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NEW ESTIMATES OF STATE AND LOCAL
GOVERNMENT TANGIBLE CAPITAL
AND NET INVESTMENT

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New Estimates of State and Local Government
Tangible Capital and Net Investment

ABSTRACT

Measures of the state and local government capital stock and investment are necessary inputs into several areas of economic analysis, including the measurement of national wealth and its growth. We estimate net investment and depreciation of state and local government nonresidential capital. In aggregate, we estimate a net state and local nonresidential capital stock of \$1.8 trillion in 1985, 17% larger than that estimated by the Bureau of Economic Analysis.

Net state and local government investment has exceeded the state and local deficit annually for the last forty-five years. While the fraction of state and local purchase of goods and services devoted to net investment has fallen, it has exceeded federal government net capital formation except during defense buildups and has averaged more than 40% of private fixed nonresidential net investment since 1951. Similar comparisons reveal that the state and local government net capital stock substantially exceeds state and local debt, and is about twice the federal government capital stock.

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1. Introduction

The United States, much more than most other economies, relies on a system of fiscal federalism. A large number of state and local government units provide and finance goods and services, such as education, highways, hospitals, police and fire protection, sewage treatment, and assistance programs to low income persons. In 1985, total state and local government expenditure was \$517 billion, or 13.0% of GNP, and more than half the size of federal government expenditure.¹ It is not surprising, therefore, that the state and local public sector owns substantial amounts of capital, makes investment as well as consumption expenditures and transfer payments, and experiences depreciation and obsolescence in the value of its tangible capital. While most state and local governments keep separate capital accounts, they do not estimate capital stocks or depreciation. Yet measures of state and local government capital stock and investment can be used both to address significant policy questions and as inputs into economic analyses:

1. Separating government consumption and investment would present a more accurate picture of the use of government funds. Government investment may have different impacts than transfer payments or government consumption which have the same effect on traditionally measured deficits or surpluses.

2. Measures of government capital stock and capital services are

1. Economic Report of the President, 1986, pp. 252, 343.

necessary inputs into comprehensive measures of national income and wealth.

3. Government net investment should be considered part of net national saving, as recommended in the United Nations system of national accounts. The more complete saving estimate could illuminate trends and help the evaluation of tax and expenditure policy affecting saving and investment. It may, for example, be more appropriate to finance government capital formation than government consumption by borrowing rather than taxing.

4. Capital and investment measures can improve our understanding of fiscal history and emerging fiscal issues, such as the alleged deterioration of the infrastructure.

5. Government capital formation does not have to meet the same kind of market test as private investment, so we do not have an analogue to the stock market to value it.² Measures of capital and investment, therefore, may provide information which cannot be inferred from other data.

6. Finally, integration of the federal and the state and local government accounts may improve various analyses, including those of intergenerational equity and of short-run macroeconomic issues. Consideration of assets, as well as liabilities, provides a clearer

2. The value of state and local tangible capital conceptually can be derived from property values, the age structure of the capital stock, maintenance, etc., under the stringent conditions for capitalization (see Starrett (1981)). The federal government has recently considered much more extensive asset sales than previously, so some additional data may eventually be available.

picture of the legacy to future generations. Combining federal and state and local accounts can also advance the debate regarding possible crowding-out of private investment.³

Fortunately, the Bureau of Economic Analysis has generated substantial information on state and local government (as well as federal government and private) investment, depreciation, and capital stocks in the United States for the past six decades. In this paper, we use different depreciation methods to develop alternative estimates of state and local tangible capital. We estimate that the state and local government net capital stock and net investment are substantially higher than estimated by the BEA's method. Moreover, the divergence between our estimates and the BEA's has grown in recent years.

Despite these differences, both the BEA and the current study conclude that state and local government capital formation is substantial. Government tangible capital, two-thirds of which is in the state and local sector, is more than half as large as the private non-residential capital stock.

In Section 2, we discuss the methodology employed by the BEA. We compare their depreciation assumptions with theoretical concepts and with the empirical estimates, based on used asset prices, of depreciation in the private sector by Hulten and Wykoff (1981) and

3. In recent years, federal deficits have been partly offset by large (as traditionally measured) state and local surpluses. As federal grants-in-aid to state and local governments decrease, will the state and local surplus decrease dollar for dollar? If so, little may be gained in relief of short-term pressure on capital markets.

others. We then describe our methodology.

Section 3 presents our principal results: annual series for net investment and capital stocks for state and local governments from 1927 to 1985. We compare our series to those using the BEA's depreciation assumptions and double-declining balance depreciation. In aggregate, we estimate a net state and local nonresidential capital stock of \$1.8 trillion in 1985, 17% larger than the BEA estimate. We also disaggregate the aggregate amount by component of the capital, such as education buildings, highways, equipment, etc.

We explore some of the implications of our results in Section 4. We compare the levels and trends of net state and local government investment with those of state and local deficits and of net federal and net private nonresidential investment. We present similar comparisons of state and local government net capital stocks with net debt and federal and private capital stocks.

We conclude, that for many issues, improved measures of state and local net capital and investment can be quite important. We also discuss, in Section 5, some caveats and directions for future research.

2. Methodology

Goldsmith (1962) and Kendrick (1976) both estimated the state and local government capital stock as part of their pioneering studies of national wealth. The most recent and comprehensive estimates of fixed reproducible government capital stocks have been made by the Bureau of Economic Analysis.⁴ All three studies use the perpetual inventory

method to calculate net capital stocks: gross investment is cumulated and estimated accumulated depreciation is subtracted. Since our estimates use the BEA's gross investment series and most of their service life assumptions, but use a different depreciation method, we shall discuss the BEA's methodology in more detail.⁵

The BEA reports annual stock estimates, beginning with 1925, under current, constant, and historic cost valuations. The gross investment data for years since 1929 are similar to those in the National Income and Product Accounts,⁶ while investment estimates for earlier years are based on Goldsmith (1955). The average service lives used for state and local government structures and equipment are based on the records of government agencies, comparisons with similar assets that are privately owned, and the assumptions of Goldsmith.

The BEA assumes straight-line depreciation over the estimated economic service life of each asset. However, within each category of structure or equipment, the BEA allows for a distribution in service lives around the mean, reflecting a retirement distribution.⁷ Since

4. Musgrave (1980, 1986) and Bureau of Economic Analysis (1982).

5. We have benefitted from discussions on this point with Arnold Katz, John Musgrave, and Allan Young. Any remaining errors in our description are our responsibility. See BEA (1982) and Musgrave (1980) for more details on the BEA methodologies.

6. There are differences in the treatment of intersectoral transfers and certain projects under construction.

7. A truncated Winfrey S-3 distribution is used to assign service lives ranging from 45% to 155% of the mean.

the assets with shortest assumed service lives are retired first, the depreciation rate for any category of investment slows down once retirements start to occur. The resulting overall depreciation pattern resembles a geometric decay.

The straight-line assumption made by the BEA is basically arbitrary. A more satisfactory approach to estimating economic depreciation makes use of the observed sales prices of used assets. For the private sector, Hulten and Wykoff (1981) collected data on used asset prices from several sources, weighted these prices by estimated survival probabilities to account for discarded assets, and estimated the form and rate of economic depreciation. They used a functional form which included all the common assumptions -- geometric, linear, or one-hoss-shay -- as special cases. Although none of the common forms was accepted statistically, the estimated price-age profiles were found to be close to geometric for the classes of assets considered.⁸ The authors then estimated the constant depreciation rate which provided the best fit.

These results were used to derive depreciation rates for the 32 types of producers' durables and nonresidential structures defined in the NIPAs. There was sufficient data to estimate some types directly.

8. Hulten and Wykoff (1981) state that "the age price profiles estimated using the Box-Cox model were very close, on average, to being geometric in form." (p. 93) The eight NIPA asset categories for which depreciation rates were calculated directly as averages of rates for assets they studied were tractors, construction machinery, metalworking machinery, general industrial equipment, trucks, autos, industrial buildings, and commercial buildings.

The declining balance rates, R , found for these categories were used to infer depreciation rates for the remainder from the definition $\delta = R/T$, where T equals the BEA estimated service life. The average R value for four equipment categories was 1.65, so depreciation rates for other equipment classes were calculated as $\delta = 1.65/T$. The average R value for two types of structures was 0.91, so depreciation rates assigned other types of structures were $\delta = 0.91/T$.

The Hulten-Wykoff depreciation rates are consistent with the observations of Young and Musgrave (1980) and Hulten and Wykoff (1981) summarizing earlier studies: equipment depreciates faster than straight-line in the early years, while structures depreciate more slowly. These depreciation rates are certainly significant topics for future research. We feel that the Hulten-Wykoff depreciation estimates are the best available.⁹

In addition to fitting the used asset price data more closely, the geometric depreciation assumption has important theoretical advantages. To see this, a brief review of depreciation theory is appropriate. Christensen and Jorgenson (1973) distinguish between economic depreciation and replacement. Economic depreciation is defined as the decline in the value of an asset as it ages.¹⁰ Replacement is the

9. See Hulten and Wykoff (1981), DeLeeuw (1981), Taubman (1981), and Boskin, Robinson, and Roberts (1986), for further discussion of the strengths and weaknesses of the estimates and the used-asset-price approach.

10. The BEA uses a different definition of depreciation in its theoretical discussions (see Young and Musgrave (1980)): the value of capital used up in production. No discounting is used, and for constant-dollar series, the sum of depreciation over the life of the asset is constrained to equal the original cost.

level of investment needed to maintain an asset's productive efficiency. The difference can be illustrated by an asset which provides a constant service flow over its lifetime -- a light bulb or a one-hoss-shay. For such an asset replacement would be zero until retirement, while depreciation would be continuous as the discounted value of its future services declines.¹¹

The appropriate concept depends on the use. For measuring productivity and capital input, the appropriate capital stock is cumulative investment less cumulative replacement. For measuring national wealth, cumulative economic depreciation should be subtracted from cumulative investment. Replacement equals depreciation only when productive efficiency declines geometrically as the asset ages.¹² Only with geometric depreciation, therefore, can the same capital stock measure be used for both purposes. The other major advantages for geometric depreciation are that relative asset prices are independent of the rate of return and that no vintage investment accounts need be kept. The principal disadvantage is that retirement never occurs.¹³ Of

11. For the "BEA" definition, it appears that depreciation would equal $(1/\text{service life})$ annually for the one-hoss-shay. This definition is not accurate for either of the capital stock measures discussed below.

12. See Jorgenson (1973) for a proof of this.

13. This may not be a significant problem in a growing economy. Under our depreciation assumptions, 6% of the original value of equipment remains after 24 years, while 24% of the original value of hospitals remain after 78 years, but this amounts to a discounted present value of only 2% of the original value when discounted at a 3% real rate. In each case, the BEA assumes the asset has been completely retired. Vintages of assets which the BEA has completely retired account for less than one percent of our estimated state and local capital stock in 1985. We believe that the empirically superior accuracy of the Hulten-Wykoff

course, all simple depreciation formulae assume that depreciation is constant over time and across assets within a category.

Given the empirical evidence and theoretical advantages, we assume that state and local government assets depreciate geometrically. Lacking evidence on prices for used government assets,¹⁴ we use the market evidence on used private assets gathered by Hulten and Wykoff; that is, the depreciation rate for government equipment is $1.65/(\text{service life})$ and that for each type of structure is $0.91/(\text{service life})$. With one exception, the BEA estimated service lives for the various types of state and local government capital are used to infer depreciation rates.¹⁵ Based on several studies, we assume a 40 year service life for highways and streets instead of the BEA's 60 year life.¹⁶ In

depreciation rates in the crucial early years more than compensates for excessively thick tails.

14. As mentioned above, conceptually one could infer values of these assets for state and local governments from information on property values, the age structure of the government capital, maintenance, etc., but this is likely to be a relatively formidable task. However, the depreciation rates for some components are much less likely to resemble closely those of private assets. Buildings and equipment may be more reasonably approximated by private depreciation patterns than, say, highways, for which no obvious private substitute exists. Even those assets with private analogs may depreciate differently because of potential systematic differences in maintenance between the public and private sectors. For example, if state and local governments systematically deferred maintenance in the 1970s, our net investment estimates would be too high.

15. The service lives used by us and the BEA are: equipment, 15 years; educational, hospital, and other "other" buildings, each 50 years; conservation and development, sewer and water structures, each 60 years; and, "other" structures, 50 years.

16. A study done for the U.S. Dept. of Transportation (Jack Faucett Associates, Inc. (1974)) estimated service lives for highways and streets at 32 to 42 years. Furthermore, Kendrick (1976) and Goldsmith (1962) both assumed a 30 year service life for this asset class.

all our calculations, we use the BEA's gross investment data.

3. Results

Our estimates of the net investment and net stock of state and local non-residential capital in 1985 dollars are presented in Tables 1 and 2. These tables also report the corresponding estimates of the BEA, updated by us to 1985 dollars.¹⁷ Appendix Table 1 shows the same results in current dollars.

We estimate that the net state and local capital stock is at an all-time high of more than \$1.8 trillion, having grown continuously since World War II. Our estimates of net investment and the net stock are consistently above those of the BEA, with our 1985 capital stock figure 17% higher. As can be seen in Figures 1 and 2,¹⁸ our series have similar trends to the BEA's -- with a sharp investment peak in the late 1960s -- which is not surprising since we use the BEA's estimates

17. The BEA 1982 dollar estimates were updated by the price indices used by the BEA to derive its constant and current cost estimates. Separate indices are used for each asset type and values differ slightly for stocks (end of year) and flows (yearly average).

We attempted to reproduce the BEA estimates from the gross investment and service life data. We exactly succeeded for 4 of the 9 asset types and very slightly overestimated the others. We believe the differences result from our incomplete data on BEA adjustments for intersectoral transfers. To correct for this and other possible statistical discrepancies, we subtracted the excess of our straight-line estimates over the BEA's from our BRH estimates.

18. An appendix describes data sources and price indices used in the figures and not referenced elsewhere. We are mainly interested in a wealth estimate and thus, it is sensible just to add up the value of the different types of capital. Were we developing a production study, a Divisia index weighting the growth rates of components by their shares in income would be necessary.

for gross investment and most service lives. The two net investment series do diverge in recent years, with our estimates about twice as large as the BEA's since 1981. The differences between our estimates and those of the BEA are due almost entirely to our slower rates of depreciation for structures.

We also estimated the net state and local capital stock using a frequently-used alternative to straight-line depreciation, double-declining balance. This series is also shown in Table 1. The double-declining balance assumption implies a net stock which is 25-35% below the estimates of the BEA for the postwar period. Clearly, it is not only the form -- declining-balance or straight-line -- of depreciation which matters, but also the rate.

Highways and education buildings, as shown in Figure 3, account for 57% of total state and local non-residential capital, though the BEA lists seven other categories of investment.¹⁹ In Figure 4, net investment is divided into three major categories -- educational buildings, highways, and other. The "other" category is primarily other types of structures; equipment is less than 5% of the net state and local stock. The three components have a similar pattern: after disinvestment during World War II, all three reach peaks in the late 1960s and drop to troughs in the recent recession. The observed pattern of aggregate net investment, therefore, cannot be attributed solely to

19. Appendix Tables 2-10 present the BEA and our new estimates of net stocks and net investment for all nine categories.

the baby boom or the construction of the interstate highway system. The substantial levels of net investment in the highway and other categories, even in recessions, casts doubt on reports of a deteriorating infrastructure.²⁰

4. Interpretations and Implications

Our estimates of state and local capital and investment can be used to illuminate important trends and relationships in national saving and investment. While most of the trends would also be evident using BEA estimates, we are not aware of other efforts to exploit government capital accounts in this way.²¹

As shown in Figure 5, net investment has substantially exceeded the NIPA state-local other than social insurance funds deficit.²² As

20. Much of the worry about the infrastructure, however, concerns deferred maintenance. As Hulten and Peterson (1984) point out, maintenance is not counted as investment. If governments spend less on maintenance than the private sector, our depreciation estimates may be too low. Of course, we are examining the entire state and local sector. The infrastructure may well be deteriorating in some areas while substantial investment goes on elsewhere.

21. Hulten and Peterson (1984) discuss trends in state and local net investment.

22. The total NIPA state-local surplus has been much larger than the measure which excludes social insurance funds and has been positive in every year since 1968, but much of this surplus has accumulated in pension funds for government employees. Pension assets and liabilities would correctly be included on opposite sides of a comprehensive government capital account. The NIPA figures do not properly record unfunded accrued pension liabilities. Social insurance funds generally cannot be used by state or local governments to fund operating expenditures or capital projects. For these reasons, the NIPA "other than social insurance funds" surplus better measures the current fiscal status of state and local governments, although the total figure may be useful for macroeconomic analyses.

net investment fell during the 1970s and early 1980s, the state-local sector moved into a budget surplus, so that the net saving done by these governments has remained substantial. These data indicate that state and local governments have been effectively financing most of their investment out of tax and grant revenue rather than by borrowing. The growth of state-local debt, which would otherwise appear inconsistent with this argument, may represent arbitrage by state and local governments as they issue tax exempt bonds and hold financial assets.

The fraction of state and local government net purchases of goods and services used for net investment has decreased sharply since the 1960s, as Figure 6 indicates. This percentage decreased from 20.7% in 1967 to only 4.1% in 1983, before increasing slightly to 6.1% in 1985.

We add our estimates for state and local governments to comparable federal estimates²³ to obtain the total government non-residential capital stock and present the results in Table 3.²⁴ The total, which includes military capital, exceeded \$2.6 trillion in 1985, having more than doubled in real terms since 1945. By comparison, the BEA

23. The methodology used was that of Boskin-Robinson-Roberts (1986) and the data used were from the 1986 BEA wealth data tape, and additional data provided by John Musgrave.

24. These should not be confused with total government assets. Here we consider only fixed reproducible tangible wealth, which consists of equipment and structures. Boskin, Robinson, O'Reilly, and Kumar (1985) show that the federal government has substantial holdings of land and mineral rights and Eisner and Pieper (1984) demonstrate the importance of federal holdings of financial assets and gold. State and local governments hold similar assets. See Boskin (1982, 1986, 1987) for more on federal government budgets.

estimates, also given in Table 3, have government capital growing by 68% in the postwar period.

With the exception of World War II, state and local government capital stocks have been larger than those of the federal government, as shown in Figure 7. Currently, state and local governments own 68.7% of total government tangible capital. Except during military buildups, state and local governments provide an even larger fraction of government net investment, as shown in Figure 8. The surges in federal investment roughly coincide with World War II, the Korean and Vietnam Wars, and the Reagan defense buildup.

State and local government capital is much greater than state-local debt, as can be seen in Figure 9. Though caution should be used in interpreting this relationship,²⁵ Figure 9 suggests an aggregate capital account for these governments would show a significant positive net balance.

We do not have a completely comparable private capital stock series, but as shown in Table 4, state and local government non-residential capital was 56.1 percent of Hulten and Wykoff's estimate of the private non-residential stock in 1974.²⁶ Table 4 also presents

25. This definition of government capital, as noted above, does not include all government assets. Furthermore, since long-term pension debt and other obligations are not included, government debt is not a comprehensive measure of government liabilities either. In addition, the government capital stock is valued at cost less depreciation, not at market value. State and local governments might not be able to sell their structures and equipment and completely liquidate their debt.

26. The BEA state-local fixed non-residential net capital stock, in current dollars, was 51.2% of the corresponding BEA private net stock in 1974 and 39.3% in 1984 (Musgrave (1986)).

our new federal net capital stock estimates and expresses the state-local stock as a percentage of the total (government plus private) national capital stock. This figure exceeded 30% in the late 1960s and early 1970s.

State and local government investment represents a substantial fraction of total national capital formation. Although our state-local net investment series and the NIPA net private investment estimates presented in Figure 10 are not strictly comparable because of the different depreciation methods used, this comparison does provide an approximation of their relative importance. In several years, net state-local investment exceeded net private investment, and state and local government investment has averaged more than 40 percent of total fixed non-residential investment since 1951. However, state and local net investment has been falling since 1968, during a period of growing worry about the adequacy of private investment. Clearly, these governments have not taken up the slack.

5. Conclusion

The above results amply document an important fact of life in the U.S. economy: the state and local government capital stock is large, and state and local government net investment is an important part of national capital formation. The investment and capital stock series exhibit interesting trends and movement, and in part, these depend upon the depreciation methods used. We have compared and contrasted a depreciation method based on estimates from used assets sales data with the traditional BEA method. We believe that there are important advantages to the former method, although problems remain. Only further

research will enable us to determine better methods and estimates of depreciation for the state and local, as well as for the federal government, and of course, for the private sector.

If we are to have improved measures of national capital formation, discussions of fiscal history, analysis of the efficiency and equity of financing methods for government expenditures, and better measures of productivity in the public sector, accurate capital accounts become increasingly important. A separate capital account for the United States federal government is being seriously considered. Many of the issues discussed here are also relevant for the federal government and have been treated elsewhere;²⁷ however, the state and local capital stock is perhaps twice as large as the federal capital stock, and the corresponding flows of investment and depreciation are also quite large. While state and local governments do tend to separate capital and current expenditures in their budgeting, no serious attempt is made by many of them to pay careful attention to depreciation and obsolescence of that capital stock. The type of information presented here can be one important component to more comprehensive and accurate budget reporting, fiscal policy analysis, and national wealth measurement.

27. See Boskin, Robinson and Roberts (1986).

Table 1

Estimates of Net State-Local Nonresidential Capital Stock
(billions of 1985 dollars)

Year	Net Stock ¹			Net Investment			Gross Investment
	BEA	BRH	DDB	BEA	BRH	DDB	
1928	285.1	307.0	230.5	16.4	17.3	13.2	23.9
1937	403.3	438.0	316.0	12.4	14.2	8.9	23.7
1946	426.5	483.9	314.0	-2.2	0.7	-3.5	11.1
1955	574.5	658.8	441.9	28.0	30.2	23.9	46.2
1964	894.5	1,012.2	712.5	44.4	48.2	36.9	71.6
1973	1,326.6	1,487.2	1,050.9	34.3	39.8	23.2	75.3
1982	1,507.2	1,740.4	1,153.4	6.8	16.3	0.8	57.6
1985	1,540.2	1,803.2	1,170.2	16.1	25.3	10.3	69.6

¹BEA - BEA estimates. See text and references for discussion of BEA methodology. Source: BEA (1986) and additional data from BEA, updated to 1985 dollars by the authors.

BRH - "Boskin-Robinson-Huber", using declining balance depreciation rates based on Hulten and Wykoff (1981) study of private used asset sale prices. Source: authors' calculations (see text).

DDB - Double declining balance depreciation. Source: authors' calculations (see text).

Table 2

TOTAL STATE-LOCAL NONRESIDENTIAL CAPITAL STOCK
(millions of 1985 dollars)

YEAR	NET STOCK		NET INVESTMENT		DEPRECIATION		GROSS INV'T
	BEA	BRH	BEA	BRH	BEA	BRH	
1927	268314	289295	15665	16546	7033	6152	22699
1928	285070	306991	16373	17305	7498	6567	23872
1929	301416	324321	15983	16956	7981	7009	23964
1930	321575	345510	19686	20707	8507	7486	28193
1931	341405	366449	19369	20464	9061	7966	28430
1932	354659	380967	12904	14152	9558	8310	22462
1933	358913	386699	4112	5566	9901	8448	14013
1934	366379	395755	7284	8850	10174	8608	17458
1935	372373	403479	5849	7552	10461	8758	16310
1936	390601	423443	17839	19549	10861	9151	28700
1937	403261	437980	12351	14200	11334	9484	23684
1938	420263	456898	16599	18484	11804	9918	28402
1939	441220	479816	20519	22449	12367	10437	32886
1940	452918	493685	11377	13513	12870	10733	24246
1941	457244	500387	4183	6520	13184	10847	17367
1942	453633	499362	-3557	-1014	13341	10799	9785
1943	445425	493930	-8044	-5316	13368	10640	5324
1944	436645	488059	-8602	-5744	13334	10476	4732
1945	428746	483176	-7741	-4777	13297	10333	5556
1946	426450	483931	-2186	720	13330	10424	11144
1947	432955	493392	6827	9239	13560	11147	20386
1948	443051	506414	10368	12760	13910	11518	24278
1949	455643	521931	12418	15210	14309	11516	26726
1950	471311	540518	15400	18214	14809	11994	30209
1951	486633	558804	15078	17941	15361	12498	30439
1952	502125	577301	15235	18130	15942	13046	31177
1953	520202	598424	17745	20683	16555	13617	34300
1954	546658	627899	25107	28859	17311	13560	42418
1955	574498	658799	28047	30246	18170	15972	46218
1956	603417	690857	28359	31377	19084	16066	47443
1957	634178	724841	30138	33260	20041	16919	50179
1958	666934	761034	32060	35386	20994	17667	53053
1959	700424	798130	32792	36250	21941	18483	54733
1960	733887	835360	32787	36407	22907	19288	55695
1961	770381	875751	35892	39500	23913	20305	59804
1962	807138	916548	36106	39878	24949	21176	61054
1963	849362	962878	41472	45313	26053	22212	67525
1964	894459	1012158	44377	48215	27251	23413	71628
1965	942799	1064760	47404	51500	28531	24435	75935
1966	995022	1121294	51507	55369	29930	26068	81437
1967	1052042	1182610	56331	60128	31481	27685	87813
1968	1111741	1246701	58976	62826	33184	29335	92160
1969	1164759	1304315	52189	56501	34883	30571	87071
1970	1209605	1353996	45330	48674	36497	33153	81827
1971	1252951	1402426	41550	47465	38042	32127	79592
1972	1291790	1446579	38404	43276	39571	34699	77975
1973	1326620	1487198	34295	39826	41015	35484	75310
1974	1362098	1528861	34895	40882	42403	36416	77298
1975	1392593	1566050	29990	36502	43769	37256	73759
1976	1417557	1598230	24440	31536	45003	37908	69444
1977	1434899	1623337	16961	24586	46079	38454	63040
1978	1455705	1652311	20361	28389	47108	39080	67469
1979	1473082	1678264	16997	25422	48135	39710	65132
1980	1490024	1704142	16598	25376	49140	40362	65738
1981	1500207	1723693	9954	19156	50065	40862	60018
1982	1507165	1740338	6779	16299	50847	41327	57626
1983	1513746	1756817	6393	16115	51621	41899	58014
1984	1524305	1777357	10262	20062	52474	42674	62736
1985	1540174	1803238	16132	25289	53482	44324	69614

Table 3

TOTAL FEDERAL AND STATE-LOCAL NONRESIDENTIAL CAPITAL STOCK
(millions of 1985 dollars)

YEAR	NET STOCK		NET INVESTMENT		DEPRECIATION		GROSS INV'T
	BEA	BRH	BEA	BRH	BEA	BRH	
1927	342567	368503	13808	15262	10105	8650	23914
1928	357636	385204	14692	16315	10552	8929	25244
1929	372877	402189	14877	16610	11014	9282	25890
1930	392808	423949	19453	21269	11542	9726	30995
1931	413594	446660	20309	22216	12126	10219	32435
1932	429191	464352	15216	17291	12669	10594	27885
1933	437373	474839	7999	10274	13105	10831	21104
1934	450643	490420	13031	15316	13590	11305	26621
1935	464158	506332	13299	15668	14199	11830	27499
1936	488060	532702	23457	25897	14919	12479	38377
1937	505187	552506	16774	19419	15679	13033	32451
1938	527482	577521	21836	24523	16460	13772	38295
1939	555226	607960	27240	29904	17453	14789	44693
1940	577157	632389	21571	24037	18830	16363	40400
1941	647409	691937	69449	58977	27618	38091	97067
1942	846065	840474	196390	147250	62303	111443	258694
1943	1095233	1008716	244993	165660	131775	211108	376769
1944	1272147	1168402	173401	156479	195782	212704	369183
1945	1321078	1220022	47757	50537	231435	228655	279192
1946	1132711	1099071	-184733	-118583	214231	148081	29498
1947	1000668	1025450	-129023	-72207	161364	104548	32341
1948	916200	984226	-82343	-40420	120372	78449	38029
1949	876392	967224	-38973	-16664	85431	63121	46458
1950	865328	964177	-10830	-2963	62485	54616	51655
1951	882703	985524	17174	21084	55160	51250	72334
1952	933131	1037068	49660	50757	57171	56073	106831
1953	982370	1087430	48456	49558	59015	57913	107471
1954	1027060	1134467	43074	46218	59754	56612	102829
1955	1061414	1174482	34549	39341	61001	56210	95551
1956	1091943	1212054	30017	36909	61512	54621	91530
1957	1117936	1246276	25520	33601	60933	52852	86453
1958	1148719	1285747	30196	38723	60486	51958	90681
1959	1184000	1329918	34629	43326	60460	51764	95090
1960	1222754	1377541	38065	46746	60895	52215	98961
1961	1269482	1432604	46016	54035	61474	53454	107488
1962	1314950	1486190	44697	52537	62136	54296	106832
1963	1367757	1546855	51902	59489	63183	55595	115084
1964	1421534	1608509	52918	60455	64737	57200	117655
1965	1476200	1671428	53653	61727	66682	58607	120335
1966	1535840	1739651	58801	66922	68790	60669	127591
1967	1594079	1807205	57515	66301	71016	62231	128533
1968	1653337	1876313	58516	67787	73144	63874	131660
1969	1703313	1936627	49164	59173	75025	65016	124188
1970	1743764	1987888	40947	50221	76699	67425	117646
1971	1782539	2037854	37020	48992	78249	66277	115269
1972	1821735	2087889	38686	49051	79715	69350	118401
1973	1854066	2131269	31792	42556	80866	70102	112658
1974	1884597	2173062	29986	41023	81815	70778	111801
1975	1915777	2215724	30613	41897	82946	71661	113559
1976	1943481	2255106	27072	38618	84353	72808	111426
1977	1964424	2288104	20467	32372	85674	73770	106142
1978	1996978	2332393	31867	43461	86993	75400	118860
1979	2025954	2372906	28315	39713	88636	77238	116951
1980	2054099	2412648	27540	38995	90552	79097	118093
1981	2076062	2446160	21442	32853	92524	81113	113965
1982	2106239	2486843	29464	39854	94864	84475	124329
1983	2132556	2523485	25701	35907	97714	87508	123415
1984	2166165	2566781	32800	42377	100782	91204	133582
1985	2213866	2623082	46483	55149	104559	95892	151042

Table 4

Hulten-Wyckoff Estimates of Private Aggregate Nonresidential Net Capital Stock
and BRH Estimates of State-Local Government Nonresidential Capital Stock
(billions of 1985 dollars)

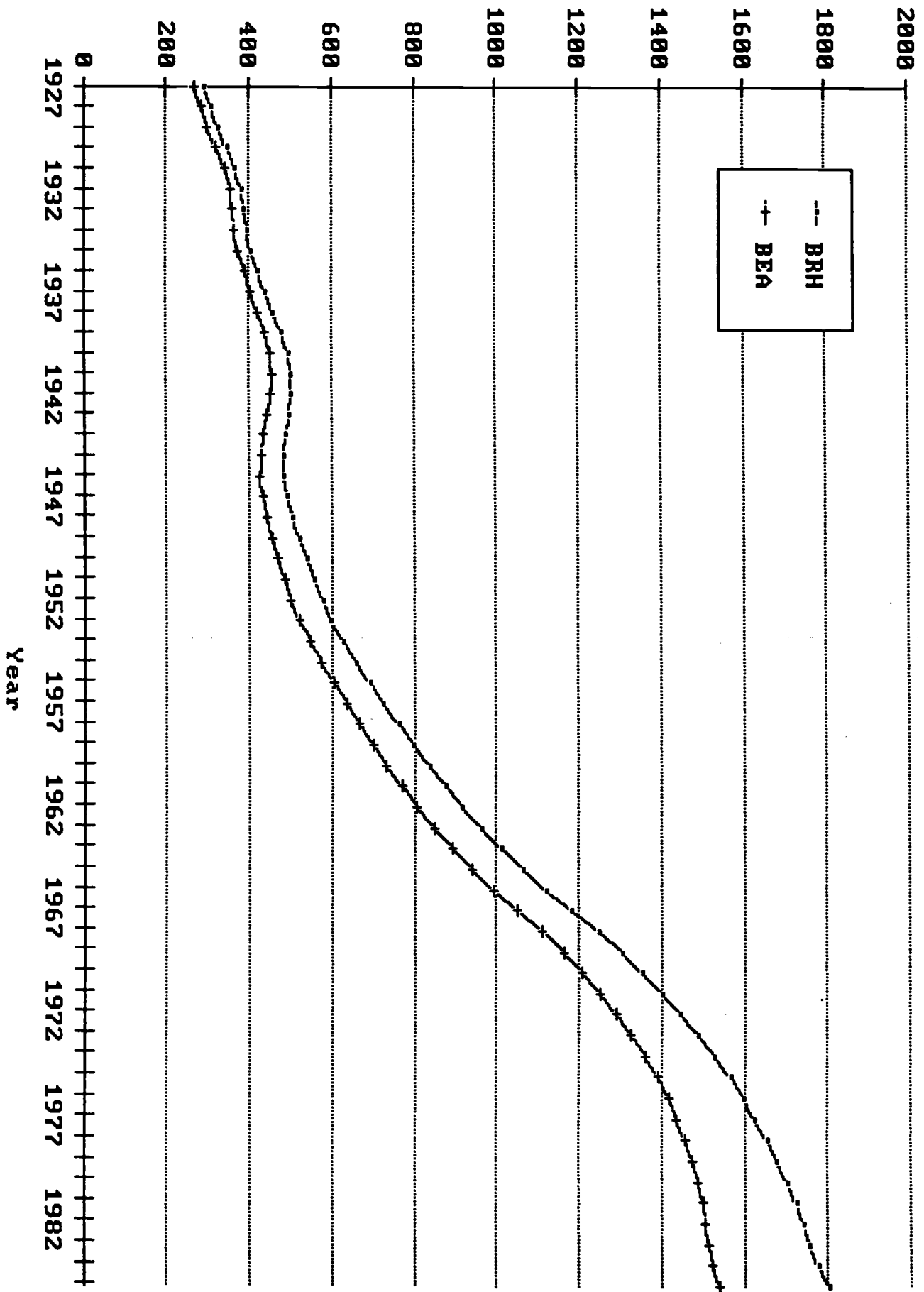
Year	(1) BRH State-local net stock	(2) HW Private net stock	(3) (1) as % of (2)	(4) BRH Federal net stock	(5) State-Local net stock as % of total ¹
1949	522.0	1,075.7	48.5	445.3	25.6
1954	627.9	1,275.8	49.2	506.6	26.0
1959	798.1	1,504.3	53.0	531.8	28.2
1964	1,012.2	1,776.5	57.0	596.4	29.9
1969	1,304.3	2,277.3	57.2	632.3	30.9
1974	1,528.9	2,723.5	56.1	644.2	31.2

¹Total = (1) + (2) + (4)

Sources: Authors' calculations and Hulten and Wyckoff (1981), p. 105. Price indices for structures and producers' durable equipment from Economic Report of the President 1986, Table B-3, p. 256.

Bils. of 1985\$

FIGURE 1
COMPARISON OF BRH AND BEA
ESTIMATES OF STATE-LOCAL
NONRESIDENTIAL NET CAPITAL STOCK



Bils. of 1985\$

COMPARISON OF BRH AND BEA
ESTIMATES OF STATE-LOCAL
NONRESIDENTIAL NET INVESTMENT

Figure 2

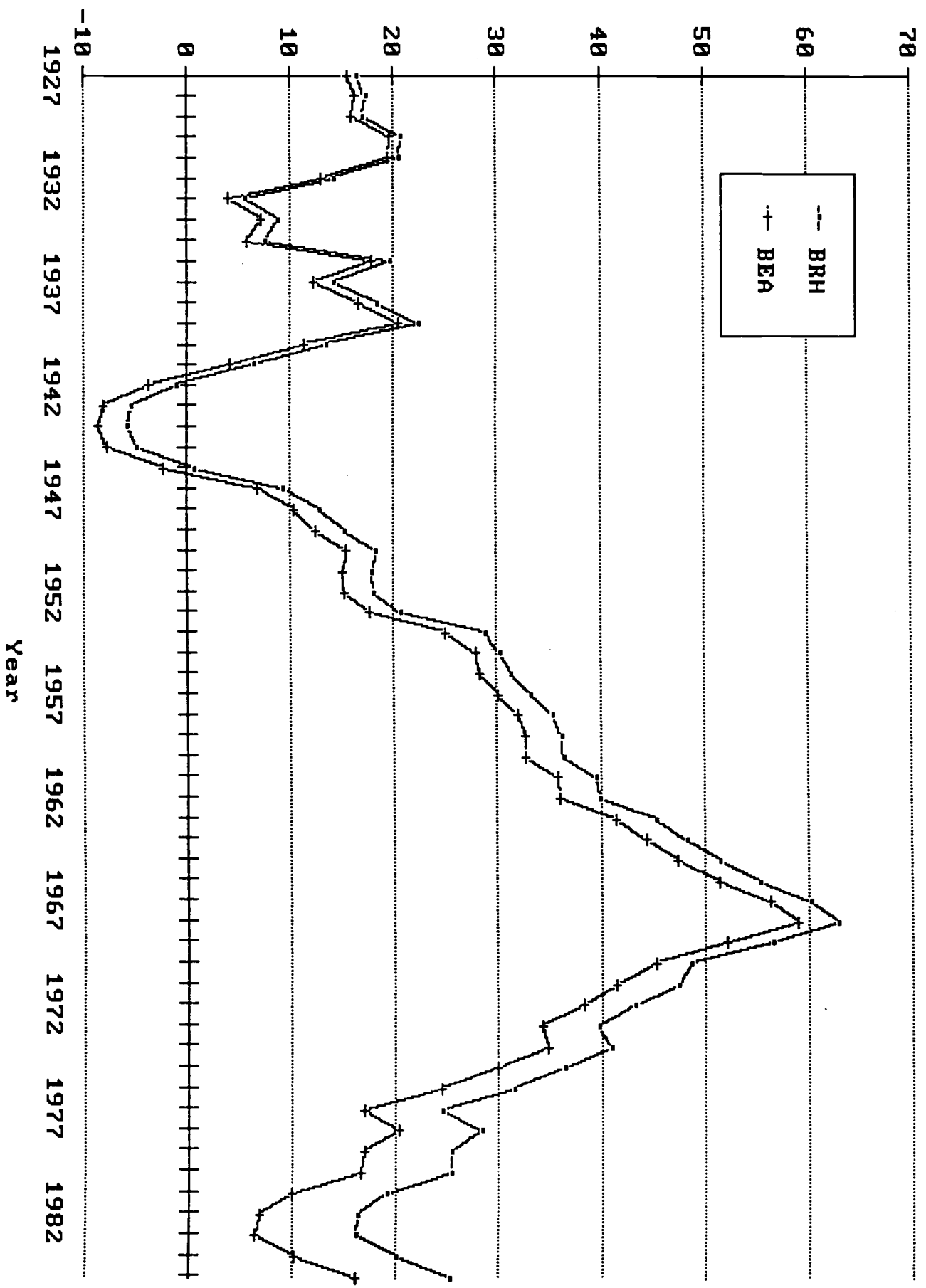
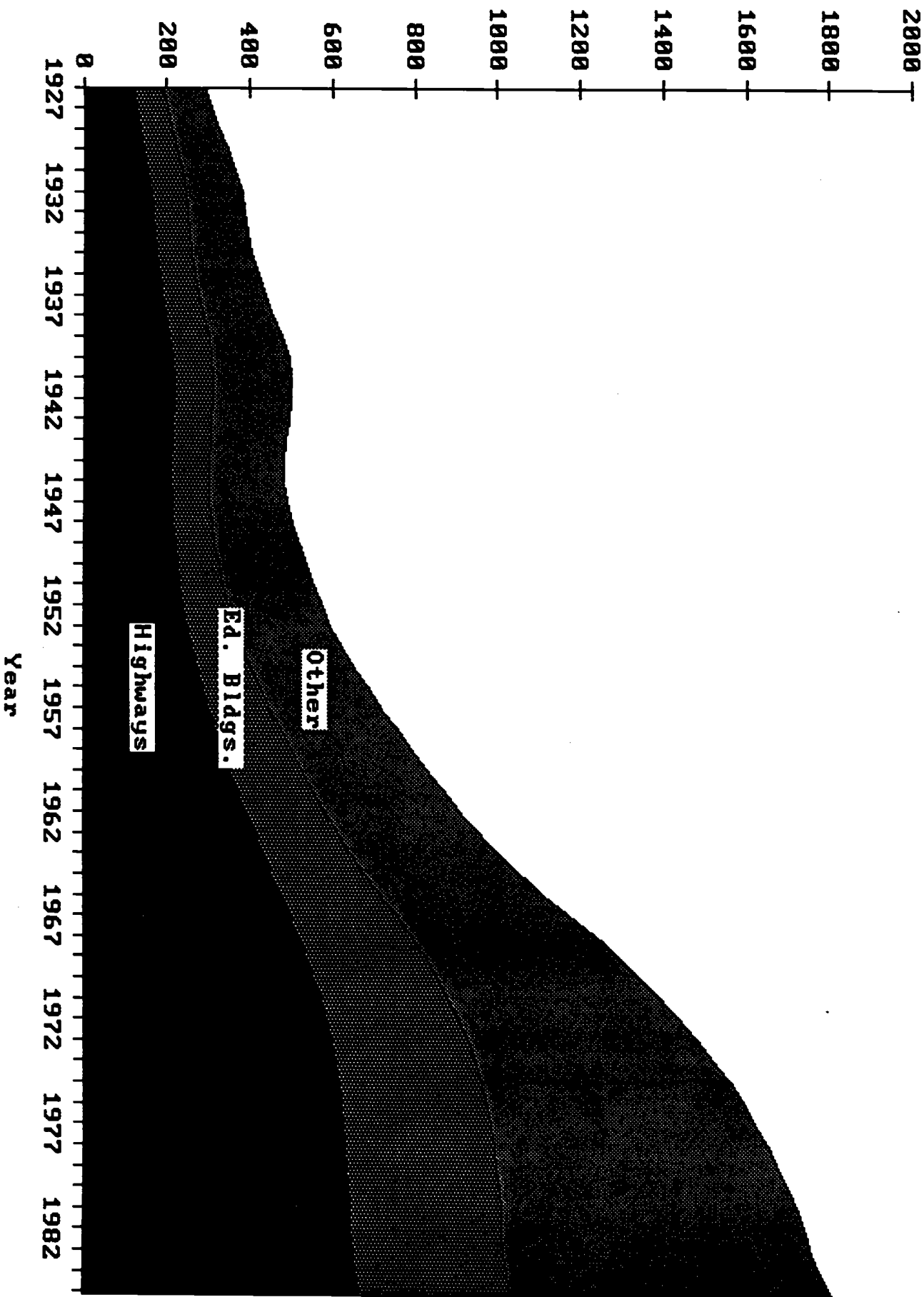


Figure 3

Bils. of 1985\$

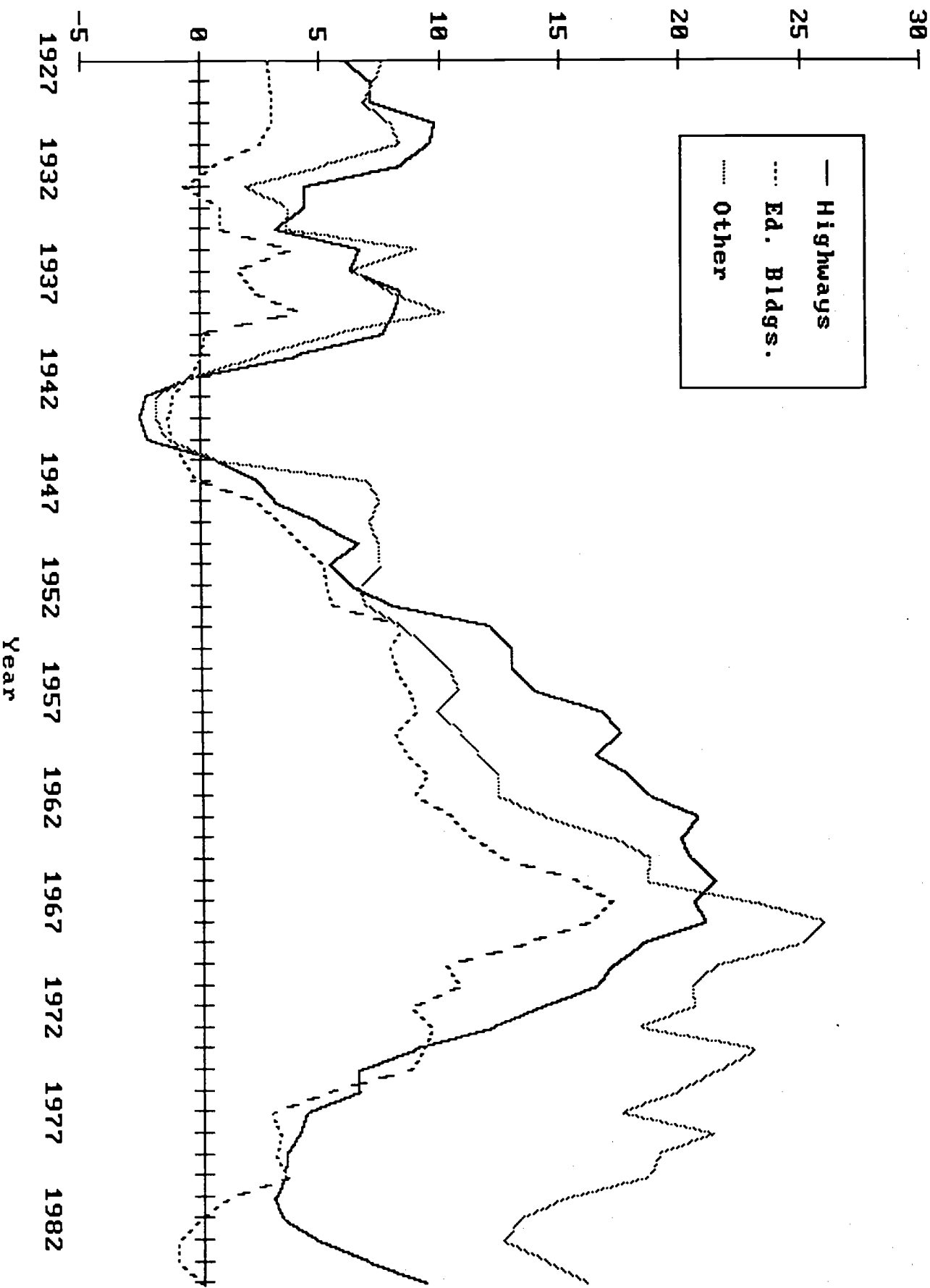
NEW ESTIMATES OF STATE-LOCAL
NONRESIDENTIAL NET CAPITAL STOCK,
BY MAJOR CATEGORIES



Bils. of 1985\$

NEW ESTIMATES OF STATE-LOCAL
NONRESIDENTIAL NET INVESTMENT, BY
MAJOR CATEGORIES

Figure 4



Bils. of 1985\$

Figure 5
NIPA STATE-LOCAL BUDGET DEFICIT
OTHER THAN SOCIAL INSURANCE FUNDS,
AND NEW ESTIMATES OF STATE-LOCAL
NONRESIDENTIAL NET INVESTMENT

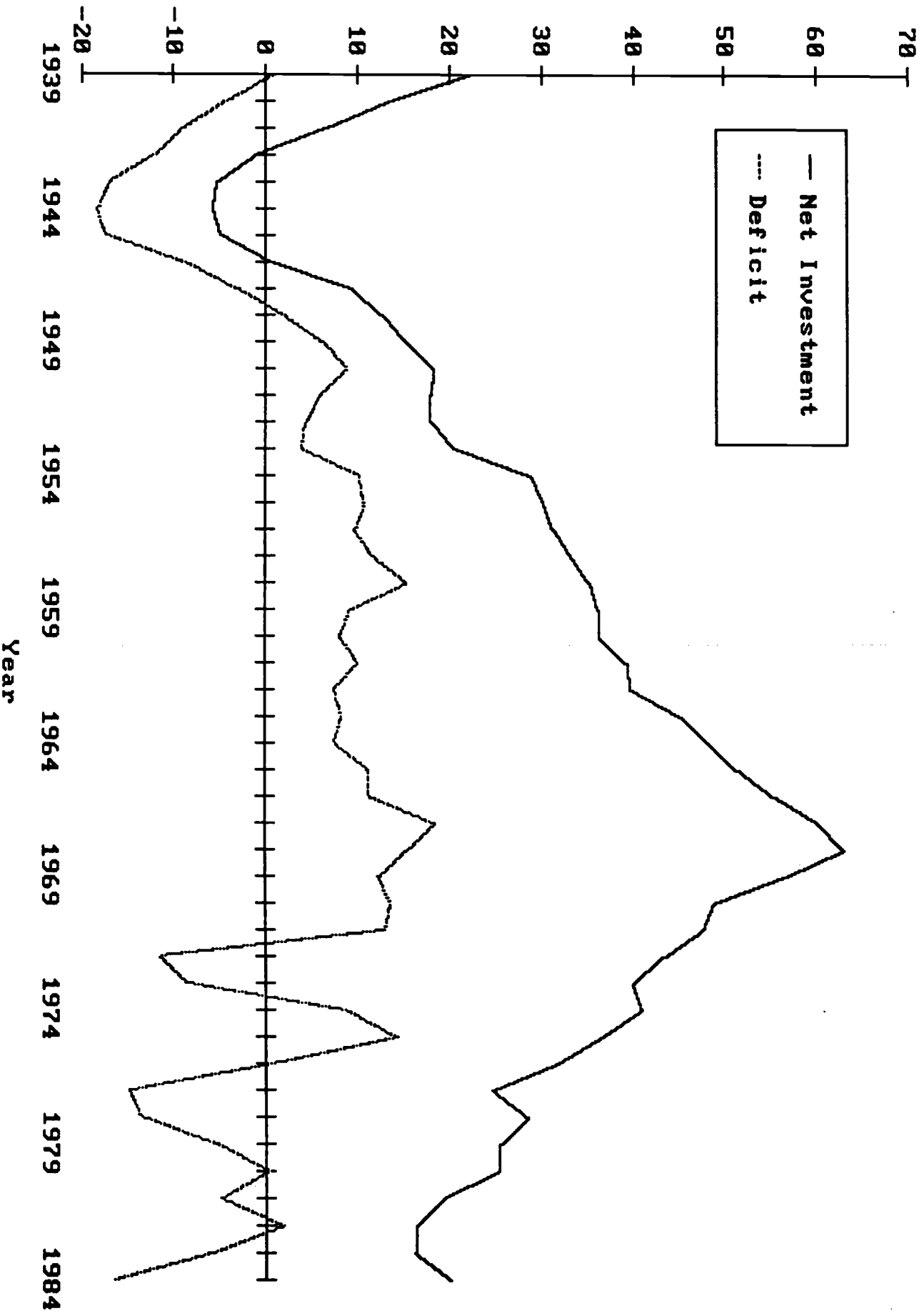
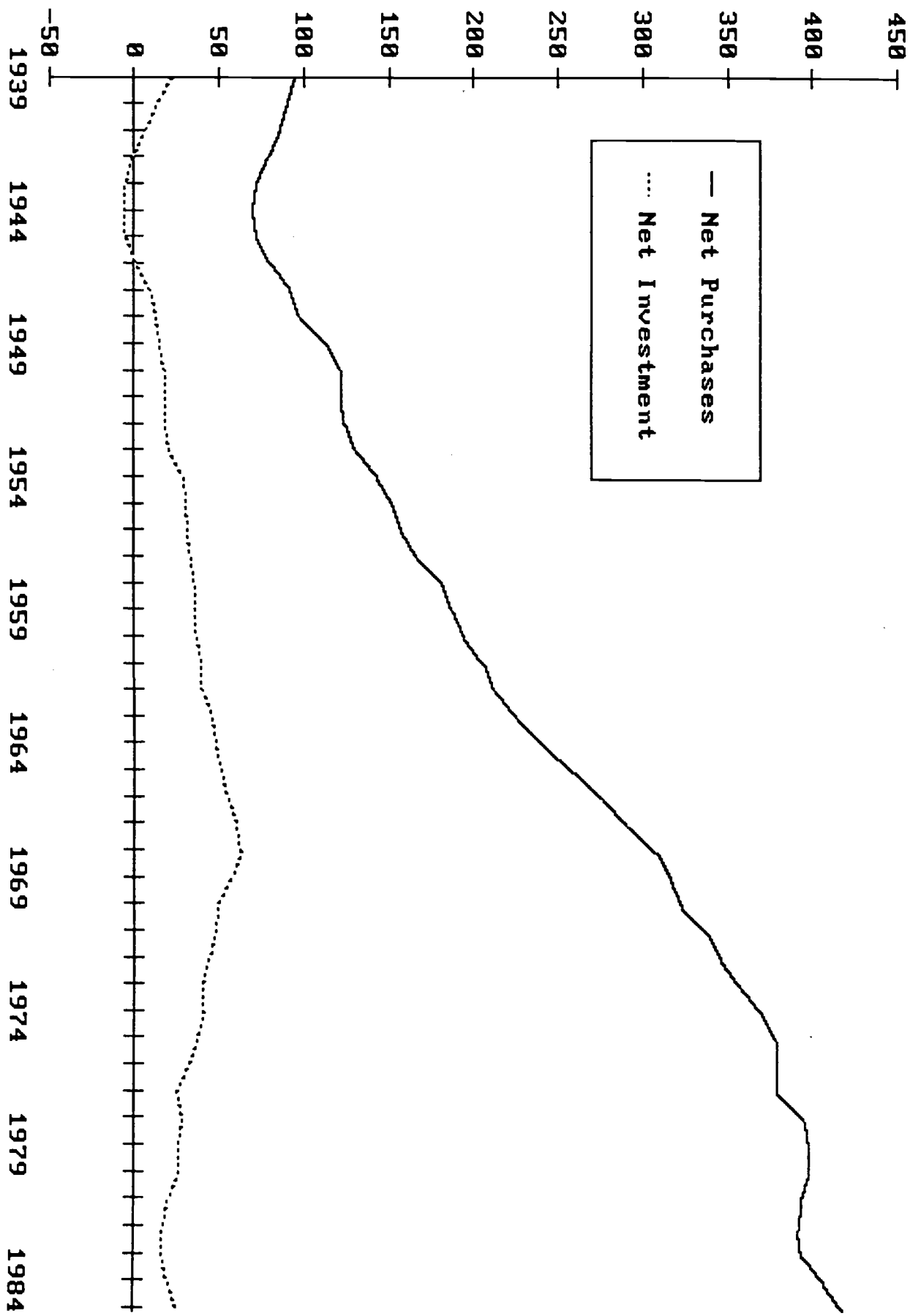


Figure 6

STATE-LOCAL PURCHASES OF GOODS AND SERVICES LESS BRH DEPRECIATION, AND BRH ESTIMATES OF STATE-LOCAL NONRESIDENTIAL NET INVESTMENT

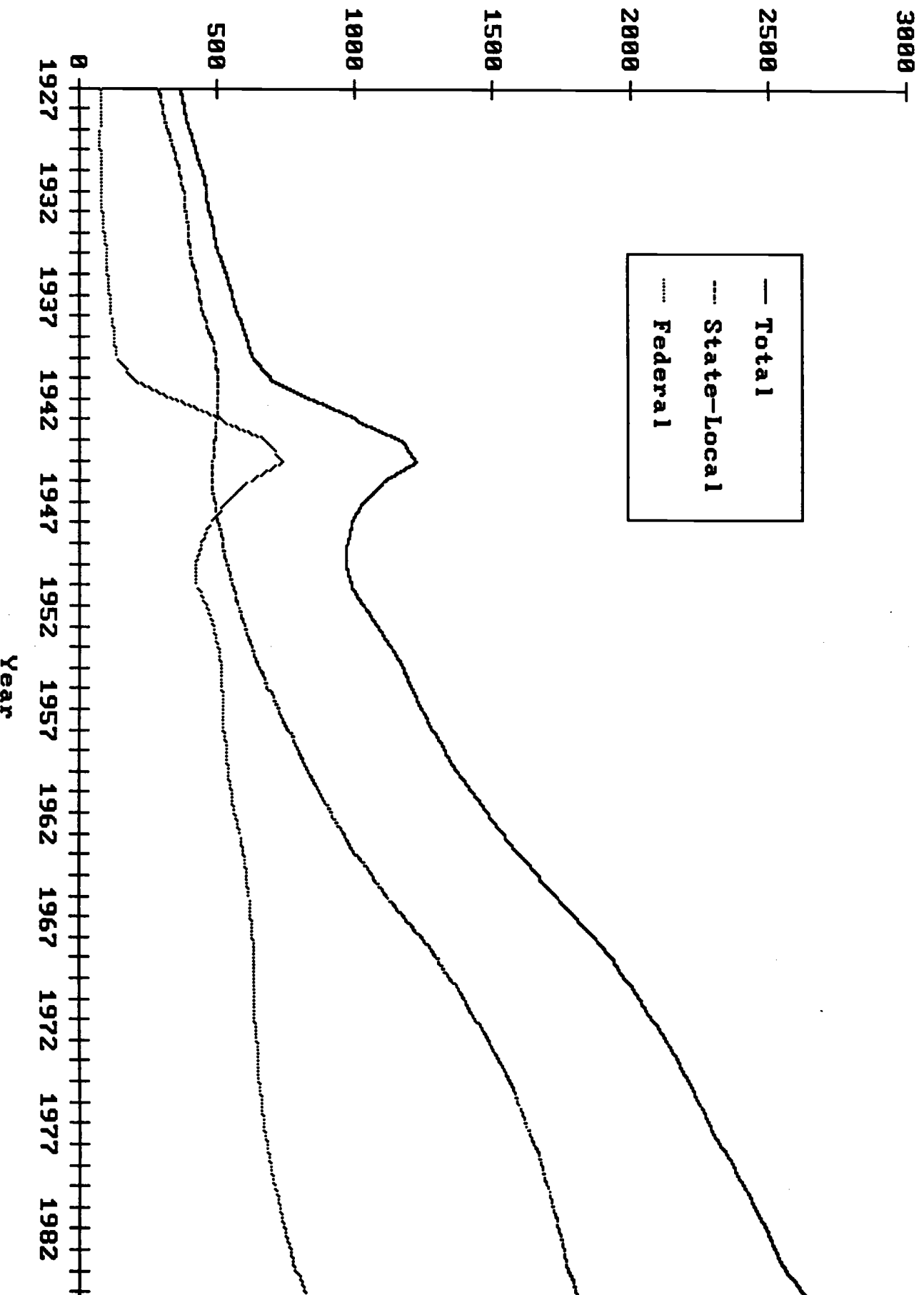
Bils. of 1985\$



Bils. of 1985\$

**NEW ESTIMATES OF GOVERNMENT
NONRESIDENTIAL CAPITAL STOCKS**

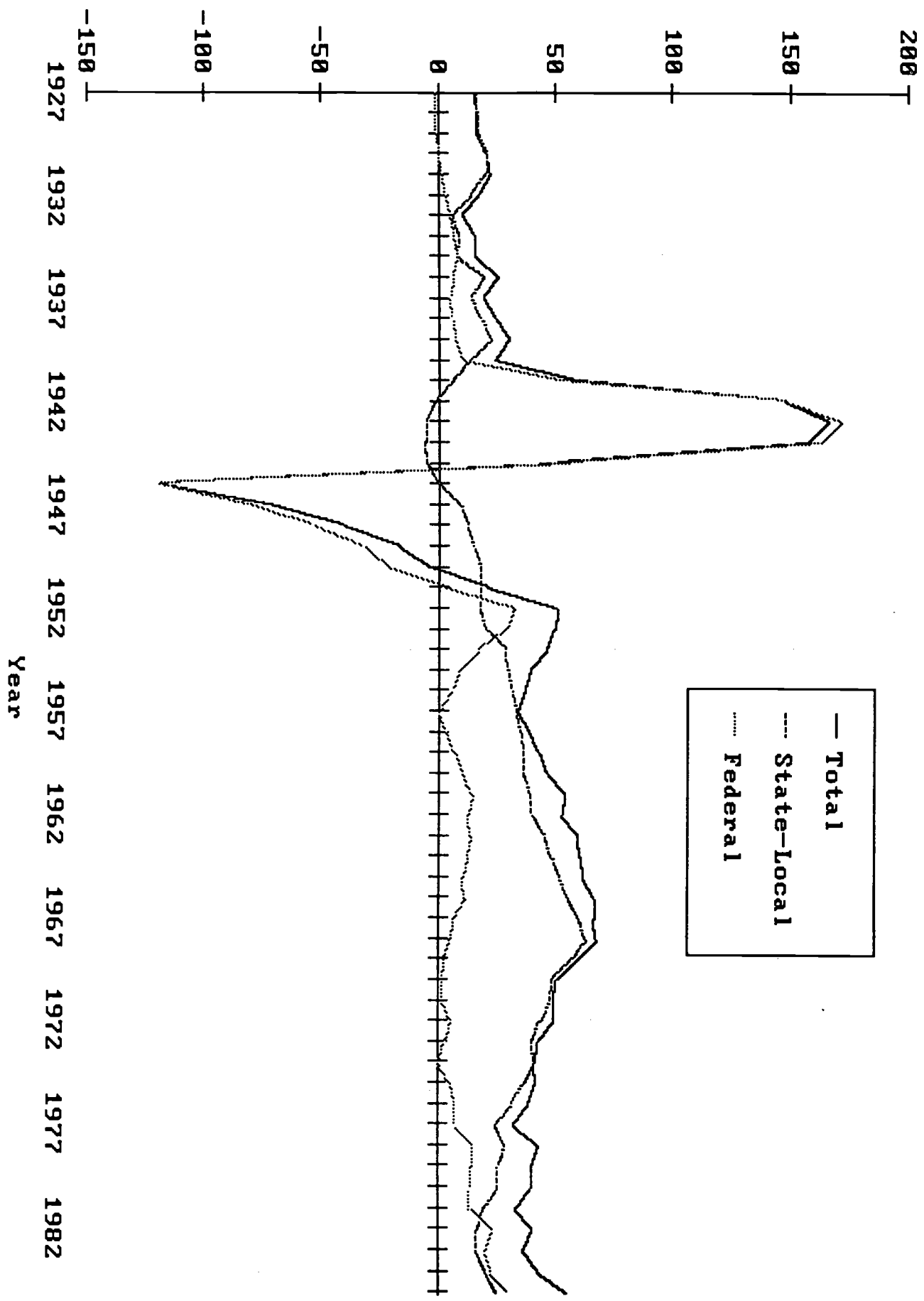
Figure 7



Bils. of 1985\$

NEW ESTIMATES OF GOVERNMENT NONRESIDENTIAL NET INVESTMENT

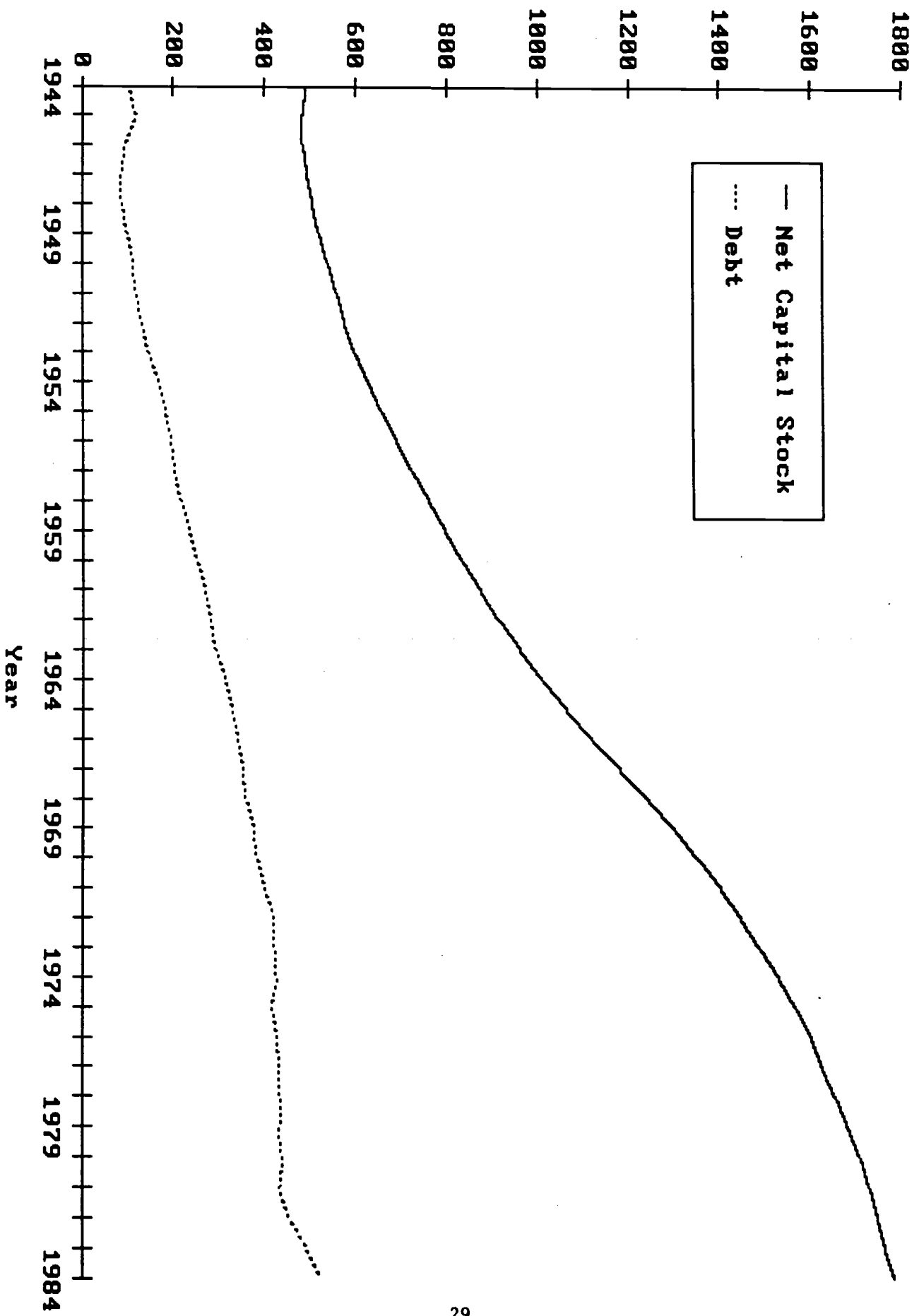
Figure 8



Bils. of 1985\$

STATE-LOCAL DEBT AND NEW ESTIMATES
OF STATE-LOCAL NONRESIDENTIAL NET
CAPITAL STOCK

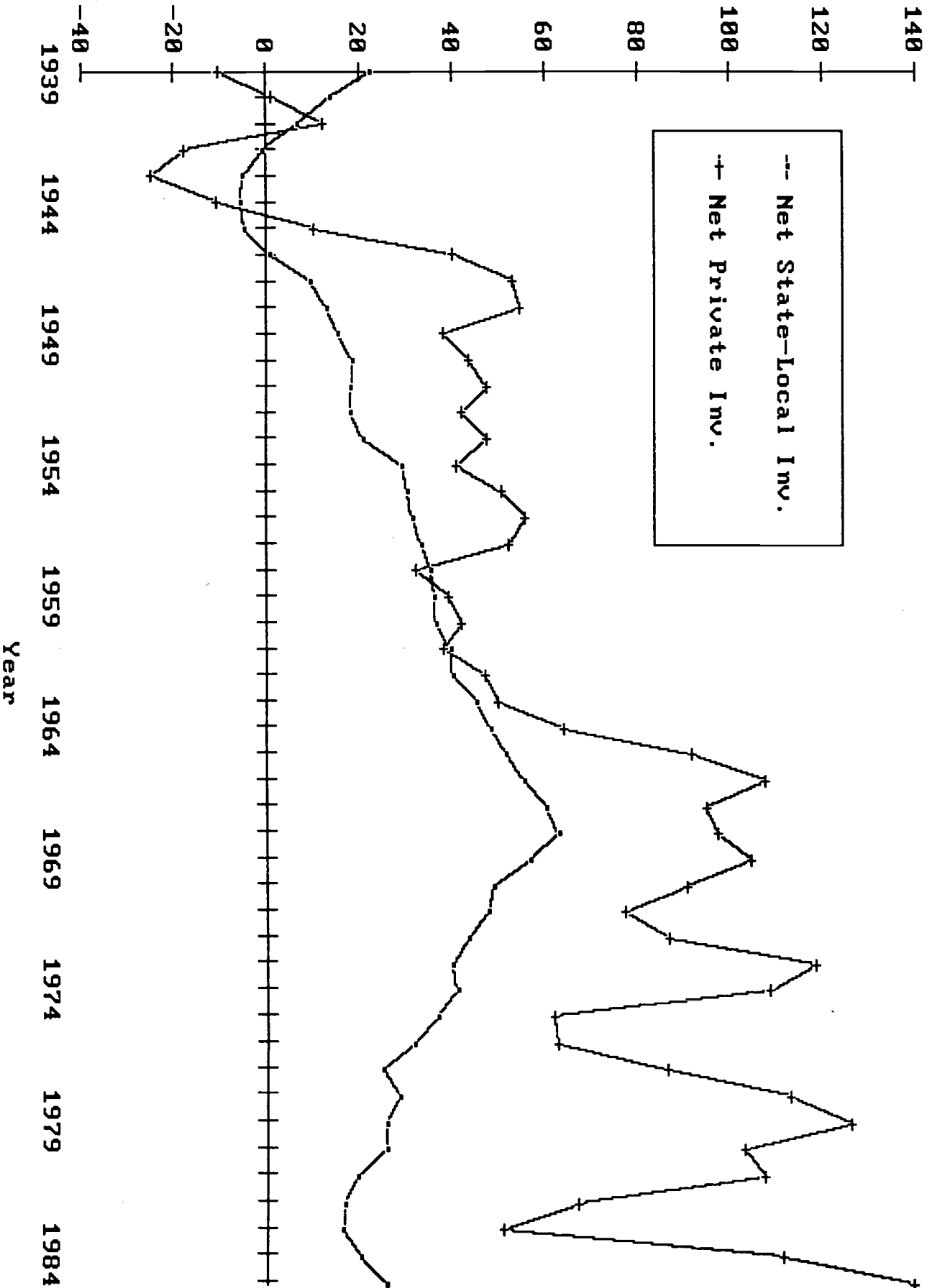
Figure 9



Bils. of 1985\$

NET PRIVATE FIXED NONRESIDENTIAL
INVESTMENT AND NEW ESTIMATES OF
STATE-LOCAL NONRESIDENTIAL
INVESTMENT

Figure 10



Additional Sources for Figures 1-10

Figure 5. "Other funds" deficit from Levin (1986), p. 36 and The National Income and Product Accounts, 1929-1976: Statistical Tables, pp. 128-29. Implicit GNP deflator from Economic Report of the President, 1986, p. 256. The GNP deflator was used to convert the "other funds" deficit into 1985 dollars.

Figure 6. State-local purchases of goods and services from Economic Report of the President, 1986, p. 255. GNP deflator for state-local purchases of goods and services from Economic Report of the President, 1986, p.257. The GNP deflator for state and local purchases of goods and services was used to convert this series into 1985 dollars. The series referred to as "net purchases" equals state-local purchases of goods and services minus the BRH depreciation estimate.

Figure 9. State-local debt for:

1984 from Governmental Finances in 1983-84, p. 4.

1974-83 from Statistical Abstract of the United States, 1986, p. 262.

1971-73 from Statistical Abstract of the United States, 1978, p. 287.

1952-70 from Historical Statistics of the U.S., Colonial Times to 1970, Bicentennial Edition, Part 2, p. 1127.

1944-51 from Governmental Debt in 1951.

Implicit GNP deflator from Economic Report of the President, 1986, p. 256. The GNP deflator was used to convert state-local debt into 1985 dollars.

Figure 10. Net private domestic fixed nonresidential investment series for structures and producers' durable equipment from Economic Report of the President, 1986, p. 271. GNP deflators for structures and producers' durable equipment from Economic Report of the President, 1986, p. 256. The NIPA series for private fixed nonresidential investment in structures in and producers' durables were each converted to 1985 dollars by the corresponding GNP deflator and the two series were summed to obtain the net private investment series used here.

Appendix Table 1

TOTAL STATE-LOCAL NONRESIDENTIAL CAPITAL STOCK
(millions of current dollars)

YEAR	NET STOCK		NET INVESTMENT		DEPRECIATION		GROSS INV'T
	BEA	BRH	BEA	BRH	BEA	BRH	
1927	28757	30444	1750	1814	782	718	2533
1928	29717	31490	1783	1851	808	741	2593
1929	30183	31980	1749	1820	853	783	2603
1930	29573	31280	2002	2072	861	790	2863
1931	26834	28399	1779	1848	826	757	2605
1932	26847	28350	999	1069	730	660	1729
1933	31169	32843	437	527	841	751	1278
1934	33871	35802	708	829	991	870	1700
1935	35427	37556	569	700	989	857	1557
1936	38830	41368	1763	1907	1109	965	2872
1937	40204	43134	1334	1506	1191	1019	2526
1938	41185	44292	1731	1908	1233	1056	2963
1939	42464	45755	2012	2189	1268	1090	3279
1940	45489	49101	1157	1356	1313	1113	2469
1941	52932	57030	482	720	1465	1228	1949
1942	59369	63953	-405	-117	1741	1450	1322
1943	59379	64434	-976	-674	1862	1529	780
1944	56952	62580	-1020	-702	1798	1447	668
1945	58532	65103	-914	-575	1795	1422	769
1946	66604	75057	-287	111	1980	1570	1655
1947	77923	88434	1136	1528	2382	1979	3436
1948	83558	95171	1918	2345	2749	2302	4545
1949	83092	95117	2412	2923	2798	2281	5189
1950	90699	103933	2914	3409	2794	2296	5697
1951	102241	117041	3277	3850	3334	2759	6602
1952	107015	122797	3416	4014	3578	2976	6979
1953	106550	122790	3949	4551	3715	3109	7652
1954	112029	128815	5386	6146	3782	3021	9165
1955	123869	142202	6001	6426	3973	3547	9970
1956	139114	159235	6652	7314	4577	3913	11224
1957	148623	169766	7355	8070	5030	4313	12378
1958	155310	177221	7469	8239	5258	4486	12718
1959	160392	183090	7605	8419	5449	4633	13045
1960	167432	190914	7518	8372	5621	4764	13127
1961	177080	201734	8241	9101	5889	5026	14112
1962	190347	216445	8466	9381	6248	5327	14688
1963	203944	231450	9986	10936	6620	5667	16587
1964	216770	245660	10887	11846	7030	6067	17892
1965	236581	267468	12043	13092	7535	6484	19570
1966	262768	296330	13626	14645	8226	7201	21815
1967	288212	323835	15555	16570	8935	7913	24451
1968	322017	361252	17054	18124	9884	8809	26898
1969	363225	406785	16281	17573	11099	9801	27357
1970	413043	461795	15272	16336	12539	11470	27773
1971	457445	512492	15122	17206	14071	11973	29153
1972	500482	561309	14843	16689	15468	13613	30247
1973	571415	640423	14217	16501	17190	14896	31363
1974	727933	814243	17087	19985	21163	18258	38221
1975	755437	848304	16230	19730	24220	20714	40425
1976	781844	882474	13777	17712	25462	21527	39238
1977	855480	968746	10190	14674	27373	22889	37563
1978	1039326	1178726	13577	18835	31287	26030	44866
1979	1180096	1338393	12896	19165	36551	30283	49448
1980	1283640	1462479	13856	21163	41912	34605	55768
1981	1317710	1514541	8919	17012	44552	36459	53472
1982	1312251	1518587	6238	14797	45755	37196	51993
1983	1351740	1575019	5826	14719	47043	38151	52871
1984	1433498	1676276	9544	18843	49500	40201	59044
1985	1540178	1803238	15874	24973	53482	44324	68834

Appendix Table 2

STATE-LOCAL EQUIPMENT
(millions of 1985 dollars)

YEAR	NET STOCK		NET INVESTMENT		DEPRECIATION		GROSS INV'T
	BEA	BRH	BEA	BRH	BEA	BRH	
1927	4767	4468	839	721	443	561	1282
1928	5523	5097	746	620	516	641	1262
1929	6589	6007	1050	897	603	756	1653
1930	7229	6513	631	499	693	825	1324
1931	7908	7067	668	546	775	897	1443
1932	8415	7476	500	403	855	952	1355
1933	8506	7523	90	46	918	962	1009
1934	8320	7352	-183	-169	958	943	775
1935	8272	7350	-47	-3	988	944	942
1936	8299	7446	27	95	1024	955	1050
1937	8702	7909	398	457	1070	1012	1468
1938	9224	8481	516	564	1130	1082	1646
1939	9875	9164	641	673	1196	1163	1836
1940	9988	9337	112	170	1243	1184	1354
1941	9685	9130	-299	-204	1252	1157	953
1942	9325	8885	-355	-241	1241	1126	885
1943	8719	8427	-598	-452	1212	1066	614
1944	8126	7994	-584	-427	1170	1013	586
1945	7565	7600	-554	-389	1126	960	571
1946	7104	7300	-454	-295	1080	921	626
1947	8081	8320	963	1005	1087	1045	2050
1948	9561	9744	1460	1405	1166	1221	2626
1949	11122	11177	1541	1413	1272	1400	2813
1950	12751	12616	1606	1419	1394	1581	2999
1951	14485	14090	1691	1453	1530	1767	3221
1952	16336	15674	1845	1563	1687	1970	3532
1953	18096	17133	1735	1438	1860	2157	3595
1954	20106	18816	1982	1660	2052	2375	4035
1955	22128	20507	1994	1668	2268	2594	4262
1956	24298	22346	2140	1813	2506	2832	4645
1957	26428	24162	2099	1791	2760	3068	4859
1958	26663	24260	232	96	2955	3091	3187
1959	26952	24507	285	244	3087	3127	3372
1960	27490	25068	529	553	3226	3202	3755
1961	28016	25683	519	606	3365	3278	3885
1962	28640	26438	615	745	3500	3371	4115
1963	29579	27515	925	1062	3641	3503	4565
1964	30920	28972	1323	1436	3794	3680	5117
1965	32536	30667	1595	1671	3964	3888	5559
1966	34682	32820	2116	2123	4161	4154	6277
1967	38332	36312	3598	3444	4430	4585	8029
1968	42027	39752	3644	3392	4763	5016	8407
1969	45899	43279	3817	3478	5123	5463	8940
1970	49799	46771	3845	3443	5504	5906	9349
1971	53663	50195	3811	3376	5907	6342	9718
1972	58190	54216	4464	3965	6360	6859	10825
1973	60231	55930	2013	1690	6768	7091	8781
1974	62545	57995	2282	2037	7113	7358	9395
1975	64159	59500	1593	1484	7453	7562	9046
1976	65277	60655	1102	1139	7752	7716	8854
1977	65970	61533	684	865	8013	7831	8697
1978	66846	62690	864	1142	8252	7974	9116
1979	68171	64339	1307	1625	8498	8179	9804
1980	69721	66232	1528	1867	8747	8408	10275
1981	70796	67698	1061	1446	8970	8585	10031
1982	72108	69392	1294	1670	9165	8789	10459
1983	74499	72065	2357	2635	9389	9111	11746
1984	78098	75783	3549	3666	9688	9572	13238
1985	82498	80129	4374	4286	10064	10152	14438

Appendix Table 3

STATE-LOCAL EDUCATIONAL BUILDINGS
(millions of 1985 dollars)

YEAR	NET STOCK		NET INVESTMENT		DEPRECIATION		GROSS INV'T
	BEA	BRH	BEA	BRH	BEA	BRH	
1927	57060	69428	2324	2817	1786	1293	4110
1928	59499	72382	2416	2928	1860	1348	4276
1929	62019	75437	2497	3028	1936	1406	4434
1930	64493	78468	2453	3004	2015	1463	4467
1931	66436	80994	1925	2503	2086	1509	4012
1932	66410	81586	-26	587	2132	1519	2107
1933	65110	80929	-1287	-651	2145	1509	858
1934	65323	81782	211	845	2159	1525	2370
1935	65518	82631	194	842	2188	1540	2382
1936	68733	86490	3186	3825	2249	1610	5435
1937	69653	88094	912	1590	2319	1641	3231
1938	71227	90363	1560	2249	2372	1683	3932
1939	74736	94569	3476	4169	2454	1762	5930
1940	74135	94721	-596	151	2512	1766	1916
1941	73424	94776	-706	55	2525	1765	1820
1942	72200	94334	-1212	-438	2531	1758	1319
1943	70247	93176	-1934	-1147	2523	1736	589
1944	68064	91794	-2165	-1370	2504	1709	339
1945	66048	90580	-1998	-1203	2482	1687	484
1946	64597	89927	-1413	-647	2469	1703	1056
1947	63739	89864	-818	-63	2465	1710	1647
1948	65256	92159	1619	2275	2499	1843	4118
1949	67775	95457	2523	3268	2553	1808	5077
1950	71218	99683	3425	4189	2634	1870	6059
1951	75569	104824	4317	5095	2736	1959	7053
1952	80018	110080	4410	5210	2849	2050	7259
1953	84808	115692	4753	5562	2968	2159	7721
1954	92442	124152	6771	8384	3116	1503	9887
1955	99513	132069	7823	7847	3298	3274	11121
1956	106807	140247	7242	8105	3488	2624	10729
1957	114608	148962	7741	8638	3680	2784	11421
1958	122736	158040	8062	8997	3883	2948	11945
1959	129873	166174	7086	8062	4082	3106	11168
1960	137461	174796	7533	8545	4279	3267	11812
1961	145886	184291	8392	9410	4493	3475	12885
1962	153689	193214	7804	8845	4713	3672	12517
1963	163008	203694	9254	10386	4945	3813	14199
1964	173148	215043	10121	11249	5208	4080	15329
1965	184522	227679	11318	12523	5497	4292	16815
1966	198909	243375	14363	15557	5839	4646	20203
1967	214747	260597	15799	17068	6235	4965	22034
1968	229477	276818	14688	16076	6642	5254	21330
1969	241362	290312	11842	13374	7014	5482	18857
1970	249843	300516	9579	10113	7341	6807	16920
1971	258828	311329	7903	10717	7629	4816	15533
1972	265652	320080	6800	8673	7889	6016	14689
1973	273276	329716	7679	9551	8155	6284	15835
1974	280413	338965	7133	9166	8425	6392	15558
1975	286902	347665	6499	8622	8691	6567	15190
1976	289902	353002	2972	5290	8914	6596	11886
1977	290325	355870	420	2842	9070	6648	9490
1978	291012	359081	681	3182	9207	6706	9888
1979	291463	362136	448	3028	9344	6764	9792
1980	292347	365697	876	3530	9485	6831	10361
1981	290643	366772	-1689	1065	9604	6850	7915
1982	287554	366541	-3062	-229	9675	6842	6613
1983	283573	365492	-3946	-1040	9726	6820	5780
1984	279487	364394	-4051	-1088	9760	6797	5709
1985	276430	364370	-3029	-23	9804	6798	6775

Appendix Table 4

STATE-LOCAL HOSPITAL BUILDINGS
(millions of 1985 dollars)

YEAR	NET STOCK		NET INVESTMENT		DEPRECIATION		GROSS INV'T
	BEA	BRH	BEA	BRH	BEA	BRH	
1927	9439	11058	609	690	287	206	896
1928	10362	12065	913	997	308	224	1221
1929	11181	12973	812	900	330	242	1142
1930	12263	14147	1071	1163	356	264	1427
1931	13392	15375	1118	1216	384	286	1502
1932	14258	16349	859	965	411	304	1269
1933	14601	16810	340	456	430	314	770
1934	14939	17271	335	457	444	323	779
1935	15036	17498	97	225	455	327	552
1936	15618	18210	575	706	469	339	1044
1937	15638	18371	20	159	481	342	502
1938	16332	19204	687	825	496	358	1183
1939	17396	20411	1056	1196	522	381	1577
1940	17478	20650	81	237	542	385	622
1941	17371	20708	-105	57	549	386	443
1942	17141	20647	-228	-61	553	385	325
1943	16969	20648	-170	1	556	386	386
1944	16893	20747	-75	99	561	387	486
1945	16999	21030	103	280	569	392	672
1946	17079	21292	86	260	579	405	665
1947	16845	21246	-223	-45	584	407	362
1948	17090	21679	277	428	593	441	870
1949	18062	22837	973	1147	612	438	1585
1950	19295	24260	1221	1410	643	454	1864
1951	20465	25630	1160	1357	675	478	1835
1952	21499	26871	1024	1230	708	502	1732
1953	22140	27729	635	850	733	518	1368
1954	22769	28582	624	845	755	533	1378
1955	23301	29343	541	754	777	563	1318
1956	23612	29893	309	544	794	558	1103
1957	24055	30578	439	678	810	571	1249
1958	24741	31509	697	923	832	607	1529
1959	25477	32496	742	978	856	621	1599
1960	26098	33376	594	872	879	601	1473
1961	26505	34048	438	666	899	671	1337
1962	27057	34869	572	813	919	678	1491
1963	27515	35604	463	728	939	675	1403
1964	28056	36425	550	813	959	696	1509
1965	28643	37298	582	865	980	696	1562
1966	29109	38056	493	751	1002	744	1494
1967	30102	39342	1022	1275	1027	774	2049
1968	31259	40799	1152	1443	1059	768	2211
1969	32449	42296	1184	1483	1094	796	2278
1970	33455	43617	996	1310	1128	815	2125
1971	34610	45095	1156	1464	1162	855	2318
1972	35606	46423	987	1316	1196	867	2183
1973	36410	47568	823	1134	1226	915	2049
1974	37450	48955	1050	1374	1256	932	2306
1975	39056	50910	1591	1937	1296	950	2887
1976	40559	52774	1489	1846	1341	984	2830
1977	41491	54082	925	1295	1379	1009	2304
1978	42236	55212	737	1120	1411	1028	2147
1979	42513	55885	274	667	1434	1041	1708
1980	42699	56476	185	585	1452	1052	1637
1981	42925	57112	224	630	1469	1062	1693
1982	42972	57576	45	460	1484	1069	1529
1983	43053	58081	79	500	1499	1078	1578
1984	42894	58351	-157	268	1510	1085	1353
1985	42584	58477	-308	125	1518	1085	1210

Appendix Table 5

STATE-LOCAL OTHER BUILDINGS
(millions of 1985 dollars)

YEAR	NET STOCK		NET INVESTMENT		DEPRECIATION		GROSS INV'T
	BEA	BRH	BEA	BRH	BEA	BRH	
1927	12273	14075	1203	1295	354	263	1557
1928	13459	15360	1176	1275	385	287	1562
1929	14710	16717	1241	1345	417	313	1658
1930	15970	18091	1248	1362	450	336	1698
1931	17736	19976	1751	1868	490	372	2240
1932	18556	20931	812	947	525	391	1338
1933	18766	21289	208	355	544	397	753
1934	19913	22583	1138	1283	567	422	1705
1935	20633	23463	714	872	596	438	1310
1936	22869	25855	2216	2372	637	482	2853
1937	24101	27264	1221	1397	684	509	1906
1938	25744	29091	1629	1812	726	543	2355
1939	28801	32335	3031	3216	788	603	3819
1940	30181	33932	1368	1583	848	633	2216
1941	30412	34401	230	465	879	644	1109
1942	29810	34055	-596	-343	889	636	294
1943	28915	33426	-887	-624	887	624	0
1944	28025	32807	-883	-614	883	614	0
1945	27141	32200	-877	-601	877	601	0
1946	26468	31807	-671	-389	877	596	206
1947	26295	31917	-168	109	873	596	705
1948	26676	32582	392	660	876	608	1268
1949	27667	33862	1009	1268	891	632	1900
1950	28846	35338	1205	1464	919	660	2124
1951	29757	36558	938	1210	954	682	1892
1952	30122	37247	390	683	989	696	1379
1953	30957	38410	854	1153	1016	716	1870
1954	32413	40199	1443	1773	1080	750	2523
1955	34395	42521	1965	2302	1131	794	3096
1956	36086	44569	1676	2030	1185	831	2861
1957	38023	46873	1919	2284	1239	874	3158
1958	40187	49417	2146	2522	1297	922	3444
1959	42379	52004	2173	2565	1360	969	3533
1960	44831	54864	2431	2835	1427	1023	3858
1961	47685	58138	2827	3246	1501	1083	4329
1962	50173	61067	2467	2904	1575	1138	4042
1963	53166	64516	2969	3419	1652	1202	4621
1964	56319	68142	3125	3594	1739	1270	4864
1965	59646	71961	3298	3786	1829	1341	5127
1966	62878	75709	3205	3716	1922	1411	5127
1967	67504	80862	4585	5109	2030	1507	6615
1968	72882	86793	5332	5879	2163	1616	7496
1969	79434	93919	6496	7065	2319	1750	8815
1970	84298	99408	4822	5441	2473	1854	7295
1971	89838	105603	5493	6142	2618	1969	8111
1972	95065	111527	5182	5872	2767	2077	7949
1973	100306	117503	5197	5925	2918	2190	8115
1974	106517	124482	6157	6919	3082	2320	9239
1975	110873	129666	4317	5139	3240	2418	7557
1976	113735	133410	2838	3712	3362	2488	6199
1977	115676	136278	1926	2844	3459	2541	5385
1978	118940	140496	3235	4181	3566	2620	6801
1979	121058	143618	2100	3095	3673	2679	5774
1980	123673	147269	2592	3619	3776	2749	6369
1981	125560	150239	1871	2945	3877	2803	5748
1982	127508	153309	1931	3043	3971	2860	5903
1983	129458	156419	1932	3084	4070	2918	6002
1984	131185	159349	1713	2904	4165	2974	5878
1985	133563	162961	2357	3581	4267	3043	6624

Appendix Table 6

STATE-LOCAL HIGHWAYS & STREETS
(millions of 1985 dollars)

YEAR	NET STOCK		NET INVESTMENT		DEPRECIATION		GROSS INV'T
	BEA	BRH	BEA	BRH	BEA	BRH	
1927	124026	121351	6177	6087	2645	2734	8822
1928	131452	128684	7189	7098	2809	2900	9998
1929	138869	136017	7179	7099	2984	3065	10164
1930	149068	146106	9873	9766	3187	3293	13059
1931	159077	156010	9689	9586	3413	3515	13102
1932	167832	164684	8475	8396	3632	3711	12107
1933	172343	169188	4365	4360	3806	3812	8172
1934	176783	173660	4299	4329	3944	3914	8243
1935	179939	176906	3054	3142	4073	3985	7128
1936	186763	183814	6605	6687	4224	4142	10829
1937	193117	190288	6150	6267	4404	4288	10555
1938	201622	198917	8233	8352	4602	4483	12835
1939	209859	207306	7974	8121	4818	4672	12792
1940	217578	215212	7471	7653	5031	4850	12503
1941	221486	219394	3785	4048	5208	4945	8993
1942	220891	219186	-576	-201	5315	4940	4739
1943	218011	216800	-2788	-2310	5364	4886	2576
1944	214801	214170	-3107	-2545	5388	4826	2280
1945	211883	211910	-2824	-2188	5412	4775	2587
1946	211882	212603	-1	671	5462	4791	5461
1947	213592	215043	1655	2362	5553	4846	7208
1948	215976	218198	2309	3054	5663	4918	7972
1949	220283	223293	4169	4932	5795	5032	9963
1950	226292	230101	5817	6590	5959	5185	11776
1951	231002	235655	4560	5376	6127	5310	10687
1952	236645	242162	5462	6298	6293	5457	11755
1953	244173	250556	7287	8125	6485	5647	13772
1954	255828	263038	11281	12083	6729	5927	18010
1955	268371	276396	12143	12930	7017	6229	19160
1956	280942	289782	12168	12957	7318	6529	19486
1957	294490	304130	13113	13889	7629	6853	20742
1958	310977	321373	15959	16691	7974	7242	23933
1959	328237	339367	16708	17418	8357	7647	25065
1960	344399	356264	15644	16356	8740	8028	24384
1961	362041	374616	17077	17765	9130	8442	26207
1962	380640	393907	18005	18674	9546	8878	27551
1963	401254	415179	19956	20591	9992	9357	29948
1964	421196	435773	19304	19935	10451	9819	29755
1965	441574	456794	19726	20349	10917	10294	30642
1966	462986	478833	20728	21334	11396	10791	32125
1967	483440	499923	19799	20414	11880	11265	31680
1968	504401	521521	20290	20908	12369	11752	32660
1969	522624	540432	17638	18305	12844	12178	30483
1970	539553	558094	16387	17097	13287	12577	29674
1971	555722	575050	15652	16413	13720	12959	29373
1972	569507	589705	13346	14186	14130	13289	27475
1973	581023	602182	11147	12078	14501	13570	25648
1974	589006	611255	7728	8783	14829	13774	22557
1975	594436	617904	5257	6436	15104	13924	20360
1976	599808	624599	5200	6481	15356	14075	20556
1977	602776	629029	2873	4288	15590	14175	18463
1978	605299	633135	2443	3975	15800	14267	18242
1979	607147	636688	1789	3439	15997	14348	17787
1980	608781	640147	1581	3349	16192	14424	17773
1981	609848	643160	1034	2917	16377	14494	17411
1982	611248	646611	1355	3340	16557	14572	17912
1983	613992	651497	2656	4730	16754	14681	19411
1984	618865	658581	4718	6857	16981	14842	21699
1985	626193	668168	7093	9280	17244	15057	24337

Appendix Table 7

STATE-LOCAL CONSERVATION & DEVELOPMENT STRUCTURES
(millions of 1985 dollars)

YEAR	NET STOCK		NET INVESTMENT		DEPRECIATION		GROSS INV'T
	BEA	BRH	BEA	BRH	BEA	BRH	
1927	147	146	90	90	2	1	92
1928	328	326	180	179	4	6	184
1929	588	585	256	257	8	8	265
1930	819	817	229	230	13	12	242
1931	1014	1014	194	195	17	15	210
1932	1125	1127	110	112	20	18	130
1933	1314	1319	188	190	23	20	210
1934	1929	1935	609	611	30	28	639
1935	2444	2453	511	514	41	37	551
1936	3156	3170	708	711	53	50	761
1937	3847	3868	684	692	67	58	750
1938	4305	4338	454	466	78	67	532
1939	4823	4870	514	527	88	74	601
1940	4993	5058	169	187	96	78	265
1941	4988	5074	-5	16	99	78	94
1942	4888	4998	-100	-76	100	76	0
1943	4787	4922	-100	-76	100	76	0
1944	4688	4848	-100	-73	100	73	0
1945	4587	4773	-100	-73	100	73	0
1946	4611	4825	23	51	101	73	124
1947	4670	4912	58	87	103	75	162
1948	4760	5032	90	119	106	77	196
1949	4928	5231	167	197	110	80	277
1950	5115	5451	185	218	116	83	301
1951	5269	5640	152	187	121	86	273
1952	5344	5753	75	112	125	88	200
1953	5479	5927	133	172	129	91	263
1954	5642	6130	162	202	134	94	296
1955	5956	6487	313	353	141	100	453
1956	6425	6999	465	508	150	107	615
1957	6849	7471	421	468	160	114	581
1958	7204	7875	351	401	170	120	521
1959	7604	8329	397	450	180	128	577
1960	8083	8864	475	531	191	135	666
1961	8595	9435	506	566	203	144	710
1962	9247	10149	646	707	217	155	863
1963	10364	11329	1108	1170	236	173	1343
1964	11446	12479	1072	1140	258	190	1331
1965	13022	14126	1563	1633	287	216	1850
1966	14567	15750	1532	1610	318	240	1850
1967	16344	17611	1762	1846	352	269	2114
1968	17944	19305	1586	1679	388	294	1974
1969	19347	20812	1391	1494	421	318	1812
1970	20460	22039	1104	1217	449	336	1553
1971	21190	22893	723	847	473	350	1196
1972	21715	23552	521	653	492	360	1013
1973	22043	24020	324	465	506	366	831
1974	22546	24670	500	644	521	377	1021
1975	23102	25378	551	702	539	388	1090
1976	24052	26484	941	1096	560	404	1501
1977	24686	27286	628	795	583	416	1211
1978	24971	27747	282	458	599	424	882
1979	25259	28218	286	467	613	431	898
1980	25626	28774	364	551	627	440	991
1981	25977	29322	347	543	643	447	990
1982	26269	29817	289	491	658	455	946
1983	26449	30208	178	387	670	461	848
1984	26510	30487	60	277	681	465	742
1985	26760	30960	248	469	694	473	942

Appendix Table 8
STATE-LOCAL SEWER STRUCTURES
(millions of 1985 dollars)

YEAR	NET STOCK		NET INVESTMENT		DEPRECIATION		GROSS INV'T
	BEA	BRH	BEA	BRH	BEA	BRH	
1927	22121	24896	1711	1854	516	373	2227
1928	23962	26893	1789	1940	554	402	2343
1929	25013	28115	1021	1187	586	420	1607
1930	26274	29554	1224	1398	615	441	1839
1931	27249	30716	948	1130	643	461	1591
1932	27737	31405	473	669	664	468	1137
1933	27769	31647	32	236	678	474	709
1934	28433	32523	645	851	692	486	1337
1935	29113	33422	662	874	713	501	1374
1936	31175	35703	2003	2215	746	534	2749
1937	32778	37538	1557	1783	788	562	2345
1938	34533	39536	1705	1941	827	591	2532
1939	36443	41698	1856	2101	869	625	2726
1940	37612	43138	1136	1398	907	645	2043
1941	37923	43735	302	580	932	655	1235
1942	37746	43855	-172	117	944	656	773
1943	37164	43579	-567	-268	950	651	383
1944	36453	43181	-690	-387	950	647	260
1945	35845	42890	-591	-283	950	642	359
1946	35725	43089	-116	193	954	644	838
1947	36181	43866	443	755	968	656	1411
1948	37172	45182	962	1279	992	675	1954
1949	38437	46780	1229	1552	1023	700	2252
1950	39733	48417	1259	1591	1056	725	2315
1951	41090	50124	1318	1659	1091	750	2409
1952	42392	51788	1264	1616	1126	774	2390
1953	43981	53747	1544	1903	1163	804	2707
1954	45729	55873	1697	2066	1204	836	2902
1955	47561	58095	1780	2159	1248	869	3028
1956	49717	60650	2096	2482	1295	908	3390
1957	52132	63476	2347	2745	1348	950	3695
1958	54686	66454	2482	2893	1406	994	3888
1959	57440	69645	2675	3100	1467	1042	4142
1960	59916	72575	2406	2847	1528	1087	3933
1961	62427	75557	2438	2896	1587	1130	4026
1962	65453	79066	2940	3409	1652	1182	4591
1963	67783	81901	2262	2754	1716	1224	3978
1964	71585	86215	3695	4191	1787	1291	5481
1965	74677	89844	3005	3525	1865	1345	4870
1966	77955	93677	3185	3724	1940	1401	5125
1967	80048	96351	2032	2598	2006	1441	4039
1968	83757	100649	3604	4176	2078	1506	5682
1969	86288	103800	2459	3061	2154	1552	4613
1970	89027	107176	2660	3280	2223	1603	4883
1971	92012	110819	2899	3539	2297	1656	5195
1972	94847	114336	2756	3417	2372	1711	5128
1973	98263	118452	3318	3998	2451	1772	5770
1974	103948	124847	5522	6213	2558	1867	8080
1975	110262	131899	6133	6850	2691	1973	8824
1976	116844	139251	6394	7143	2831	2083	9225
1977	122768	145987	5755	6543	2972	2184	8727
1978	129879	153938	6909	7725	3119	2304	10028
1979	136416	161361	6351	7210	3274	2414	9625
1980	141884	167761	5311	6218	3416	2509	8727
1981	145237	172101	3258	4216	3533	2574	6790
1982	147699	175589	2391	3389	3624	2627	6016
1983	149639	178592	1884	2917	3705	2672	5589
1984	152384	182427	2667	3726	3789	2730	6455
1985	155435	186600	2954	4054	3881	2791	6845

Appendix Table 9

STATE-LOCAL WATER STRUCTURES
(millions of 1985 dollars)

YEAR	NET STOCK		NET INVESTMENT		DEPRECIATION		GROSS INV'T
	BEA	BRH	BEA	BRH	BEA	BRH	
1927	23972	27068	1151	1317	577	412	1728
1928	24849	28123	862	1039	602	425	1464
1929	25796	29256	932	1115	627	444	1559
1930	27712	31360	1886	2071	661	476	2547
1931	29163	33013	1429	1628	699	501	2128
1932	29850	33916	676	889	727	514	1403
1933	29878	34173	29	253	743	519	772
1934	30037	34566	155	387	755	523	910
1935	30257	35026	217	454	767	531	984
1936	30768	35782	503	743	783	543	1287
1937	31069	36337	297	546	800	551	1097
1938	31503	37030	427	682	816	561	1243
1939	32080	37872	569	830	835	575	1405
1940	32907	38970	814	1081	858	591	1672
1941	33407	39752	492	769	879	601	1371
1942	33268	39905	-137	150	893	605	756
1943	32778	39715	-482	-187	897	602	415
1944	32293	39533	-479	-179	898	598	419
1945	31890	39437	-397	-95	900	598	503
1946	31785	39641	-103	201	906	601	802
1947	32070	40237	280	587	916	609	1196
1948	32643	41124	564	873	933	624	1497
1949	33350	42150	696	1010	954	640	1649
1950	34018	43144	657	978	975	654	1631
1951	34975	44430	942	1266	998	674	1940
1952	35874	45665	885	1216	1023	692	1908
1953	36688	46822	801	1139	1047	710	1848
1954	37699	48180	996	1337	1073	732	2069
1955	38912	49746	1162	1541	1101	722	2264
1956	40292	51485	1391	1712	1133	812	2524
1957	41458	53018	1148	1509	1165	805	2314
1958	42412	54347	940	1309	1193	823	2133
1959	43265	55583	839	1216	1220	842	2058
1960	44233	56938	952	1334	1245	863	2198
1961	45383	58481	1133	1519	1273	887	2406
1962	46574	60072	1174	1566	1304	911	2477
1963	48477	62376	1873	2269	1342	946	3215
1964	50656	64964	2144	2548	1388	984	3532
1965	53795	68517	3091	3497	1445	1040	4537
1966	56058	71211	2227	2652	1505	1080	3732
1967	58901	74492	2799	3230	1561	1129	4360
1968	62314	78353	3359	3801	1629	1187	4988
1969	64890	81398	2536	2997	1695	1234	4231
1970	66447	83444	1533	2014	1746	1266	3280
1971	67425	84925	962	1458	1784	1288	2746
1972	68377	86391	938	1443	1815	1310	2753
1973	69085	87624	697	1214	1845	1328	2542
1974	70058	89130	958	1483	1876	1351	2834
1975	71234	90848	1158	1691	1911	1378	3069
1976	71981	92150	735	1281	1943	1397	2679
1977	72871	93603	876	1431	1974	1419	2850
1978	74660	95960	1761	2321	2014	1455	3776
1979	75834	97718	1156	1731	2056	1481	3212
1980	77627	100103	1767	2348	2100	1518	3866
1981	78804	101889	1158	1758	2144	1544	3302
1982	79727	103434	909	1520	2179	1568	3088
1983	79696	104041	-31	598	2206	1577	2175
1984	80151	105140	448	1082	2228	1594	2676
1985	80749	106391	588	1231	2255	1613	2843

Appendix Table 10

STATE-LOCAL OTHER STRUCTURES
(millions of 1985 dollars)

YEAR	NET STOCK		NET INVESTMENT		DEPRECIATION		GROSS INV'T
	BEA	BRH	BEA	BRH	BEA	BRH	
1927	14508	16804	1561	1676	424	309	1985
1928	15635	18060	1103	1229	459	333	1562
1929	16651	19213	994	1128	489	355	1483
1930	17747	20454	1072	1214	518	376	1590
1931	19431	22285	1647	1792	555	410	2202
1932	20477	23494	1024	1183	592	432	1616
1933	20626	23822	147	321	614	440	761
1934	20703	24084	76	257	625	443	700
1935	21161	24731	447	632	640	455	1087
1936	23221	26973	2016	2195	675	496	2691
1937	24357	28311	1112	1309	719	522	1831
1938	25775	29938	1388	1593	756	551	2144
1939	27207	31591	1402	1617	798	582	2200
1940	28047	32668	822	1053	833	602	1655
1941	28548	33417	490	733	859	616	1349
1942	28364	33497	-180	78	875	617	695
1943	27833	33238	-518	-253	879	613	361
1944	27302	32986	-520	-247	880	608	361
1945	26789	32756	-502	-225	881	604	379
1946	27199	33447	465	676	901	690	1366
1947	31484	37987	4636	4443	1009	1202	5646
1948	33917	40712	2695	2667	1082	1110	3777
1949	34019	41144	111	422	1098	787	1209
1950	34043	41507	25	356	1114	783	1139
1951	34042	41854	1	339	1128	790	1129
1952	33893	42061	-122	203	1142	818	1020
1953	33879	42409	2	340	1154	816	1156
1954	34031	42929	151	510	1168	810	1320
1955	34363	43635	328	691	1188	825	1516
1956	35237	44887	874	1225	1215	864	2089
1957	36136	46172	911	1257	1248	902	2159
1958	37328	47759	1189	1553	1285	921	2474
1959	39195	50026	1886	2218	1333	1001	3219
1960	41376	52615	2223	2534	1393	1082	3616
1961	43843	55503	2560	2825	1461	1196	4021
1962	45667	57766	1883	2215	1523	1191	3406
1963	48217	60765	2663	2935	1590	1319	4254
1964	51135	64145	3044	3308	1667	1403	4711
1965	54385	67875	3226	3650	1748	1323	4974
1966	57877	71864	3657	3903	1847	1601	5504
1967	62625	77121	4934	5144	1960	1750	6894
1968	67680	82712	5321	5472	2092	1942	7414
1969	72467	88070	4824	5244	2218	1798	7042
1970	76725	92933	4404	4758	2344	1990	6748
1971	79668	96520	2951	3510	2452	1892	5402
1972	82832	100351	3410	3750	2550	2211	5960
1973	85987	104207	3096	3773	2644	1967	5740
1974	89617	108564	3565	4264	2743	2044	6309
1975	92571	112284	2891	3640	2844	2096	5736
1976	95401	115910	2769	3548	2945	2165	5714
1977	98339	119673	2875	3683	3038	2230	5913
1978	101865	124053	3449	4286	3140	2303	6589
1979	105223	128304	3286	4160	3246	2372	6532
1980	107669	131686	2395	3309	3345	2431	5740
1981	110418	135401	2691	3636	3448	2503	6139
1982	112082	138073	1628	2614	3533	2546	5160
1983	113391	140426	1281	2303	3603	2581	4884
1984	114735	142848	1314	2370	3671	2615	4985
1985	115968	145187	1845	2288	3755	3311	5600

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