76, is in close agreement with the results reported here.

11. This is table 2 in Branson and Monoyios (1977). In verifying their results they also provide scaled regressions to adjust for heteroskedasticity and probit regressions, at the two-digit and three-digit SITC levels.

12. See Branson (1979c) for a year-by-year description of international monetary developments since 1965 and their effect on the theory of international finance.

13. The implicit model of figure 3.12 is the standard asset-market model of exchange rate determination. The curves of figure 3.12 represent end-of-period positions, given beginning-of-period asset stocks. See Branson (1979a) for the asset-market model and Buiter (1979) for an analysis in a period model.

14. This policy was first analyzed in Branson (1976). There is ample empirical evidence that intervention policy has followed this approach in general. See, for example, Branson-Halttunen-Masson (1977) for Germany and Amano (1979) for Japan. This policy rule is explicitly built into the Flex 1 econometric model of Japan, which is discussed by Amano.

15. The F-statistic for the increase is 32.8 compared to 3.1 at the 5 percent level and 5.1 at the 1 percent level.

2. *Herbert Giersch*

The United States in the World Economy— A European Perspective

The first half of the sixty-year period to which the NBER can look back saw the decline of the "Pax Britannica." During the same time the United States economy rose to a position that enabled it to become, after World War II, the center of a worldwide system of relatively free international transactions, sometimes called the "Pax Americana," the OECD area, or, simply, "the West." This system is now being gradually transformed into a tripartite system, with Japan in Asia and the European Community as the other two centers. As a symbol of America's leadership role in rebuilding the Western world's economy, one may simply look at the fact that the United Nations and the institutions created under the Bretton Woods agreement established their headquarters on the east coast of the United States. Would the same location necessarily be selected today?

The United States economy qualified for undisputed leadership in rebuilding the world economy for a number of valid reasons, including the fact that it ranked highest among all Western countries in the follow-

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ing areas: share in world GDP or in world manufacturing output (60 percent); share of world exports (20 percent); the state of technology and the level of productivity in a large number of industries; independence of raw material imports, including energy; and military strength and lack of military vulnerability.

United States leadership was readily accepted in the West. At least from the perspective of former enemy countries it was combined with apparent generosity. The U.S.:

1. Gave aid to war-ravaged and starving Europe, including West Germany where a Morgenthau plan had been expected rather than Marshall Aid
2. Pursued a constructive policy towards postwar Japan, later supported by United States demand for procurement during the Korean War
3. Made positive contributions to worldwide tariff reductions in successive GATT rounds and to trade liberalization within Europe (EPU and OEEC)
4. Extended sympathy towards European economic integration (EEC) despite its discriminatory implications for the United States
5. Pursued a policy of keeping imports relatively free, including imports from countries in a catching-up process, at exchange rates favorable to those in need of overcoming a dollar shortage, thus creating or permitting conditions for export-led growth, e.g. in Japan and Germany
6. Was a source of foreign direct investment which enabled the other countries to benefit from a unilateral transfer of technical knowledge

It is difficult for an outside observer to judge how much of the generosity was a reflection of basic liberal or libertarian attitudes and how much of it has to be imputed to United States national interest during Cold War conditions with the East.

In many respects the United States economy became a model that offered itself for imitation. This refers not only to technology, but also to sociopolitical characteristics such as free markets for goods and ideas, monopoly control, competitive behavior and other features congenial to an open society and representative democracy. However, United States trade policy often remained protectionist enough to prevent domestic adjustment processes where they would have been unpopular. With regard to agricultural products the United States favored free trade for its export products and opposed it for products on the import list (Kindleberger 1976/77), and the export of capital was not unrestrained after 1945.

United States leadership or hegemony (as Shonfield [1976] calls it for the period 1950–65) was likely to be a temporary phenomenon of rather short duration, mainly for reasons I believe to be inherent in the

nature of a decentralized world market system. United States superiority was eroded in the following ways:

1. Relatively free trade in goods, assets, and knowledge enabled other countries with a large, potentially productive stock of human capital to catch up with the United States; this happened in Europe and, under the stimulus of Japanese economic growth, in Asia and nowadays particularly in those NICs that have abandoned import substitution policies to take advantage of dynamic linking (concentration on products with a high income elasticity of world demand).
2. More and more producers in catching-up countries succeeded in switching from technological imitation to genuine innovations, thus overtaking their United States competitors in such fields as cars (Germany), motorcycles, steel, rail transportation, shipbuilding, and consumer electronics (Japan).
3. Economic growth in the West reduced the United States share in world output and exports.
4. Multilateral market penetration raised the openness of the United States economy (imports in relation to GNP).
5. And, debatable domestic policies increased America's vulnerability to external supply shocks (energy).

It is true that the United States economy's comparative advantage in the international division of labor is in land-intensive agricultural products and, in manufacturing, in goods requiring a large input of human capital in combination with much physical capital; but the United States economy is no longer alone in advanced manufacturing and has, therefore, fewer opportunities for earning monopoly gains in world markets. With relatively great freedom in international trade, investment, and transfer of technology there is also no longer any tight complementarity between United States research and United States labor: knowledge produced in the United States can well be combined with efficient management and labor elsewhere. Thus, organized labor in the United States will have to learn to adapt to the emergence of an open economy. (Perhaps in a more distant future government will have to recognize that it operates in competition with governments elsewhere, given the increasing importance of international investment and the increasing international mobility of people embodying special skills and other forms of highly productive human capital with positive externalities.)

The most important symbol of America's loss in superiority is the decline of the dollar in international currency competition. Of course, under United States leadership the Bretton Woods system had all the properties of a currency cartel: stable or sluggishly adjusted prices (exchange rates) expressed in, or tied to, a hegemonial currency, the supply of which had barometric or leadership functions for the supply policies

of the other members of the "club"; this worked relatively well as long as the dollar was freely convertible into gold at a fixed price or deserved full confidence because of the relative stability of its purchasing power in terms of American goods and services. As a reward for monetary leadership the United States could, comparable to a bank, earn seigniorage gains in the form of a deficit in its basic foreign balance. While some American economists thought that the expanding world economy needed more international liquidity—in addition to gold production for monetary use—than the United States could supply without destroying confidence, thus propagating the creation of SDRs, some countries actually felt compelled to accumulate more dollar claims than they wanted to add to their reserves, given the exchange rate and their desired monetary policies. The dollar glut began to emerge in the early 1960s. As the exchange rate adjustments which the situation required were too limited in geographic scope (Germany and the Netherlands in March 1961) and absolutely inadequate in size, a transatlantic disequilibrium developed in money and finance as well as in trade and production. This led to the collapse of the exchange rate cartel in the early 1970s and to the emergence of what has been called a "nonsystem" or a "system of managed floating" and what I consider to be a lively competition among currencies, with some currency areas expanding (yen, deutschemark, Swiss franc) at the expense of the dollar area.

Among the factors which may have contributed to the decline of the dollar, I would like to suggest the following for consideration:

1. Those restrictions on United States banks (regulation Q, no interest payment on minimum reserve requirements, etc.) which induced the expansion of banking operations outside the United States.
2. The choice by United States policymakers after 1961 to shoot for a point on the Phillips curve that implied less unemployment and more inflation than the economy had experienced during 1957–60 (see Gordon, chap. 2 of this text, pp. 00) and an increasing rate of actual price inflation, despite guidepost policies to repress it and despite a tendency to export it to some other countries on the de facto dollar standard.
3. The tendency of the United States foreign balance (basic balance) to show a worsening deficit between 1962 and 1972, rarely matched by imports of short-term capital, notwithstanding the Kindleberger-Salant Hypothesis, and leading to an increasing loss of reserves, as shown in Branson's table 3.43. This occurred despite government interventions to slow down the outflow of short-term capital (Operation Twist) and of long-term capital (Interest Equalization Tax and the Federal Reserve's Voluntary Foreign Credit Restraint Program), including direct investment (see Friedman, chap. 1 of this text, p.

91); and despite government efforts to sell, and to obtain prepayment for, military equipment, and to prevent gold conversion of official foreign claims by exchange rate guarantees (Roosa Bonds), by moral suasion, and even by a threat to withdraw United States troops from strategically important sites in Germany.

The reference system, or normative system, against which this development of the United States foreign balance should be judged would include the following criteria:

1. As a rich country, the United States ought to run a surplus on current account to enable or to support an outflow of long-term capital to countries where the potential marginal product of capital is higher because of an apparent capital shortage.
2. As an advanced country the United States has a role to play as a supplier of services, including the supply of financial intermediations.
3. As a supplier of world money, the United States must be ranked number one in maintaining price level stability, or must be almost as successful in this respect as its close competitors; under currency convertibility it must fully anticipate, in its policy decision-making process, the loss in seigniorage gain (interpreted by some as a vicious circle) that is bound to occur when an inflation tax is imposed on dollar holders, domestic or foreign, and when that tax can be avoided by holding other currencies.

As a supplier of services, the country can afford some overvaluation of the exchange rate on the basis of production costs for standardized internationally traded goods (Heckscher-Ohlin goods). The country must be prepared to let the production of standardized goods, which are neither capital intensive nor skill intensive, outmigrate to less developed countries closer to the periphery of the system. LDCs can then be good capital importers and can earn the foreign exchange needed for servicing the increasing foreign debt. The rich capital-exporting country will then also find an expanding market for its capital goods in LDCs, hopefully for capital goods which incorporate a technology appropriate for countries suffering from a capital shortage and an abundance of unskilled labor. In this light, the overvaluation of the dollar during the sixties can hardly be criticized.

As a supplier of world money the United States should have, as mentioned above, refrained from an easy-money policy for employment purposes. This constraint requires a public understanding that the level of employment in the country as a whole in any one sector, industry, region, or firm essentially depends upon the relation between real wages and productivity (the latter, of course, adjusted for changes in the terms of trade). The monetary authority is then free to care for the international competitiveness of its own product—money—as a store of value.

In a small open economy with an independent currency, there is less temptation to solve the employment problem by means of unanticipated inflation. This is perhaps the basis of strength of the Swiss franc. The strength of the deutschemark rests on the traumatic experience of two war and postwar inflations (one open, one repressed) and on a consensus supported by a tripartite understanding between labor, business, and government that imputes to organized labor at least some indirect responsibility for price level stability and high employment. In the United States the labor market seems to be too polypolistic for such arrangements. On the other hand it seems also to be too heterogeneous to permit full employment at relative wages and wage differentials that are compatible with prevailing views about fairness and justice (minimum wages). But, contrary to Europe, the United States seems to have some downward flexibility of real wages, or a type of money illusion that offers itself for exploitation by policymakers. Moreover, the United States is large and still so similar to the model of a closed economy that proponents of Keynesian employment strategies were rarely aware of the additional upward flexibility of prices which flexible exchange rates have introduced into the system via the prices of internationally traded goods. Complaints about this disadvantage of flexible rates are an implicit admittance of the great help which United States full employment policies in the 1960s had received from the fact that the United States could (temporarily) export inflation (lengthen the price and wage lag) at the expense of its leadership role (or hegemonial power) in international monetary matters.

In the 1960s the dollar became grossly overvalued, not in relation to Third World currencies, but in relation to Europe and Japan. In the absence of accepted normative criteria we may also say that the 1960s gave Europe and Japan a competitive advantage vis-à-vis the United States, perhaps as a fair return for the stability they were induced to export (the inflation they had to import).

What happened can be summarized in four points.

1. Europe benefited from an accelerated inflow of investment, technology, and entrepreneurship (called the "American Challenge" in a widely read book by Sevran-Schreiber [1967]), only partly reflected in the balance on current account. This development destroyed United States monopoly positions in many fields and led to a deterioration of the United States terms of trade and hence to a decline in United States incomes relative to European incomes.
2. Countries such as Germany were induced to build up their international sector (exports and import substitutes) in response to what appeared as an ever increasing export market (a "black hole in the world economy"); this was done at the expense of the domestic

sector and presumably accelerated economic growth (as we measure it).

3. The induced expansion of the international sector in Germany led to an export-biased growth in Europe's center, partly at the expense of economic growth in the south of Europe which suffered from an insufficient inflow of capital and an excessive drain of workers.

4. Economic growth in the United States became import-biased and, I venture to assert, slower than it could have been.

   The 1970s saw a process of correcting the transatlantic imbalance. To describe and explain this process, let me emphasize six points:

1. The decline of the effective dollar exchange rate (exchange rate adjusted for relative WPI in Branson's table 3.33) after 1969, notably between 1971 and 1973

2. The even more drastic devaluation of the dollar in relation to European currencies, particularly the Swiss franc (Branson, fig. 3.1) and the deutschemark (not shown in Branson), which gained more than 100 percent in nominal terms and 80 percent on an inflation-corrected basis (WPI 1979 over 1969)

3. An accompanying change in the relation between hourly wage costs in manufacturing in the United States, on the one hand, and in West Germany and other European countries on the other hand (Giersch 1979, p. 641)

4. A rise in the United States share of total manufacturing output of the West and a corresponding decline of the German share (Branson, table 3.8)

5. A decline in employment in German manufacturing (about one million jobs during the seventies), combined with a slowdown of industrial growth and a reacceleration of the growth rate of industrial output per hour (Branson, table 3.7) when much of the adjustment took place (1970–75)

6. A reversal of the transatlantic flow of direct investment, with United States firms being less attracted to Germany (and the European continent) and German (and European) firms being more attracted by investment opportunities in United States manufacturing (see also Branson, p. 244)

The structural implications of this adjustment problem for West Germany had been clearly recognized at an early stage (e.g., Fels; Schatz; and Wolter 1971). A similar transpacific adjustment problem likely existed at the same time. These structural phenomena, to my knowledge, were practically ignored in the international economic policy discussions which took place at various levels after the 1975 world recession.

Today, the assessment of the United States role in the world economy cannot be sufficiently comprehensive without mentioning oil. In this context the following points readily come to mind. The United States has been a leader towards an oil-intensive civilization. The rest of the world has little sympathy for a policy which keeps the relative price of oil in the United States lower than it is elsewhere (a policy described as perverse by Milton Friedman in a recent issue of *Newsweek*) and leaves the role of leadership toward a less oil-intensive civilization to other countries. Permissiveness vis-à-vis short-run domestic populist pressures may have medium-run disadvantages for the United States economy's international terms of trade when world demand for producers' and consumers' durables with incorporated energy-saving technology will be booming.

The NICs will be a challenge for the United States as well as for other old industrialized countries. Structural adjustment to imports from the NICs and from those to become NICs in the next decade, is likely to be essential for all advanced countries. Economists should know, and explain to others, that this is a positive sum game as exemplified by the postwar reconstruction of the Western world economy.

If, as Keynes observed, defunct economists have more policy influence than vested interests, the United States and West Germany should not be too unhappy that their economic and political elites have switched from the doctrines of Alexander Hamilton and Friedrich List to the ideas of a philosopher-economist of Scottish origin. However, it is worth watching current attempts of Cambridge (England) economists to apply the infant industry argument for protection to senile industries, and to countries where such industries are plentiful. Such proponents of a new protectionism are likely to find increasing resonance in advanced countries under adjustment pressure. The danger that this will produce negative external effects on the growth of international transactions and the increase of real incomes deserves to be a matter of concern.

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3. Peter G. Peterson

The World Economy and Us: Some Comments

Dr. Giersch, my limitless capacity for indiscretion forces me to say to you that as sophisticated as your analysis has been of what happened, you may have raised to a level of conscious and even benevolent policy

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what at least in the 1960s was more a matter of ignorance and inadvertence on the part of the United States.

What I am referring to is this: Certainly during much of the 1960s a good deal of our foreign policy and foreign economic policy—in the face of obvious evidence of seriously distorted exchange rates and a profound change in America's competitive position—was remarkably benign, indeed innocent. I think it is fair to say that much of our foreign policy establishment in the 1960s would have operated on one of two premises: (1) we did not have a significant foreign economic problem even in economic terms, and (2) even if we did, it was not truly significant in relation to our other strategic, foreign policy interests. Therefore, while I would agree with your analysis of what happened, I am not entirely sure that I would agree with your analysis of why it happened, and whether in the 1960s it really was as conscious a policy as you would suggest.

My comments about international economics will be quite brief. Milton, I have to tell a story on you and me to illustrate why this is appropriate. You have probably forgotten a lunch meeting that you and I had at the time George Shultz called me in the very late 1970s and said, "We want you to come down to the White House to take on a job as Assistant for International Economic Affairs." I asked Milton if I should take this job. No one has ever accused Milton of excessive ambiguity and he may have forgotten that he gave me a very unambiguous, "No." I said, "Why not, Milton?" And he said, "Well, if you have floating exchange rates, the job is unnecessary, and if you don't, it is impossible, and I think at your age in life you should not take a job that is either unnecessary or impossible." Incidentally, he may have been right that it was a nonjob.

In any event, when I went down there I found profoundly different perceptions as to whether we even had an international economic problem. On the one hand, there were those in the Commerce Department who felt that our problem had so metastasized that the United States was about to become a service economy and therefore the solution was quotas on virtually everything. On the other hand, many in the State Department were tending to ask, as I indicated earlier, "What problem are you talking about?". I decided to put together hurriedly a series of charts that showed what had happened to the position of the United States in the global economy in the last twenty or thirty years and to define what the problem was. And perhaps all I achieved was to add to the growth rate of the audiovisual industry. I don't know. In any event, preparing for this meeting I decided to update some of this material. I will save you the horrors of another audiovisual show, and I have only a marginal contribution to what William Branson has already done very ably.

I would like to emphasize two or three aspects of what has happened since 1970. I think that since the various so-called Nixon economic shocks of 15 August 1971, which is a threshold date in many, many ways, it has become conventional in this country in talking about our trade picture to sound and act as though we alone have had an oil deficit problem. So, I thought it might be interesting to look at Japan, which obviously imports relatively much larger amounts of oil, and look at the configuration of its trade picture since 1970. What this tends to show is that Japan in addition to having a much more serious oil deficit problem than the United States has, of course, had a much enlarged trade deficit in food that has gone from about $4 billion to $12 billion from 1970 to 1978. Our trade picture, of course, would be much more negative had our foodstuff balance not gone from virtually half a billion dollars surplus in 1970 to a $12.5 billion surplus in 1978. In addition to that, of course, the raw materials deficit in Japan's foreign trade picture has gone much more negative from $5 or $6 billion in 1970 down to a $15 billion deficit in 1978.

Also, very interesting to note when you consider the relative size of the economies, is that Japan's fuel deficit since 1970 has gone from roughly $4 billion to over $31 billion; the United States deficit, in a much larger economy has gone from $2 to $38 billion. So, relatively speaking, I think we sometimes forget the much larger oil import burden they have carried in relation to their GNP. The obvious question is: What have they done to achieve their impressive trade surplus? Obviously, I need to say a few things about manufactured exports. From 1970 to 1978, our trade balance has gone from about $1 billion in surplus to a $4 billion deficit in manufactured goods. Japan's surplus on manufactured goods has gone from a $13 billion surplus to $76.5 billion, or a $63 billion larger surplus in manufactured goods than they had in 1970, in spite of the exchange rate changes. And Germany's manufactured goods trade surplus has gone from $12 to $55 billion at a time when our surplus has gone down. To be sure, our situation has improved somewhat in recent months but the comparative data are not yet available.

Next, technology. I won't say much more than Edwin Mansfield said in his paper about our relative role of technological innovation, but clearly something is going on in that area. The Department of Commerce has had a set of numbers on what I call technology intensive products. These definitions are not perfect, but they are at least consistent and I think the trends are so significant as to suggest that something is going on here. These technology intensive manufacturers have always been the principal source of United States export strength as you might expect, but what's happened since 1971 in regard to those products is to me quite interesting. I got a fair amount of initial comfort out of the fact that in the aggregate our surpluses on those technology-intensive

products had gone from about $4 to $19 billion during this period. However, when I examined the composition of that surplus, I discovered that the vast increase in those surpluses has been to OPEC countries and other LDC countries. However, if you look at our trade in those technology intensive products with West Germany and Japan, here is what you see. In the case of Japan in particular, this deficit has gone from $2 billion in 1970 to $13.5 billion on the higher technology products since 1970.

And there are just a couple of additional points I would make about this technology situation in terms of patent trends. I agree with Professor Mansfield that patents are hardly a universal measure, but they must indicate something; at the very least that some people decided some idea was worth at least going to the Patent Office and getting a patent for if nothing else. In the last ten or eleven years our patents in absolute terms have gone down about 10 percent or so. Also, if you look at the four areas of high technology that have traditionally been an important source of exports for this country and, of course, internal strength—machinery, electronics, communication, and scientific instruments—in those fields generally our patents have gone either flat or down in the last ten years. But Japan's have gone up 400–500 percent, and West Germany's have risen substantially too. Now clearly theirs are from a much lower base, but I believe there is something important going on here in this technology innovation front.

There is another thing that has not been publicized, but I hear about it more and more from businessmen. Increasingly I hear that foreign manufacturers, particularly in Japan and in Germany, have an added degree of quality and reliability in their products that gives users, particularly less sophisticated users, a sense of added confidence in the use of those products. For example, a recent study on Japanese versus United States color television sets strongly suggests that the Japanese have achieved the twin objectives of added reliability and lower production costs.

If you go back to 1970, and I am focusing on manufactured goods because I think not as much study has been done in that area as should have been, it may interest you to know that the United States and West Germany were roughly identical in respect to absolute levels of exports of manufactured goods in that year. However, today, we are now at $94 billion, and the Germans are now at $125 billion, or roughly a third higher than we are in absolute terms at the present time. The Japanese are now where we are. Back in 1960 they were only at $4 billion; we were exporting four times as much in goods as they were. I am simply trying to make the point that in the manufacturing exports arena something very significant has happened.

I don't know what we can do about exports, and I am sure in this group there may be a debate as to whether we should do anything.

Exports have always been a "mego" subject in America. One of the few intellectual contributions of the Nixon Administration, some might say the only one, was the concept of mego (mego stands for "my eyes glaze over"). Exports are clearly not a mego subject in other countries. George Shultz had Helmut Schmidt in California this summer and it fascinated me to listen to the informed way in which the chancellor talked about his country's exports. He did not consider it irrelevant or embarrassing or trivial to know the major export orders that his country was trying to get. He seemed briefed on all the major deals to the United States. It is not a subject that America's leaders have displayed much interest in.

To take another example, I was asking Paul Samuelson whether selling savings bonds was as unrespectable in classical economic circles as ever, and he assured me he thought it was. We spend an enormous amount of time in the Treasury and other places selling savings bonds. I wonder what would happen if we spent as much time in the export areas. While in some of our more sophisticated companies at the chief executive officer level the export potential is perceived, I think there are still quite a few companies that are shocked when they see how much of the exports of a lot of their competitors are to the Third World.

Let me briefly touch on the problem and potential of the Third World and its implications. You perhaps know that our exports are growing much faster to LDCs than to the rest of the world. But many people are surprised to know that in some of our more sophisticated industries, such as chemicals and machinery, LDCs are now accounting for 40 percent to 50 percent of the total exports to the United States. An OECD study showed that all the growth of manufactured goods in the last four or five years was to LDCs. This raises the whole engine of growth concept and whether LDCs could be a source of less inflationary growth for the developed countries.

A key problem, however, is the one of the ballooning debt and deficits of the Third World and their implications to the global economy. I have spent about ten weekends in the past two years, not too happily, in some state of schizophrenia, paranoia, or other assorted psychic disorders, on the Willy Brandt Commission. Two-thirds of the membership, very able members, may I say, are from the Third World from such exotic places as Tanzania and Upper Volta. But in the course of our work we asked the IMF to look at the oil-related LDC deficits and do a projection to 1985. You may or may not have much confidence in these estimates, but they point out that whereas the internal debt of these countries now aggregates about $250 to $300 billion even before the last two price increases of the last three weeks, it is conservative to estimate that this number will be up to at least $350 billion by 1985. Thus, there are IMF estimates now, that have not been published, of $600 to $700 billion in

aggregate debt of oil-importing LDCs. This raises to me significant questions about whether the private banking system can or should really fund this level of proposed debt, and if they don't can their economies adjust to these relative prices? One of the ideas I tried to promote on this Brandt Commission is that among the brilliant public relations achievements of the last ten years has been that of the OPEC countries portraying themselves as brothers and friends of the South in the North-South confrontation. And, I wonder why the OPEC countries could not be induced to broaden their portfolio and do some direct lending to the non-oil-developing countries—or at the very least share some loan guarantees, and of course contribute much more in direct aid. This problem of aggravated debt is one I don't think we can ignore.

Third, I don't think we can have any discussion of international economics without discussing the very fragile supply of oil from OPEC over the next several years. Conventional estimates of how much oil we would be getting from OPEC in the 1980s were, on the low side, 35 million barrels and, on the high side, 45 million barrels. But I think it is clear that we may be in the range of the high twenties for a whole series of reasons. I think OPEC has discovered it can produce less and get more. Also, the young princes want to have something to do later in their lives.

There are very important political and psychological elements that have not been discussed but which I think are very real. It is now clear that some of the leaders of certain OPEC countries may feel their lives, both politically and psychologically, may be at stake if progress isn't made on this Palestinian issue, and that may have a tendency to "focus their minds" with regard to the use of the oil weapon. Thus, I don't see how we can talk very seriously about the future of the global economy without facing the very clear possibility that oil supplies may be both inadequate and very unstable. I hope that the current situation in Afghanistan helps to clarify in our minds the fact that reasonable security of oil supplies is clearly a political and military security issue, and not simply an economic question of price.

Finally, I can't resist the temptation to say something that George Shultz and Arthur Okun have alluded to when they talk about the political landscape of the United States. We have an incredible tendency in meetings like this to preach to the choir and talk to each other about the need for investment, productivity, savings, and the like. I think the truth of the matter is that it is easy for me and perhaps Walter Wriston and others to blame the television media and the news media for some of our problems. They share in it, but I think the business community has to take a great deal of responsibility for the attitudes that exist in the public about business and investment. I think the Business Round-table has done a fine job in Congress, much better than they used to,

but I think we are just doing a D-minus job with the public. When I say this to some of my business friends they tell me they have given X number of speeches in the last six months on free enterprise to several public high schools in the area. What we seem to forget is that networks are *news* media, and news media are not interested in dull platitudinous speeches on the free enterprise system. They are interested in *news*. And businessmen have a remarkable capacity when central issues come up to become silent.

I was reminded of this on the Chrysler matter recently. Forty-two out of forty-three or forty-four of the Business Roundtable in their private sessions talked to each other about what a horrendous precedent the British Leyland action set. At least a statement was put out, but not signed by any individual. It was a kind of public statement, but Senator Proxmire's Committee tells me they had great difficulty getting individuals to testify on the issue. Walt Wriston's testimony was vastly more relevant, courageous, and eloquent as usual than mine, but I finally also decided that something had to be said about this. And I think some changes were made at least at the margin in the way the Chrysler plan is going to be implemented, such as instituting review boards and financial viability tests. All I am trying to suggest is that I think it is too easy for businessmen to suggest that there is a problem "out there" about perceptions of the business system. Until some of us in the business world forget some of our collegial relationships with each other (in the case of the Chrysler matter, two of our esteemed competitors told me candidly that they were afraid to say anything because some of their clients would not like it). We will always have a reason when a public, controversial issue comes up to say nothing. I really think that we have to look at the so-called media problem as resulting from our lack of courage and willingness to say anything that is newsworthy as another source of the problem.

Summary of Discussion

A variety of topics in international economics were probed. Walter Wriston strongly challenged the notion that growing LDC debt represents a serious threat to the world economy. The fears of widespread defaults by LDCs after the 1973 oil price increase were widely held. Calmer voices arguing that world financial markets would function well could not be heard in the din. But the fact is that the financial markets operated as Wriston expected, and no serious problems of default have arisen. The record of debt is better for the LDCs than for many United

States industries. Indeed, the dollar and gold reserves of the non-oil-exporting LDCs are $30 billion greater than before the OPEC price increase. And it is as true today, in Wriston's view, that the "burgeoning" LDC debt in coming years is a nonissue. Debt rescheduling by LDCs is not a matter for hand wringing; it is what the United States Treasury does every time it sells a treasury bill. The only real economic issue in Wriston's view is whether the exports of LDCs and their cushion of gold and dollar reserves will continue to give them access to financial markets. And that is a very different issue from a "$600 billion problem." Peter Peterson disagreed to this extent: he said this needed to be looked at on a country by country basis. He believed there might well be countries, perhaps a considerable number, which would have significant problems getting financing.

David Packard offered an optimistic appraisal of the increasing ability of firms to export to the Japanese market. In the past year, alone, the Hewlett-Packard Company has doubled its exports to Japan, to a level that is almost comparable to its exports to Germany. What remains for American businesses is that they become more aggressive in pursuing openings in the Japanese market.

Richard Caves stressed that many apparent problems of United States competitiveness and the decline in the United States share of world output and trade, merely reflect developments in the rest of the world. It is the rapid growth abroad, not necessarily our poor performance, that underlies the drop. Peter Peterson disagreed. He believed that our performance in share of manufactured exports, while improving recently, had reflected both the serious relative decline in relative growth in manufacturing productivity and less effective export programs by United States companies.

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