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INTRODUCTION AND SUMMARY

This study concentrates on the long-term trends and the short-term variability of capital formation and credit in the household (consumer) sector of the U.S. economy. Its major thesis is that consumers are now a more important determinant—both direct and indirect—of the growth and the cyclical variation in the nation's total fixed capital investment than are business enterprises. Time-series data are used to examine a number of interrelated problems that are part of this broad picture. First, what have been the long-term trends in household gross fixed capital formation, and to what degree have trends in the household sector offset those in the enterprise sector? Second, what roles have the growth of consumer credit institutions, and the change in the cost of consumer borrowing, played in the development of household capital formation and savings? Third, to what degree is the short-term (cyclical) variability of total output and income associated with movements in household as opposed to enterprise capital formation?

Other expenditure series that are thought by many to be usefully viewed as reflecting capital formation are examined briefly. These are outlays for education, which can be thought of as investment in human skills, and outlays for research and development, thought of as investment in knowledge. Finally, rough estimates are provided for the imputed income generated by the stock of household tangible assets, as well as the flow of consumption services yielded by this stock.

Since the turn of the century, pervasive changes have taken place in the characteristics of capital formation in the United States. One of the most striking has been a shift in the structure of tangible capital assets—toward assets owned directly by households and away from those owned directly by enterprises. The relative importance of government tangible capital has also grown markedly, and capital in the form of intangibles (investments in knowledge and in persons) appears to have grown at a

much faster pace than other forms of capital. Thus the traditional role of the business enterprise sector as the main site of capital formation in the economy, hence also as a prime generator of both economic growth and economic instability, has been drastically curtailed during this century.

For analysis of long-term trends, it is useful to think of capital formation as the accumulation of assets that yield a flow of real income in the future. These assets can be accumulated by enterprises, households, or government, and can consist of either tangible assets (factories, machines, houses, automobiles, highways) or intangible ones (knowledge, skills). Adherence to the accounting convention that capital formation consists only of factories and machines used in business enterprises may thus give a seriously distorted view. Defined this way, gross capital formation has declined sharply in relation to gross national product during this century; but defined more broadly to include tangible assets accumulated by households and governments, gross capital formation in relation to GNP shows, if anything, a slight upward trend. And if capital is defined to include two of the most important kinds of investment in intangibles (research and development plus education), the ratio of gross capital formation to GNP exhibits a strong upward trend.

The dimensions of these shifts can be illustrated by a few simple comparisons. In the decade from 1899 to 1908, business enterprises accounted for roughly two-thirds of gross fixed capital formation in tangible assets, with the household sector accounting for about a fourth of the total and the public (civilian government) sector for less than a tenth. In the decade from 1949 to 1958, in contrast, the share of the enterprise sector had declined to about 40 per cent of the total; the household sector accounted for about 45 per cent and the share of civilian government was about 15 per cent. In relative terms, the share of enterprises in the total declined by almost 50 per cent, while the shares of both the household and government sectors roughly doubled.[1] And very crude estimates of investment in research and development and

[1] The shift in net capital formation may have been somewhat less striking: to some degree, household capital formation has shifted from long-lived assets (houses) to shorter-lived assets (automobiles and appliances). A similar shift from structures to equipment has also occurred in the business sector, although not necessarily to the same degree. See Simon Kuznets, *Capital in the American Economy,* Princeton University Press for National Bureau of Economic Research, 1961.

in education indicate that, while these categories comprised only about a tenth of total gross investment around the turn of the century, they account for close to a third at the present time.

These structural alterations in the location and characteristics of capital formation have been accompanied by a marked change in credit markets and financing institutions. New types of credit institutions that deal either directly or indirectly with the household sector have come into existence, and older institutions have expanded their functions. The quantity of consumer borrowing has grown enormously, both in absolute amount and as a proportion of total borrowing. On the supply side, secular changes in both number and characteristics of lenders, and in lender standards of creditworthiness, have greatly expanded the availability of credit to households. And on the demand side, not only have consumer finance rates tended to decline but, more importantly, the debt contract maturities offered to consumers have lengthened considerably. Maturities on mortgage debt roughly tripled between 1920 and 1960, and maturities on instalment credit contracts have more than doubled since the mid-1920's. Because most consumers have consistently indicated a preference for the longest possible maturity on credit contracts, a lengthening of maturities brings most borrowers closer to their preferred position and hence is tantamount to a decrease in the effective cost of borrowing.[2]

The expanded role of the household sector in the formation of capital could not, in all likelihood, have occurred without these credit market changes. Capital formation in the household sector has increasingly come to be financed with borrowed funds rather than with accumulated assets. For example, only a little more than 10 per cent of household capital formation was financed with borrowed funds during the period 1901–12; but from 1946 to 1962, almost half was debt-financed, and the ratio was around 60 per cent during the latter part of this period.

For analysis of cyclical variation, the important components of capital formation are the tangible asset categories. Here the household sector (houses, autos, and appliances) has shown a considerable increase relative to the enterprise sector (factories, machines). From the turn of

[2] This proposition—that a lengthening of contract maturities is equivalent to a decrease in the effective cost of borrowing—is discussed in Chapter 3, and is analyzed at greater length in F. Thomas Juster and Robert P. Shay, *Consumer Sensitivity to Finance Rates: An Analytical and Empirical Investigation,* Occasional Paper 88, New York, National Bureau of Economic Research, 1964, pp. 10–17.

the century to the beginning of the First World War, the annual deviations of capital goods output from its long-term trend were four to five times as great, in absolute terms, in the enterprise sector as in the household sector. During the period between World War I and World War II, annual deviations from trend in the enterprise sector were roughly 50 per cent larger than in the household sector. But following World War II, trend deviations were about 50 per cent larger in the household sector. Thus the most important component of cyclical variability in capital goods expenditures is now the household sector, whereas in previous decades variability in the enterprise sector had been dominant. In contrast to earlier periods, however, much of the cyclical variability in household capital formation during the period after World War II has partially offset movements in enterprise capital formation because of timing differences in the two series. Some of the factors that account for this are undoubtedly fortuitous and hence transitory.

The growth of cyclical variability in the household sector, both absolutely and relative to the business enterprise sector, is also clearly evident in the credit series. The flow of short-term consumer instalment credit in the post-World War II period shows almost the same degree of cyclical amplitude, and has approximately the same cyclical timing, as bank loans to business enterprise. The flow of consumer mortgage debt has considerably larger cyclical amplitude in absolute terms, and conforms more systematically in timing to the general business cycle, than the counterpart series on business mortgages and new security issues. Over all, the cyclical amplitude and timing relationships for total long- and short-term external financing in the household and enterprise sectors show much the same pattern after 1945, in marked contrast to what must have been true during earlier decades when the role of households in the credit market was a comparatively minor one.