STATEMENT SUBMITTED TO THE TEMPORARY NATIONAL ECONOMIC COMMITTEE

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by

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I have been asked to present information relating to the magnitude of the various outlets for saving since 1921 and the relation of the total to the national income. The data which I shall present have been worked up in the Division of Research and Statistics of the Board of Governors of the Federal Reserve System, of which Dr. E. A. Goldenweiser is the Director. Being mostly of a preliminary nature, the data have not as yet been published in the present form.

It may make it easier to follow the charts and figures presented and to appraise their significance if they are prefaced by a brief description of the conception of the way our economy works which underlies the choice of charts and figures placed before you.

If we think of the national income as a stream of goods and services, all represented by their dollar equivalents, we can take the next step and consider the factors that tend to keep the stream going uninterruptedly, and the factors that tend to obstruct and divert the stream. When a person earns wages and spends them for living expenses as rapidly as he receives them, there is no interruption in the stream. When a corporation takes in money in exchange

for the goods it produces, and disburses it at the same rate for wages, materials, power, and dividends, there is no interruption.

When, however, a part of the wages received or of money realized for sales is not disbursed but is retained by the recipient- either in the form of cash or of deposits- or is used to pay off debts, or even if it is invested in securities, there may be an interruption in the even flow of the money stream. Whether there is or is not depends on whether the money thus withdrawn is kept idle, or hoarded, or whether it is returned to the stream through disbursement for new plant and equipment, or for renovation or enlargement of existing plant, or offset by the expenditure of an equal amount. The money thus restored continues to be a saving by the individual, but it is no longer a withdrawal from the income stream.

The analysis underlying the charts and tables here presented, in other words, separates the act of saving, which when taken by itself represents a withdrawal from the income stream, from the act of expenditure which restores the money to the stream. Such a separation is necessary for a clear analysis and is logical because in most cases offsetting expenditures are made by groups different from the original savers. The principal exception is industrial capital expenditures financed out of corporate income and depreciation allowances, and even there the act of saving and the actual capital expenditure may be quite unrelated to each other.

The selling price of all goods produced covers not only the current expenses of wages and materials but also depreciation and depletion charges, taxes, interest and profits. Some of these funds are retained by business; others are paid out to individuals and some of these, especially interest and dividends, are likely to be saved. Hence, only a portion of the gross national income is available for consumption. If the stream of money payments is not to decline, an amount equivalent to the portion of the gross national income not spent on consumption must be spent on plant and equipment, etc. It is proper, therefore, to speak not only of outlets for saving but of offsets to saving.

It is not implied in this analysis, as is sometimes believed, that there is something uneconomic or anti-social in the act of saving. From the point of view of an individual it is a natural and prudent act, and from the point of view of the economy as a whole it is necessary in order to provide a source of funds for the replacement and expansion of our plant and equipment. The point is simply that if money is withdrawn from the income stream by saving, it has to be offset by an equal expenditure on plant, etc., if the flow of money payments and the total demand for goods of all kinds is not to be interrupted.

The most commonly accepted definition of saving, as applied to the nation as a whole, is that it is the difference between the national income and the amount spent out of that income on consumption. Since the national income is the value of all goods and

services produced in a period, the total volume of saving is also the difference between the value of goods and services produced in a period and the value of goods and services consumed. In other words, the volume of expenditures on plant and equipment, construction, etc., may not only be regarded as an offset to or outlet for current saving, but it is also a measure of saving as just defined.

It is obvious that the larger the portion of a given national income that is withheld from consumption, the larger must be the expenditures that represent offsets to saving, if the national income is not to decline. To state the reverse of this proposition, the larger the portion of income that is spent on consumption, the smaller need be the volume of capital expenditures to sustain a given national income. How much income will result from a given increase in capital expenditures depends on the proportion of the additional income that will be consumed and the proportion that will be saved.

Still another inference may be drawn from this line of reasoning. If it can be established what proportion of an assumed national income will be saved, or withheld from current consumption, it is also established how large the outlets for, or offsets to saving will have to be to attain and sustain that national income. Hence the problem of maintaining full employment is the problem of securing sufficient outlets for the saving that will accompany full employment.

The following types of expenditures are generally considered to represent the major outlets for or offsets to gross saving:

1. Expenditures on plant and equipment charged to capital account.

These are financed from such sources as depreciation allowances, retained earnings, borrowings and stock issues.

2. Private housing expenditures.

Since the bulk of expenditures on new residential construction is financed by borrowing, and little comes out of current income, it is customary to consider such expenditures as outlets for saving.

3. Value of the change in inventories.

An increase in inventories represents an increased value of goods produced but not purchased out of final consumer income. The monetary effect of a change, while it is taking place, is strictly analogous to the effect of plant and equipment expenditures.

4. Net additions to disposable cash income attributable to public bodies.

This category is chosen rather than expenditures on public construction because we are here more interested in the dynamics of the flow of income than in the measurement of the addition to the durable goods of the community. Public expenditures that add to disposable cash income more than tax receipts decrease disposable cash income, constitute an offset for an equivalent amount of current saving.

5. Net foreign balance on current account.

This represents the excess of payments received by us from foreigners over payments made by us to foreigners on other than capital movements. An excess is a net addition to disposable domestic cash income and hence may be regarded as an offset to domestic saving. It represents goods produced and not sold to domestic consumers and hence, for present purposes, is analogous to plant expenditures.

6. Net change in consumer credit.

An increase in this category might either be treated as negative saving or as an outlet for current saving. The latter alternative is adopted here.

Data on the income-producing expenditures that offset saving, for the period 1921-1938, listed above, are presented in Tables I-A to I-E, and are plotted on Charts I-A to I-E.

The figures presented below differ in reliability and are subject to revision. They are believed, however, to give a reasonably accurate approximation of the total income-producing expenditures that offset saving and to give a more accurate approximation of the magnitude of current gross savings, i. e., of gross income not spent in consumption, than is now possible to obtain by direct measurement. Most of the series are available only on an annual basis.

TABLE Ia

Income-Producing Expenditures that Offset Saving

(In millions of dollars)

	Plant	Equipment	Total Plant and Equipment
1921	2,344	2,751	5,095
1922	2,536	3,130	5,666
1923	3,137	4,628	7,765
1924	3,183	4,359	7,542
1925	3,456	4,613	8,069
1926	4,031	4,903	8,934
1927	3,960	4,649	8,609
1928	3,942	4,807	8,749
1929	4,365	5,680	10,045
1930	3,683	4,624	8,307
1931	2,166	2,979	5,145
1932	1,188	1,646	2,834
1933	874	1,559	2,433
1934	1,102	2,357	3,459
1935	1,245	3,145	4,390
1936	1,628	4,367	5,995
1937	2,175	5,341	7,516
1938	1,816	3,646	5,462p

Note: for sources and methods, see appendix to testimony of Lauchlin Currie.

CHART I-A

INCOME-PRODUCING EXPENDITURES THAT OFFSET SAVING

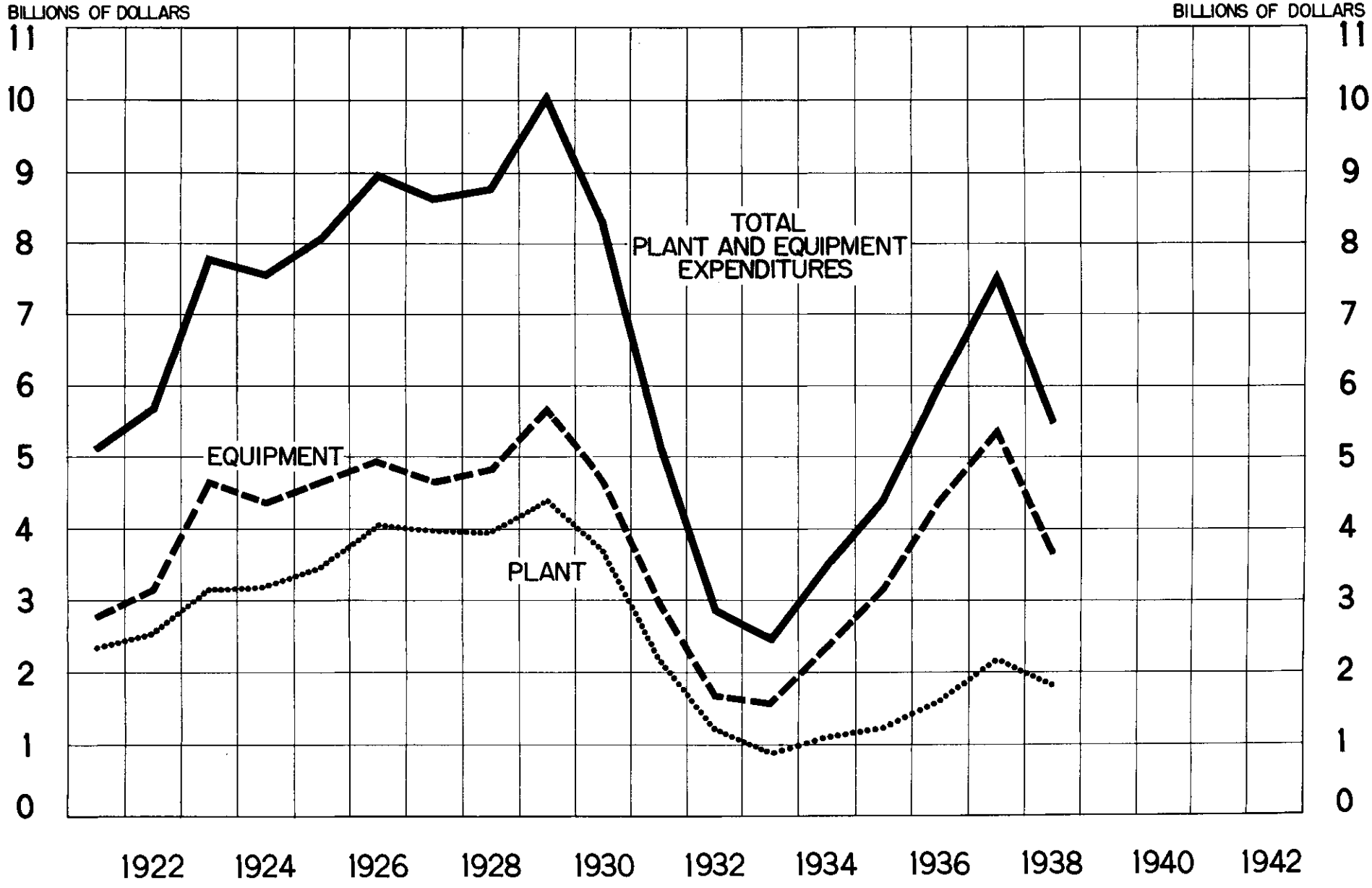


Table I-A and Chart I-A bring out the interesting fact that by 1937 all equipment expenditures had recovered to 94 percent of the 1929 figure and were in excess of all previous years. This has a direct bearing on the question as to what extent the industrial, commercial and agricultural equipment of the country has been kept up to date. Plant expenditures, on the other hand, amounted in 1937 to only half of the 1929 total.

Another interesting fact that emerges from these figures is the comparative smallness of the increase in plant and equipment expenditures, especially equipment, that occurred from 1923 to 1928, despite the considerable rise in production and consumption that occurred in this period. Yet, generally speaking, a comfortable reserve margin of productive capacity was maintained throughout the period.

Table I-B and Chart I-B show the plant and equipment expenditures in mining and manufacturing, utilities, railroads, and commercial and miscellaneous. It will be observed that in 1937, capital expenditures in mining and manufacturing exceeded the 1928 level. Equipment expenditures alone (not shown in the table) approximated the peak 1929 volume. The wide gap between 1929 and 1937 in commercial and miscellaneous was almost entirely attributable to expenditures on commercial buildings, which aggregated $1.2 billion in 1929 as contrasted with $370 million in 1937.

TABLE Ib

Income-Producing Expenditures that Offset Saving (continued)

(In millions of dollars)

	Mining and Manufacturing	All Public Utility	Railroad	Commercial and Miscellaneous
1921	1,951	755	550	1,351
1922	2,073	1,061	434	1,559
1923	2,581	1,483	1,077	1,929
1924	2,265	1,718	901	1,993
1925	2,625	1,597	728	2,361
1926	3,045	1,621	883	2,625
1927	2,757	1,694	751	2,589
1928	2,962	1,644	673	2,601
1929	3,490	1,917	840	2,836
1930	2,449	1,893	865	2,335
1931	1,402	1,340	360	1,596
1932	921	722	164	801
1933	993	405	101	645
1934	1,445	472	218	915
1935	1,810	583	166	1,194
1936	2,483	748	306	1,668
1937	3,039	1,024	525	1,958
1938	2,013p	925	238	1,468

Note: for sources and methods, see appendix to testimony of Lauchlin Currie.

CHART I-B

INCOME PRODUCING EXPENDITURES THAT OFFSET SAVING – CONTINUED

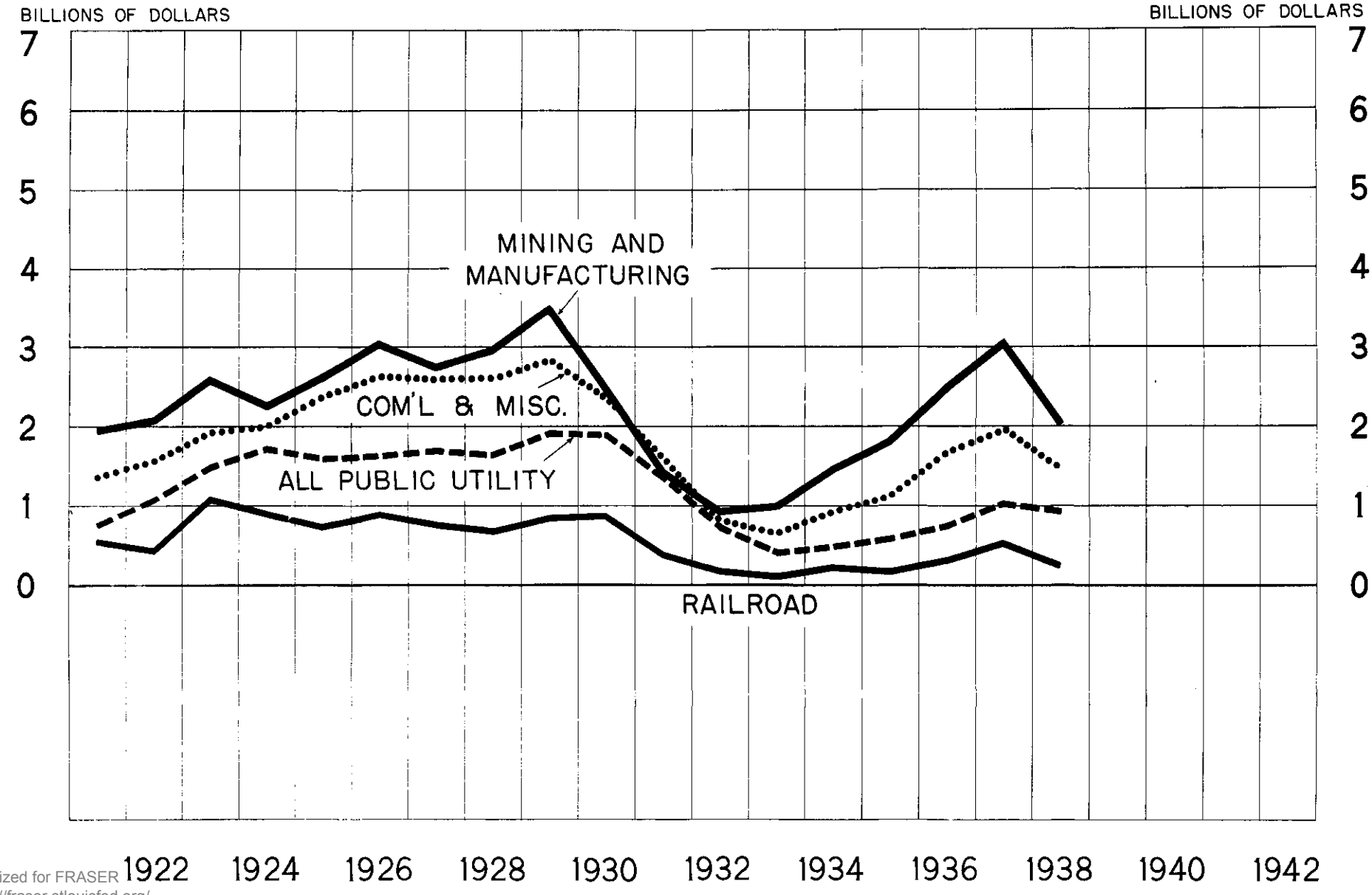


TABLE Ic

Income-Producing Expenditures that Offset Saving (continued)

(In millions of dollars)

Agriculture		Change in Inventories	Foreign-Current Account Balance
1921	488	47	+1,414
1922	539	514	+450
1923	695	2,964	+167
1924	665	-1,056	+712
1925	758	1,523	+386
1926	759	1,246	+156
1927	818	308	+507
1928	869	102	+725
1929	962	2,146	+447
1930	765	-631	+629
1931	446	-1,190	-160
1932	225	-2,327	+131
1933	289	-1,114	+215
1934	409	-1,748	+461
1935	637	1,145	+183
1936	786	2,300	-153
1937	1,000	4,196	-24
1938	820	-1,250p	+965

Note: for sources and methods, see appendix to testimony of Lauchlin Currie.

CHART 1-C

INCOME PRODUCING EXPENDITURES THAT OFFSET SAVING - CONTINUED

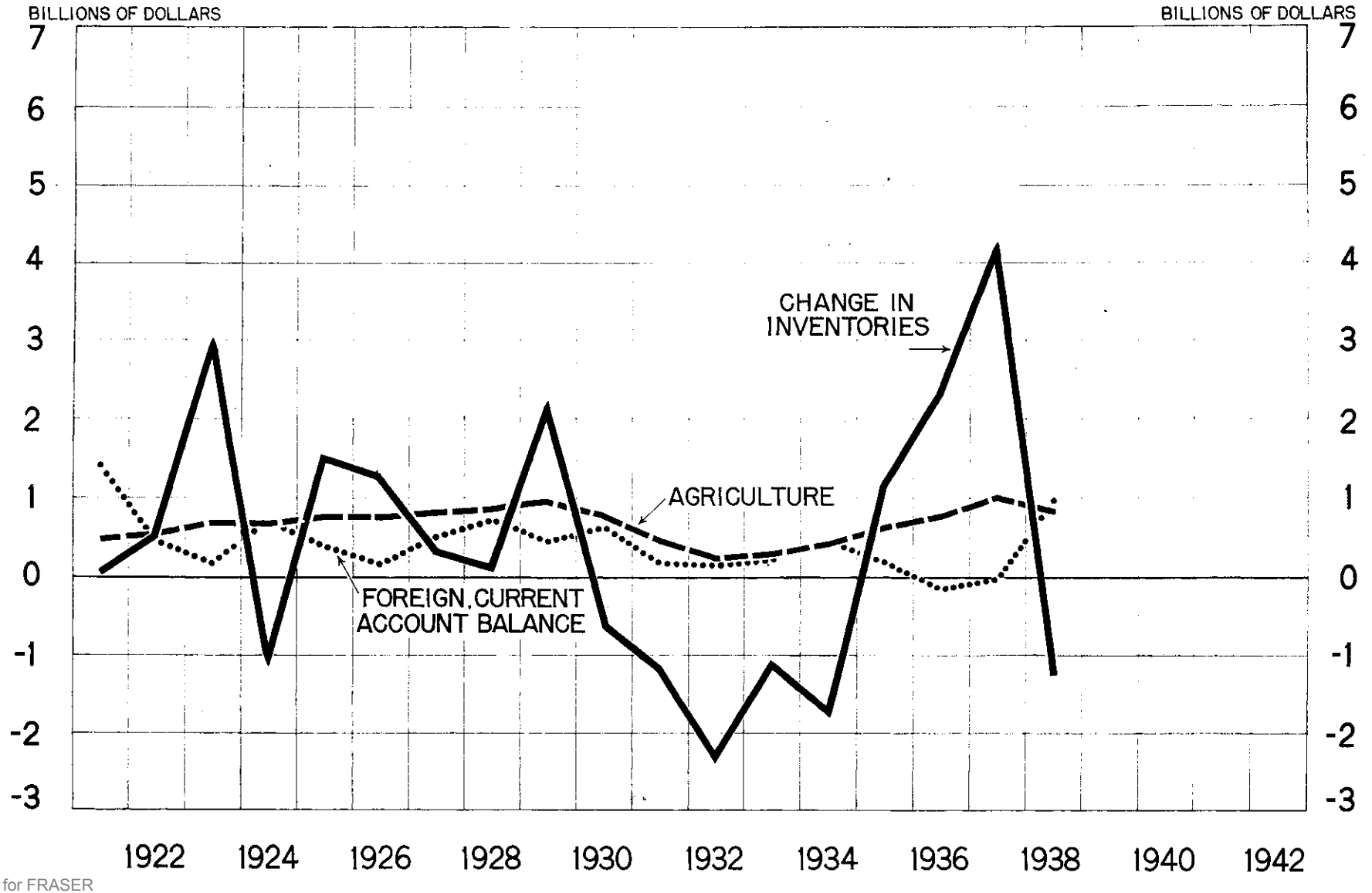


Table I-C and Chart I-C show agricultural plant and equipment expenditures, the value of the yearly change in inventories, and the net amount due us on current international account. By 1937, agricultural capital expenditures approximated the 1929 level. The net excess of exports of goods and services in the Twenties was associated with foreign loans; in 1938, with the drastic decline in imports relative to exports attributable to the business recession here. The increase in inventories in 1937 was the largest annual increase in the post-war period.

Table I-D and Chart I-D show annual expenditures on private housing, on construction by private non-profit institutions such as churches, universities, etc., and the change in consumer expenditures attributable to consumer credit. The chart brings out the drastic slump in housing expenditures and the modest degree of recovery, relative to the Twenties, to date. The recovery has been even less for non-profit construction, which, at its peak in 1927, provided an outlet for $700 million of savings. The preliminary figures on the net extension of consumer credit indicate a total expansion from 1921 to 1929 of $6.5 billion, and an expansion from 1933 to 1937 of $3.5 billion. It is estimated that the expansion in 1937 and the net volume outstanding in that year were in excess of the corresponding 1929 figures.

TABLE Id

Income-Producing Expenditures that Offset Saving (continued)

(In millions of dollars)

	Private Housing	Non-Profit Institutions	Change in Consumer Credit*
1921	1,970	297	340
1922	3,280	387	1,040
1923	4,170	426	1,180
1924	4,420	457	440
1925	4,940	610	900
1926	4,500	692	690
1927	4,250	712	240
1928	4,000	664	800
1929	2,810	568	860
1930	1,600	467	-630
1931	1,110	356	-1,130
1932	330	194	-1,400
1933	270	96	-140
1934	290	96	370
1935	680	114	830
1936	1,250	134	1,290
1937	1,450	190	1,000
1938	1,500	190	-1,400

* Subject to revision.

Note: For sources and methods, see appendix to testimony of Lauchlin Currie.

CHART 1-D

INCOME-PRODUCING EXPENDITURES THAT OFFSET SAVING—CONTINUED

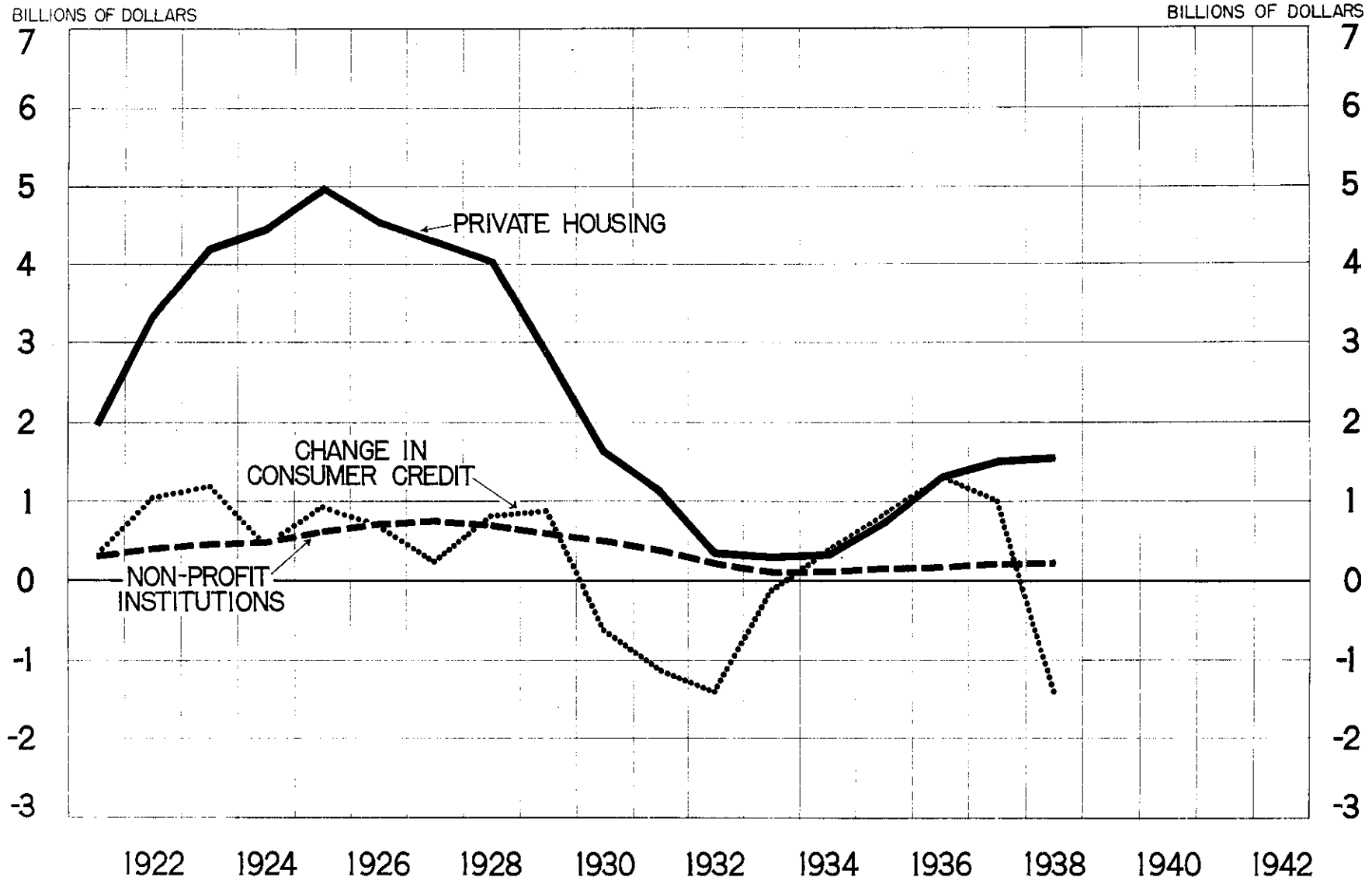


TABLE Ie

(continued)

INCOME-PRODUCING EXPENDITURES THAT OFFSET SAVING

(In millions of dollars)

	Government-Federal	Government-State and Local
1921	-250	899
1922	- 54	799
1923	-301	664
1924	-319	934
1925	-295	822
1926	-509	754
1927	-459	825
1928	- 78	810
1929	-235	928
1930	+386	1,114
1931	2,419	1,365
1932	1,880	807
1933	1,928	-690
1934	3,428	-1,159
1935	3,730	-493
1936	4,337	-398
1937	1,092	-291
1938	2,377	-

Note: For sources and methods, see appendix to testimony of Lauchlin Currie.

CHART 1-E

INCOME-PRODUCING EXPENDITURES THAT OFFSET SAVING—CONTINUED

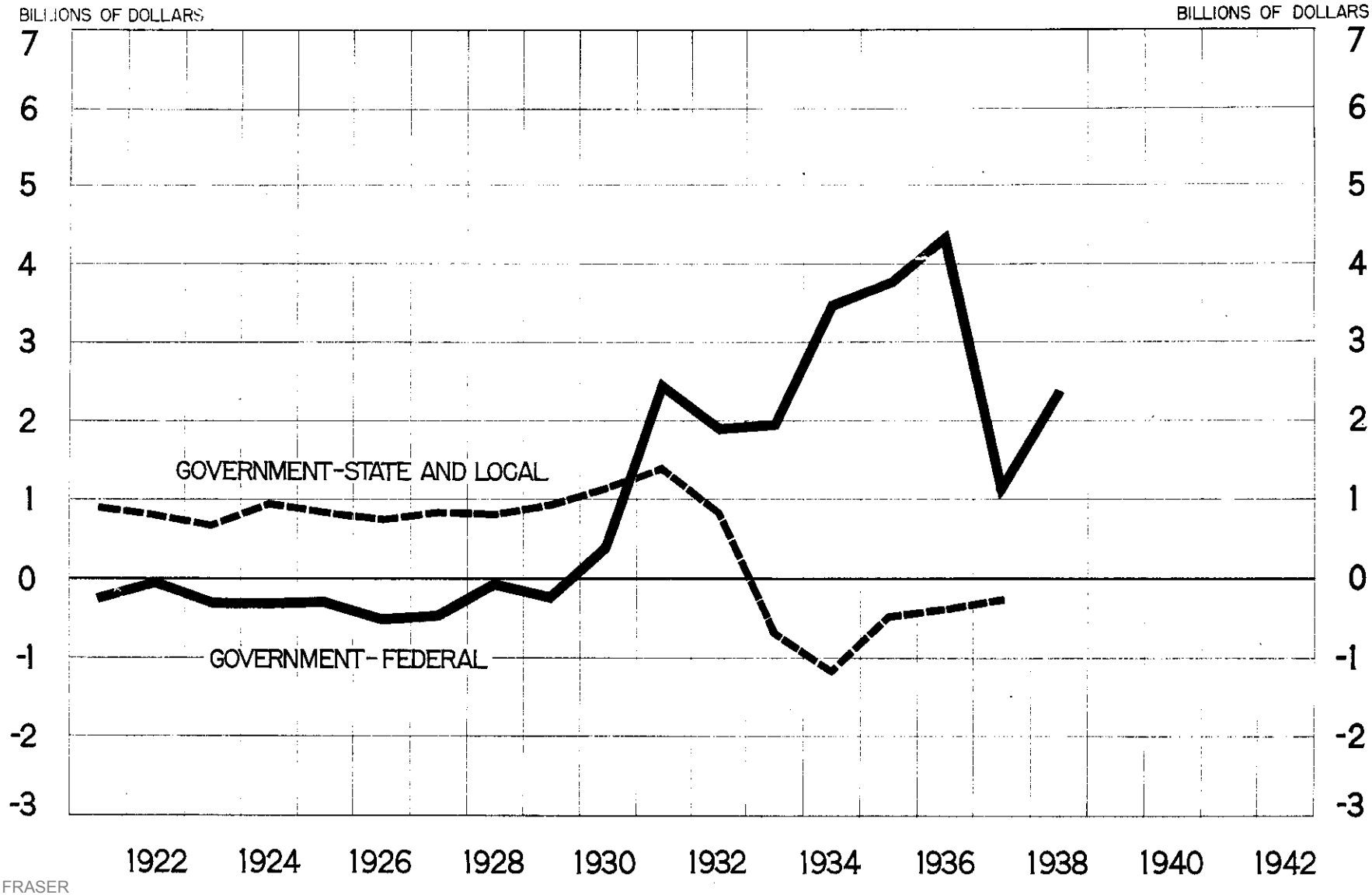


Table I-E and Chart I-E show the estimated annual net addition to, or deduction from, the disposable cash income of the community arising from an excess (or deficit of government cash expenditures giving rise to personal or business income over tax collections out of current income. It will be noted that local governments provided an offset to savings of nearly $1 billion a year in the Twenties and that the relative position of federal and local governments in this connection since 1933 has been completely changed.

The Committee may be interested in the relation of capital expenditures to output in three important fields, mining and manufacturing, electric power, and railroads. (Tables II, III, and IV). The broad relationships are presented graphically in Charts II, III and IV.

Table II suggests that there is a close relationship between the volume of plant and equipment expenditures in mining and manufacturing and industrial production. It should be remembered, however, that the comparison is between a physical and a value series and since prices per unit of capacity were lower in 1937 than in 1929, an equal volume of capital expenditures should presumably represent more additional productive capacity in the latter year.

In the case of electric power, Table III, figures for the power output in January of each year, ordinarily a peak month, and for

Table II

MINING AND MANUFACTURING EXPENDITURES FOR
PLANT AND EQUIPMENT AND INDEX OF INDUSTRIAL PRODUCTION

	Plant and Equipment expenditures ($000,000)	Index of production
1921	1,951	67
1922	2,073	85
1923	2,581	101
1924	2,265	95
1925	2,625	104
1926	3,045	108
1927	2,757	106
1928	2,962	111
1929	3,490	119
1930	2,449	96
1931	1,402	81
1932	921	64
1933	993	76
1934	1,445	79
1935	1,810	90
1936	2,483	105
1937	3,039	110
1938	2,013	86

Note: for sources see appendix to testimony of Lauchlin Currie.

CHART II

MINING & MANUFACTURING EXPENDITURES FOR PLANT & EQUIPMENT & INDEX OF INDUSTRIAL PRODUCTION

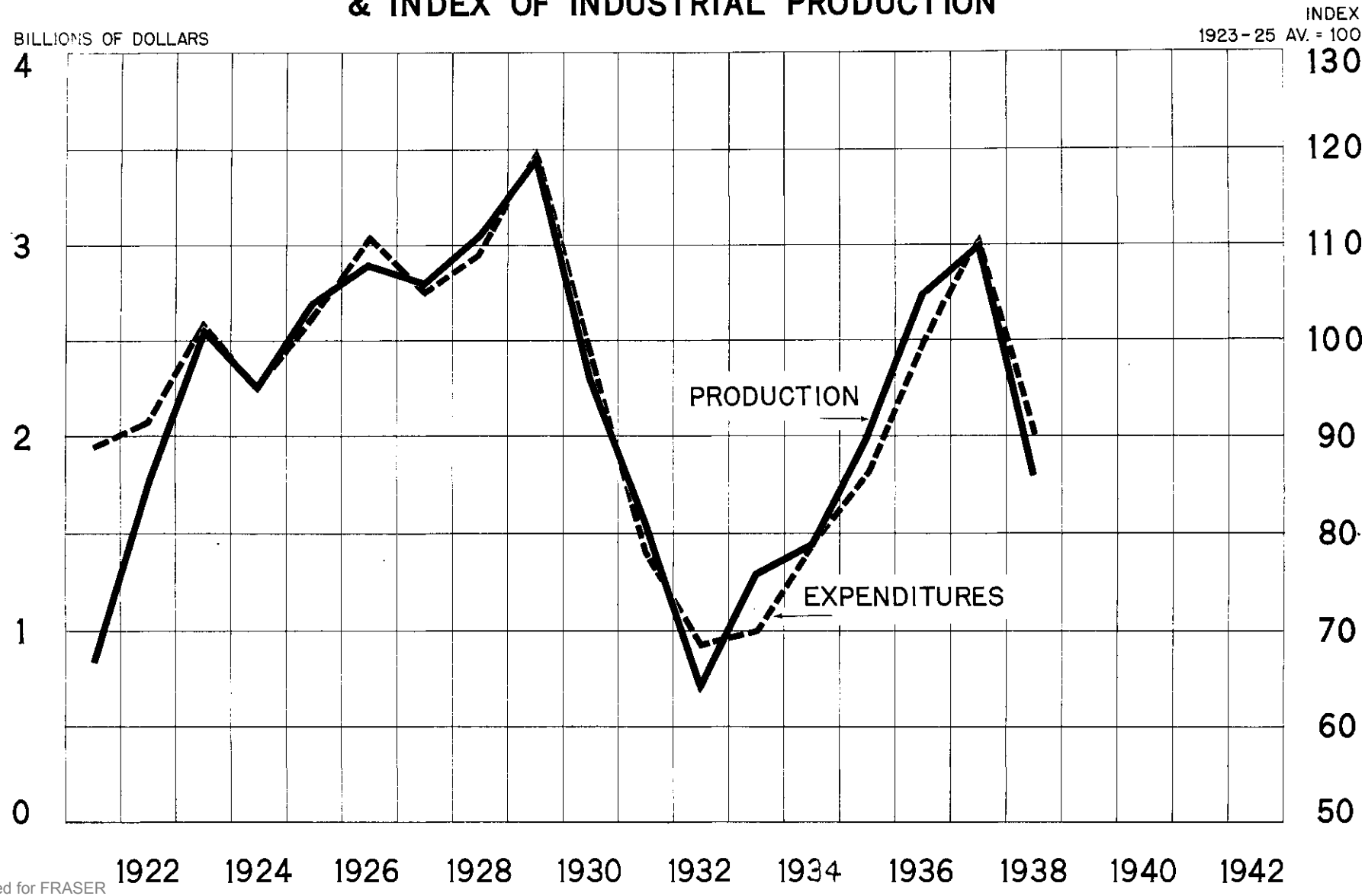


TABLE III

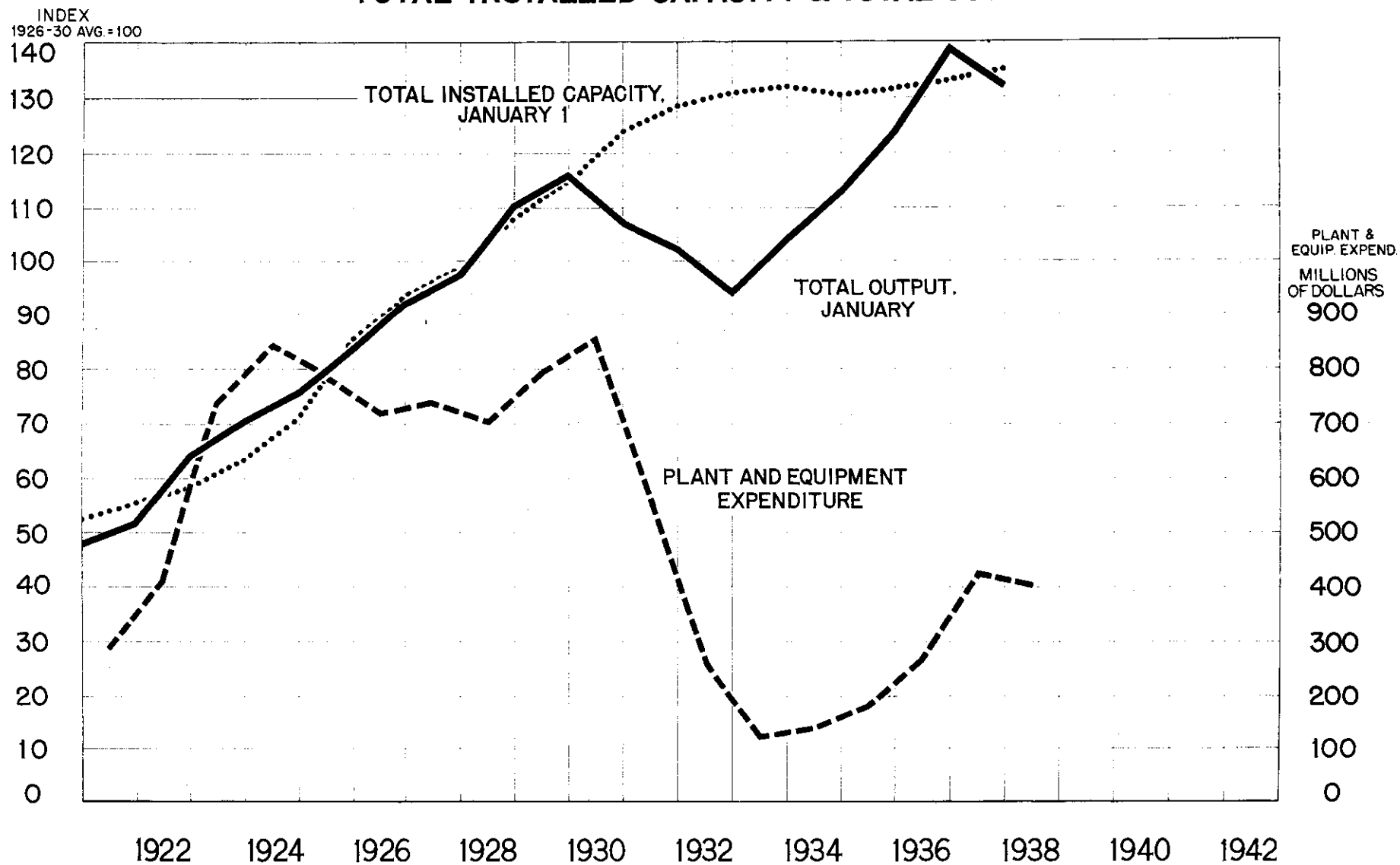
ELECTRIC POWER EXPENDITURES FOR PLANT AND EQUIPMENT, TOTAL INSTALLED CAPACITY, AND PEAK OUTPUT

	Index of Total Output in January 1926-30 Av = 100	Index of Total Installed Capacity as of January 1 1926-30 Av = 100	Plant and Equipment Expenditures ($000,000)
1921	48.0	52.4	288
1922	51.7	55.7	408
1923	64.3	58.1	738
1924	70.5	63.5	844
1925	75.7	71.0	787
1926	83.7	85.6	718
1927	92.0	92.5	738
1928	97.4	98.4	701
1929	110.5	108.2	793
1930	116.3	115.2	855
1931	107.1	124.1	555
1932	102.0	128.8	265
1933	94.1	131.1	120
1934	103.8	132.0	137
1935	113.0	130.4	179
1936	124.2	131.4	269
1937	138.9	133.2	424
1938	132.0	135.2	403

Note: For sources see appendix to testimony of Lauchlin Currie.

CHART III

ELECTRIC POWER EXPENDITURES FOR PLANT & EQUIPMENT, & INDEXES OF TOTAL INSTALLED CAPACITY & TOTAL OUTPUT



generating capacity as of the same month, were converted into index numbers with the January averages for 1926-30 equal to 100. It should be kept in mind that this procedure shows only the relative movements of output and capacity and not their absolute relationship. Capacity was actually well above output throughout the period. Capital expenditures, in dollars, are shown on the same chart. In general, it appears that whenever the index of output exceeds the index of capacity, expenditures tend to rise or remain at a high level, and vice versa. Because of the increase in generating capacity in the years 1929-1932, and the decline in peak power output, it was not until 1936-1937 that output got back to the 1929 relationship to generating capacity for the industry as a whole.

For the railroads, Table IV, expenditures for equipment alone are contrasted with total and serviceable freight cars owned, with yearly peak car loadings and yearly minimum surplus cars. The acute car shortage of the early Twenties gave rise to a heavy volume of equipment expenditures. It will be observed that despite the steady and drastic decline in serviceable cars through retirements since 1929, peak car loadings fell off to such an extent that it was not until 1936 that the surplus cars at the yearly peak of loadings were reduced to the level prevailing in the late twenties.

TABLE IV

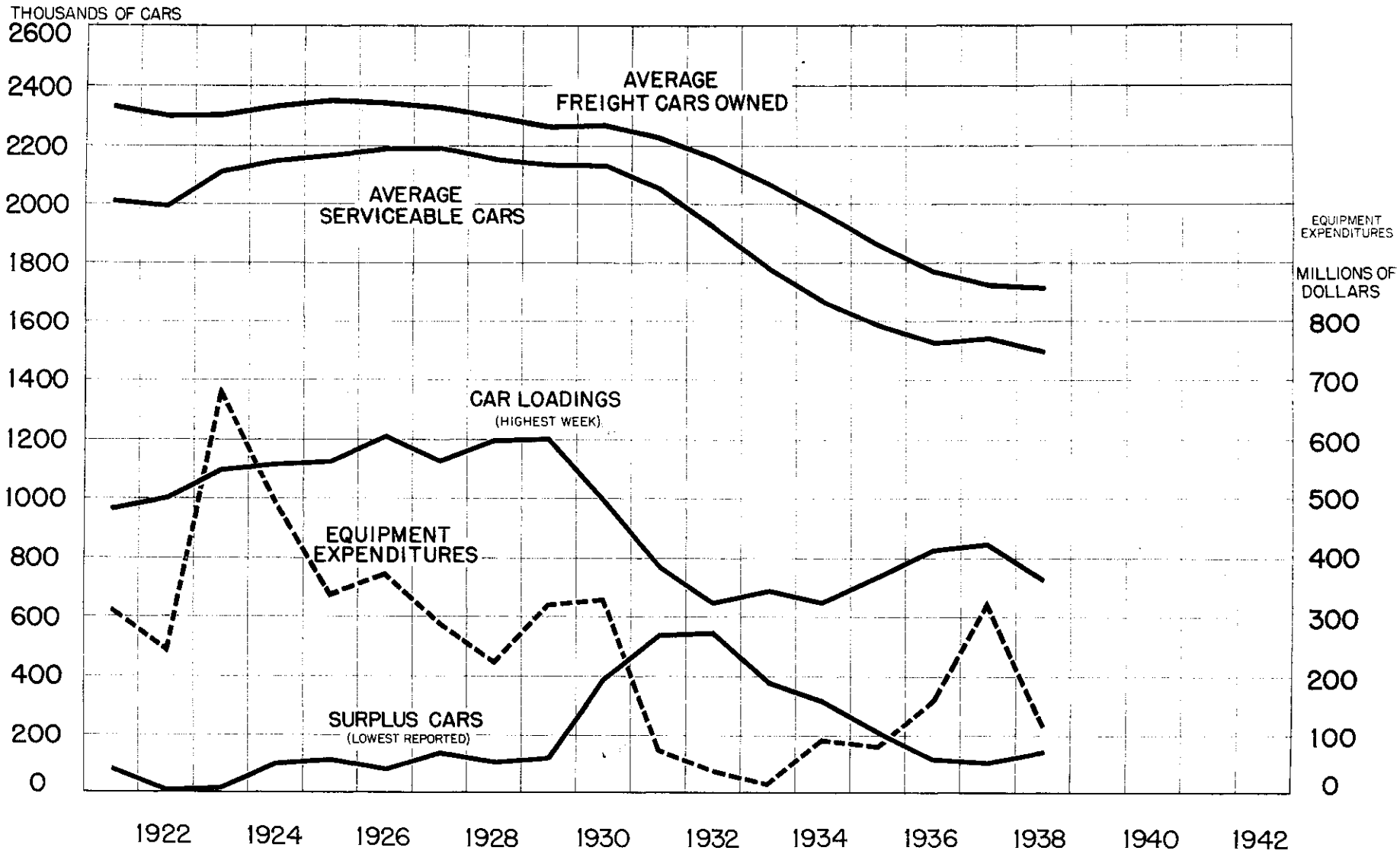
RAILROAD EQUIPMENT EXPENDITURES,
AVAILABLE FREIGHT CARS, AND CARLOADINGS

	Average Freight Cars Owned	Average Serviceable Cars	Surplus Cars Lowest Reported	Carloadings Highest Week	Equipment Expenditure
	(000)	(000)	(000)	(000)	($000,000)
1921	2,317	2,008	80	965	311
1922	2,304	1,993	4	1,000	246
1923	2,303	2,113	14	1,098	682
1924	2,331	2,146	99	1,113	494
1925	2,355	2,168	112	1,124	338
1926	2,345	2,190	81	1,209	372
1927	2,329	2,191	135	1,129	289
1928	2,298	2,154	104	1,197	224
1929	2,267	2,132	119	1,202	321
1930	2,270	2,128	393	985	328
1931	2,229	2,053	535	775	73
1932	2,160	1,922	545	651	36
1933	2,072	1,779	380	687	15
1934	1,969	1,674	318	646	92
1935	1,863	1,584	208	734	79
1936	1,770	1,526	112	826	159
1937	1,723	1,543	104	847	323
1938	1,713	1,496	139	726	115

Note: For sources and methods, see appendix to testimony of Lauchlin Currie.

CHART 4

RAILROAD EQUIPMENT EXPENDITURES
AVAILABLE FREIGHT CARS AND CAR LOADINGS



Equipment expenditures in that year approximated the 1929 level. Despite increasing efficiency, it would seem obvious that any substantial gain in car loadings would necessitate heavy new equipment expenditures.

Table V and Chart V show the percentage composition of income-producing expenditures that offset saving in 1925 and 1937, when the national income was roughly the same, and in 1929, the peak year for expenditures and income.

It will be observed, in comparing 1937 with 1925, that the most marked differences were in inventories and housing. In the former year the increase in inventories amounted to 9 percent of the total, and housing 33 percent. In the latter year, the increase in inventories amounted to 28 percent of the total, and housing only to 11 percent. Plant and equipment expenditures bore nearly the same relationship to the total in both years. The composition of the income-producing expenditures has obviously a most important bearing on the stability of the income level. An increase of $4 billion in inventories in one year is a highly unstable offset to saving in comparison with an equal volume of housing expenditures. In 1929 inventories were increased more than in 1925, and housing expenditures were lower. The share of plant and equipment expenditures was unusually high.

TABLE V

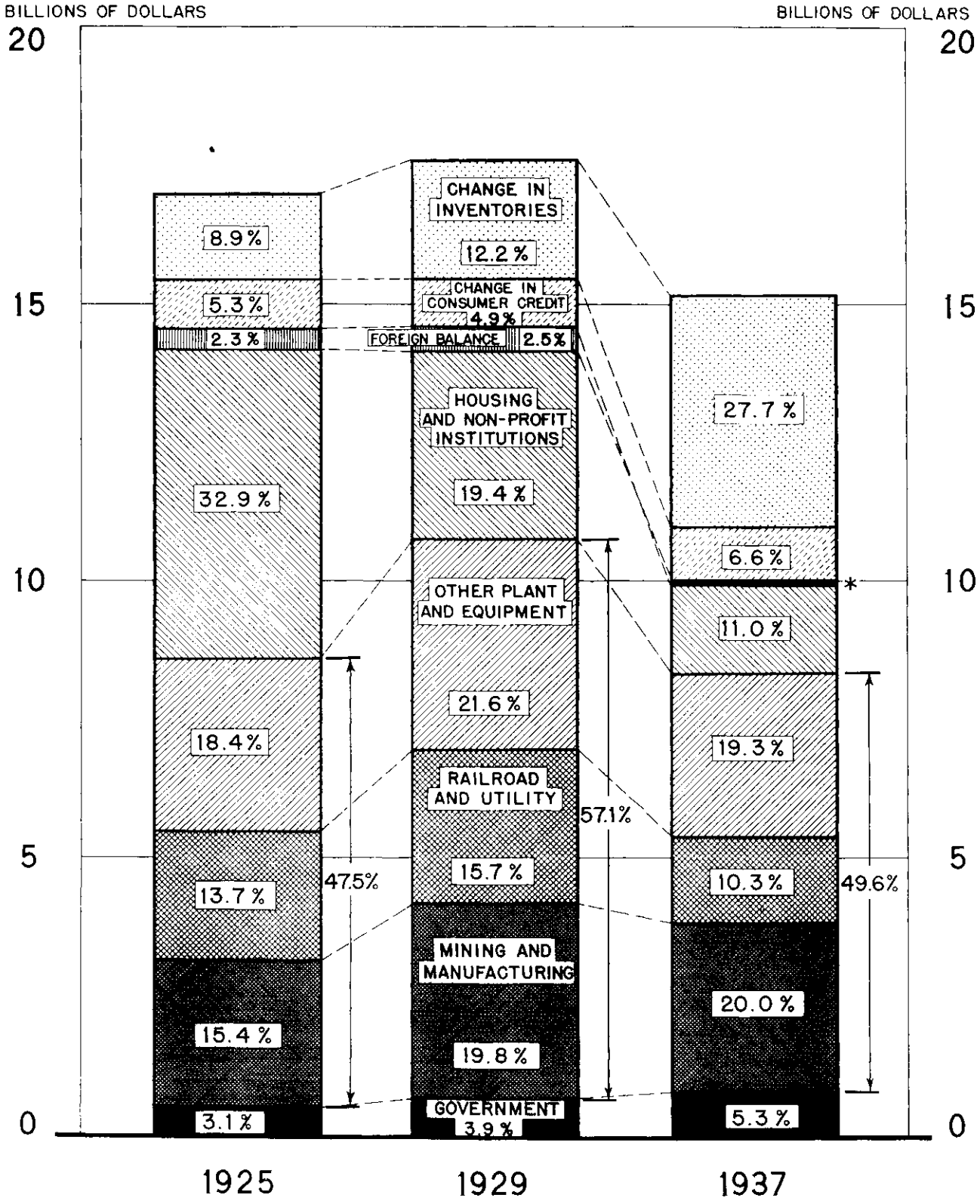
COMPOSITION OF INCOME-PRODUCING EXPENDITURES THAT OFFSET SAVING, 1925, 1929, AND 1937

	1925		1929		1937	
	Millions of Dollars	% of Total	Millions of Dollars	% of Total	Millions of Dollars	% of Total
Government	527	3.1	693	3.9	801	5.3
Plant & Equipment	8,069	47.5	10,045	57.1	7,516	49.6
Mining & Manufact.	2,625	15.4	3,490	19.8	3,039	20.0
Railroads & Util.	2,325	13.7	2,757	15.7	1,549	10.3
Other	3,119	18.4	3,798	21.6	2,928	19.3
Housing & Non-profit Institutions	5,585	32.9	3,409	19.4	1,670	11.0
Foreign Bal.	386	2.3	447	2.5	- 24	- 0.2
Change in Consumer Credit	900	5.3	860	4.9	1,000	6.6
Change in Inventories	1,523	8.9	2,146	12.2	4,196	27.7
Total	16,990	100.0	17,600	100.0	15,159	100.0

Note: For sources see appendix to testimony of Lauchlin Currie.

CHART V

COMPOSITION OF INCOME-PRODUCING EXPENDITURES THAT OFFSET SAVING



*MINUS 0.2%

It is interesting to note that in 1937, mainly because of the sharp increase in federal tax collections, the offset to saving provided by public bodies was little larger than in 1925 or 1929. Plant and equipment expenditures in all of mining and manufacturing comprise a relatively small proportion of the total offsets to saving, amounting to 15 percent in 1925 and 20 percent in 1929. They comprised as large a proportion of the total in 1937 as in the peak year 1929.

I turn now to the second part of the data requested of me, the relation of income-producing expenditures that offset saving to the national income. Since the figures presented to this point include gross capital expenditures on buildings, plant and equipment, it is proper to relate them to figures of national income before deduction of depreciation allowances. For our present purposes we may call this series the gross national income, as distinguished from the customary national income, which is net. Also, for present purposes, I have adjusted the income-producing expenditures series by adding 60 percent of the aggregate volume of the current year to 40 percent of the preceding year.

Table VI presents the gross national income, and the total of income-producing expenditures that offset saving, for the years 1921 to 1938. The series are plotted on Chart VI.

TABLE VI

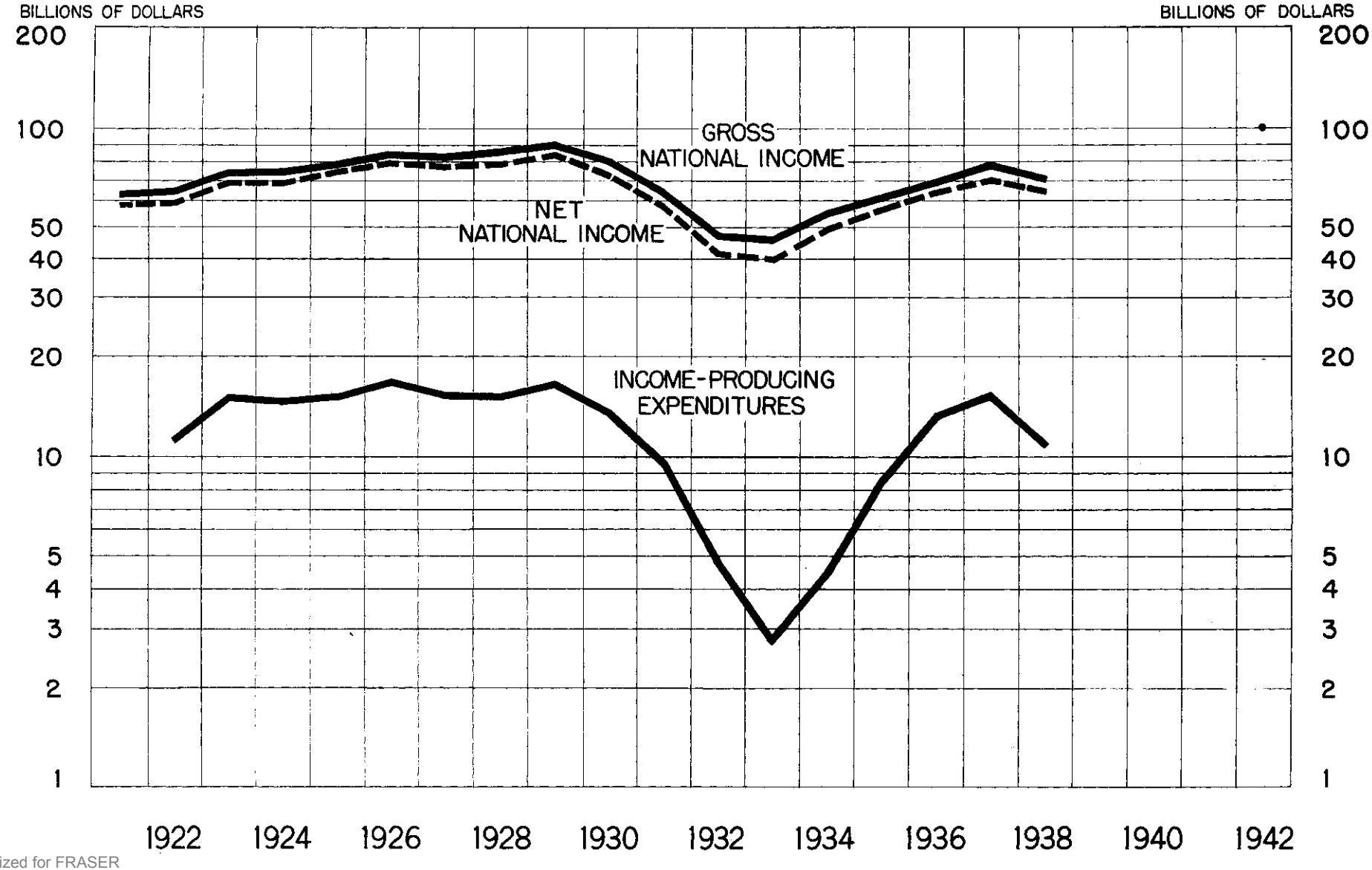
NATIONAL INCOME AND TOTAL INCOME-PRODUCING EXPENDITURES THAT OFFSET SAVING
(In millions of dollars)

	Gross National Income	Net National Income	Income-Producing Expenditures	
			Adjusted Total	% of Gross Natl. Income
1921	63,751	57,683	---	---
1922	64,295	58,704	11,201	17.4
1923	74,784	68,281	15,087	20.2
1924	75,161	68,904	14,729	19.6
1925	79,686	73,275	15,462	19.4
1926	84,813	77,600	16,695	19.7
1927	82,708	75,412	15,616	18.9
1928	86,167	78,633	15,495	18.0
1929	89,984	81,917	16,881	18.8
1930	79,764	71,965	13,802	17.3
1931	63,901	56,709	9,459	14.8
1932	47,446	41,034	4,776	10.1
1933	46,217	40,101	2,792	6.0
1934	55,839	49,290	4,335	7.8
1935	61,681	55,137	8,446	13.7
1936	69,800	63,105	13,110	18.8
1937	78,200	70,727	15,009	19.2
1938	70,900	63,550	10,783	15.2

Note: For sources and methods, see appendix to testimony of Lauchlin Currie.

CHART VI

NATIONAL INCOME & TOTAL INCOME-PRODUCING EXPENDITURES THAT OFFSET SAVING



Several points of interest are suggested by relating the income-producing expenditures that offset saving to the gross national income. In the first place there is apparent a tendency for the offsets to current saving to increase faster than income in the recoveries of 1921-23 and 1933-37, and to decrease faster than the decline of income from 1929-1933 and from 1937 to 1938. In other words, as recovery proceeds, every additional dollar of capital expenditure generates a proportionately less increase in total income. This is perfectly consistent with the general impression that the proportion of income spent on consumption decreases as income increases, and vice versa.

The data indicate one marked exception to this expectation. In the period from 1923 to 1929 the gross national income increased relatively to saving. A fairly stable level of income-producing expenditures was accompanied by a fairly steady rise in income. The explanation for this period of increasing consumption relative to income may possibly be found in the consumption expenditures stimulated by the rising speculation in stocks. Not only was the incentive to save out of current income diminished, but in addition many savings must have been canalized back into consumption through the medium of brokers' loans and cashing of paper profits.

The second important inference brought out by the chart is that by 1937 as large a portion of the gross national income was saved as in the Twenties, the percentages being 19.2 for 1937 and an average of 19.2 for the years 1923-1929.

A further observation may be of interest. If the same relationship between income-producing expenditures that offset saving and the gross national income prevails in periods of relative prosperity in the future as in the past, a gross national income of $100 billion (or a net income of around $90 billion) would be associated with a figure of $19 billion of income-producing expenditures. If the potential saving on a $90 billion net income should turn out to be higher or lower in the future relative to the Twenties, a correspondingly larger or smaller volume of offsets to saving than $19 billion will be necessary.

APPENDIX ON SOURCES AND METHODS TO STATEMENT
SUBMITTED TO THE TEMPORARY NATIONAL ECONOMIC COMMITTEE

by
Lauchlin Currie

Table I-A

Plant and Equipment

Mining and manufacturing.

Plant expenditures consist of factory construction and mining development outlays (exclusive of purchases of machinery, land, and mineral reserves). The factory construction estimates are those of the Department of Commerce, which are based on data compiled by the F. W. Dodge Corporation. Those for mining development outlays have been prepared by Mr. Terborgh, of the Division of Research and Statistics of the Board of Governors, of the Federal Reserve System, and are strictly preliminary. They include the cost of drilling oil and gas wells, and such development costs in other branches of mining as are normally chargeable to capital account. The estimates for mining and manufacturing equipment have also been prepared by Mr. Terborgh. They were obtained by (1) tabulating from the censuses of manufactures the output of machinery and equipment going into this field (including estimated allocations of a part of the output of items used also in other fields); (2) interpolating for inter-censal years; (3) adjusting for exports and imports to get the output going to domestic users; (4) raising the value thus derived to

allow for transportation costs and distributive margins between producer and consumer; and (5) raising it further to allow for estimated under-tabulation and for an estimate of equipment produced within the establishments using it (hence not included in the census data). Only machinery and equipment are included which are customarily charged to capital account by the users. Studies of capital formation by the National Bureau of Economic Research have been used to facilitate some steps in the procedure.

Commercial and miscellaneous.

Plant in this case consists of commercial buildings, for the construction of which Department of Commerce estimates have been used. These are derived from data compiled by the F. W. Dodge Corporation. For machinery and equipment, the estimates have been prepared by Mr. Terborgh, by a procedure identical with that just described in the case of mining and manufacturing.

Railroads.

Estimates for both plant (way and structures) and equipment have been based on data compiled by the Association of American Railroads. The data as published by the association have been adjusted by the subtraction of land purchases (from I.C.C. reports) and by the addition of an estimate for Class II and III carriers.

Public utilities.

This classification includes electric power, telephones, transit, gas, pipe lines, telegraphs, and cables. The series used, both for total

expenditures and for the breakdown between plant and equipment, are those of the Department of Commerce, which are in turn based on tabulations by trade associations and trade journals, as described in the Department's publication, Construction Activity in the United States.

Agriculture.

The figures are Department of Agriculture estimates for farm capital expenditures, exclusive of passenger automobiles. It should be observed that these estimates are now undergoing a thorough revision, which is expected to be completed shortly. The new estimates will, of course, supersede the ones used here.

Table I-B

See note above for Table I-A.

Table I-C

For agricultural plant and equipment expenditures see note above for Table I-A.

The foreign current balance is derived from The Balance of International Payments of the United States, Department of Commerce.

Table I-C

Inventories.

Figures for 1921 to 1933 are derived from data published in Commodity Flow and Capital Formation, by Simon Kuznets, of the National Bureau of Economic Research. The published data represent the value in

current dollars of the change in physical inventories (expressed as the total value of all inventories in 1929 dollars). From these totals were deducted the corresponding figures for inventories in the finance group. Figures for 1934 to 1938 are estimates. In general, methods similar to those used by Kuznets were adopted in making these estimates. For 1934 and 1935, Statistics of Income data furnished the primary basis for the estimates. For 1936 to 1938, the Dun and Bradstreet Surveys provided the primary source of data.

Table I-D

Housing

Non-farm.

The estimates used were prepared for the National Bureau of Economic Research by D. L. Wickens and R. R. Foster. They relate to projects started. The 1937 and 1938 estimates are by Mr. Foster. Publicly financed construction has been deducted.

Farm.

The series used has been derived from Department of Agriculture estimates of the value of farm construction, on the assumption that residential construction constitutes about 47 percent of the total. While this percentage appears to be supported by the Department's latest findings, the estimates of total farm construction used here are undergoing revision, and will shortly be superseded. The series for farm residential construction

included in the above total for housing must be regarded, therefore, as merely provisional.

Consumer Credit

This series is preliminary and subject to revision. It was worked up by Ralph Nugent, Russell Sage Foundation.

Construction by Non-Profit Institutions

In this classification are included privately financed religious, memorial, educational, social, recreational, medical, and other institutional buildings not operated for profit. The estimates are those of the Department of Commerce, and were developed largely from data collected by the F. W. Dodge Corporation.

Table I-E

Net Addition to Disposable Cash Income of the Community Attributable to Government

This series attempts to measure the difference between the outlays of public bodies that add to the community's disposable cash income and the receipts that represent drafts upon disposable cash income.

The series for the Federal Government was derived by applying adjustments directly to Treasury receipts and expenditures. The major adjustments were the elimination of non-cash items, the consolidation of the transactions of Government trust accounts, corporations and credit agencies with those of the Treasury proper, the elimination of receipt and expenditure items that leave the cash income of the community un-

affected, and the distribution of lump-sum transactions over the period during which they influence cash income. The series for State and local governments was derived by the indirect process of adjusting changes in the gross outstanding debt for changes in trust and sinking fund holdings and in the cash balances of these governmental units.

Table II

For mining and manufacturing plant and equipment expenditures see note above for Table I-A. The index of industrial production is that of the Board of Governors of the Federal Reserve System.

Table III

For electric utility expenditures see note above for Table I-A.

Data on total installed capacity as of December 31, are published in Electric Power Statistics of the Federal Power Commission. These data were shifted to January 1 of the following year and expressed in terms of the average for the years 1926 to 1930 to obtain the index of capacity.

Data on total monthly production of electric energy are compiled by the Federal Power Commission. The January totals of these data were expressed in terms of the average for 1926 to 1930 to obtain the index of output for comparison with the above index of capacity. The month of January was used in constructing this index because it is most nearly comparable to the capacity figures in time and also because it corresponds approximately to the seasonal high for the year.

Table IV

Equipment expenditures are for Class I railroads and are compiled by the Association of American Railroads.

The monthly average of total freight cars owned are also data for Class I railroads and include leased freight cars, but not privately owned cars. For 1921-24, inclusive, data are derived from later figures by means of statistics on freight cars installed and retired, as reported by the Interstate Commerce Commission. For all other years, data were compiled by the Association of American Railroads.

Serviceable cars are the monthly average of the total number of cars owned less the bad order cars. This latter series includes all cars undergoing or awaiting repairs, as reported by the Association of American Railroads. Data are for Class I roads, which account for about 99 percent of all equipment owned by the railroads.

Data on lowest number of surplus cars reported during the year are obtained from material compiled by the Association of American Railroads (formerly the American Railway Association), Car Service Division. Data cover Class I railroads and represent a daily average for the last period of the month (last week through 1932, last half of month thereafter).

Data on the highest week's car loadings are obtained from material compiled by the Association of American Railroads (formerly the American Railway Association), Car Service Division.

Table VI

Gross National Income

Figures for 1921 to 1935 are derived from data published in National Income and Capital Formation, by Simon Kuznets of the National Bureau of Economic Research. From the published figures of gross national product was deducted imputed rents and gross savings of Government, so as to make them comparable with the "income-producing expenditures" series. Figures for 1936 to 1938, inclusive, are estimates based on the national income data of the Department of Commerce.

Net National Income

Figures for 1921 to 1935 are derived from data published in National Income and Capital Formation, by Simon Kuznets of the National Bureau of Economic Research.

From the above series of gross national income was deducted (a) total capital consumption in business use and (b) total capital consumption in residential use less imputed rents. For 1936 to 1938, these depreciation figures were estimated from samples, and minor adjustments were made in Kuznets' data for 1934 and 1935 on the same basis.

FEDERAL NET CONTRIBUTION TO BUYING POWER AND INDEX OF INDUSTRIAL PRODUCTION