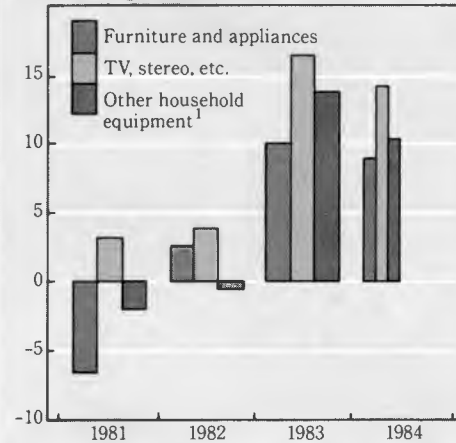


economic commentary

Chart 5 Expenditures for Household Equipment
Percent change, annual rate



1. Consists primarily of china and tableware, floor coverings, linens, and tools.
SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts.

required by these newly formed households probably has helped sustain the rapid growth of spending for household equipment.

Many econometric investigations of the demand for household equipment focus on the relationship between spending for household durables and some measure of housing activity.⁵ However, survey evidence suggests taking a broader view and examining household moving patterns from one housing unit to another—whether the move is to a new or existing home,

and whether the household head is a homeowner or renter. The 1970 and 1977 Consumer Credit Surveys obtained information on purchases of household durable goods by duration of occupancy for owners and renters.⁶ These survey data showed significantly higher spending levels on household durables—especially *big-ticket* items—for households that had changed their place of occupancy. Furthermore, the surveys suggest that the impact on spending probably is distributed over several quarters after the move is made.

Data on moving activity from the Interstate Commerce Commission show that tonnage hauled by major household goods carriers was growing at an extremely rapid rate through the first half of 1984. Given the apparent distributed lag relationship between change of housing unit and purchases of household durables, these moving data not only help explain the spending strength during 1983 and the first part of 1984, but they also suggest continued support for spending on furniture, appliances, and other household equipment during the remainder of 1984 and into 1985.

Finally, it should be noted that just as the electronic “chip” has caused a technological revolution in business equipment and stimulated capital spending, there also has been a technological revolution in house-

hold durable goods. This no doubt has been an important stimulant to spending for high-tech consumer goods (many of which are included in the “furniture and appliances” component of consumption expenditures) as households attempt to incorporate the latest technology into their stock of durable goods.

Conclusion

The surge in spending for postponable, high-durability consumer goods during 1983 and the first half of 1984 reflected a combination of several factors: very favorable income and balance sheet trends; an improvement in many of the determinants of demand specific to various goods; and the effects of rapid technological change. While we can only guess at the extent to which these spending gains have closed the gap between the actual and desired stock of high-durability goods, the magnitude of these outlays suggests that it has been narrowed a fair amount. Consequently, growth in the demand for high-durability goods is likely to begin to slow during the second half of 1984 and into 1985. Nonetheless, the underlying determinants of consumption spending remain quite favorable, so that even after the surge in pent-up demand has been satisfied, long-run growth in consumer outlays should be relatively robust.

The Recovery of Durable Goods: What Exhilarated the Consumer?

by Lawrence Slifman

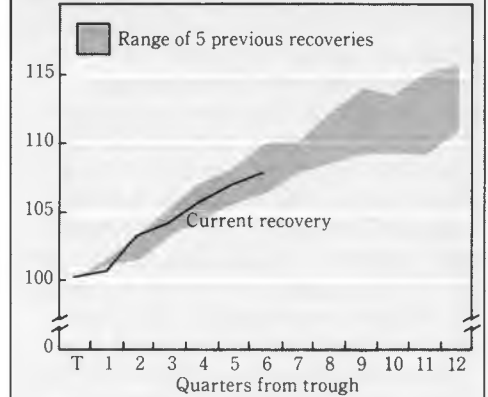
Much of the strength in domestic demand during the first half of 1984 was in the consumption sector. This is not unusual for a recovery. Consumption spending typically rises rapidly in the first four quarters of a recovery and often continues to expand at a healthy pace as the economy moves into the second year of expansion. As shown in chart 1, the cyclical rise in total consumption spending during the first year and a half of the recovery was well within the range of previous postwar experience, rising a total of 8.7 percent. What was unusual, however, was the strength of demand for postponable, relatively durable consumer goods—especially spending for household equipment, such as furniture, kitchen appliances, and electronic goods, as well as outlays for clothing and shoes.

Spending for these goods had suffered considerably during the stagflation of the late 1970s and early 1980s. This extended period of sluggish household investment undoubtedly left a sizable *pent-up demand*. With the cyclical rebound in income growth that began in early 1983, the improvement in

household financial positions, and the drop in consumer borrowing rates from their 1982 highs, households attempted to satisfy this pent-up demand and narrow the gap between actual and desired stocks. As a result, real expenditures for *high-durability* goods—line 2 of table 1—rose nearly 20 percent during the first 6 quarters of the current recovery, more than a third faster than the average performance. At the same time, the cyclical expansion in *low-durability* goods and services—line 7—was slower than average.

The right-hand pair of columns puts the behavior of consumption spending during the first half of 1984 in a cyclical context by com-

Chart 1 Real Consumption
Index: trough = 100



SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts.

Table 1 Cyclical Comparison of Consumer Spending
Percent change

	Trough to t + 6		Trough to t + 4		t + 4 to t + 6	
	Average recovery ^a	Current recovery	Average	Current	Average	Current
1. Total PCE	8.1	8.7	5.8	5.7	2.3	3.0
2. High-durability goods	14.5	19.9	12.4	12.6	2.1	7.3
3. Cars and trucks	34.0 ^b	34.4	37.9 ^b	24.6	-3.9	9.8
4. Household equipment	12.1	19.4	9.0	13.2	3.2	6.2
5. Other consumer durables	15.3	15.8	9.7	9.6	5.6	6.2
6. Clothing and shoes	7.9	16.1	6.3	7.7	1.6	8.4
7. Low-durability goods	6.3	5.3	3.9	3.7	2.4	1.6

a. Average for the recoveries following the troughs in 1954, 1958, 1961, 1970, and 1975.

b. Adjusted for the 1970:IVQ auto strike, which artificially depressed sales in the trough quarter.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts.

paring the gains in the current cycle with the average performance between the fourth and sixth quarters of previous expansions. As can be seen, all of the high-durability components were unusually strong in the first half of 1984, with the 7.3 percent gain for the total (line 2) about 3½ times faster than usual.

To understand the reasons for this unusual strength and assess the implications for the outlook, this *Commentary* analyzes the fundamental determinants of consumer spending on postponable, high-durability goods.

5. See, for example, the Wharton model as reported in Michael D. McCarthy, *Wharton Quarterly Econometric Forecasting Model, Mark III*, University of Pennsylvania, 1972.

6. See, for example, *1977 Consumer Credit Survey*, Federal Reserve Board, December 1978, p. 77 (table 17-7). Analogous data from the 1983 survey are not available. This hypothesis and supporting data were suggested to me by Susan Burch.

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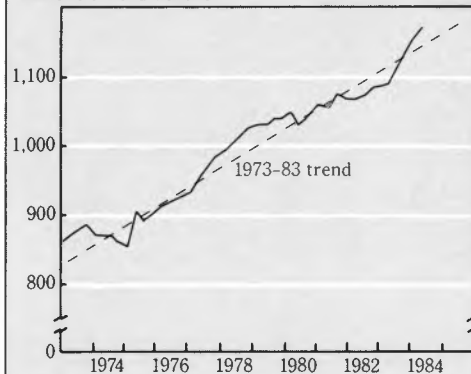
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The views stated herein are those of the author and not necessarily those of the Federal Reserve Bank of Cleveland or of the Board of Governors of the Federal Reserve System.

Chart 2 Real Disposable Income
Billions of 1972 dollars



SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts.

Cyclical Determinants of Durable-Goods Purchases

Income trends. As shown in chart 2, the growth of real disposable income has been extremely strong since early 1983—rising at about a 7 percent annual rate. As a result, real income—which had fallen well below its longer-run trend during the 1981-82 recession—has now climbed well above its trend line.

In addition to the well-established link between longer-run income trends and consumption spending, cyclical movements in income—such as the recent surge—also affect the timing of consumer purchases of high-durability, postponable items. This is reflected, for example, in surveys of consumer attitudes, which show that periods of rapid real income growth are well correlated with high levels of consumer confidence and buying intentions for autos and other big-ticket items. One reason is that rapid income growth, and the drop in unemployment that typically is associated with cyclical income gains, reduces cash-flow constraints for households and improves perceptions of longer-run income prospects.¹ With the likelihood of financial distress lower, consumers are more willing to shift the composition of their portfolios away from liquid financial assets and toward illiquid consumer goods; thus,

1. This argument is based on Frederic Mishkin, "Consumer Sentiment and Spending on Durable Goods," *Brookings Papers on Economic Activity*, 1:1978, pp. 217-31. For an opposing view on this hypothesis, see Ben S. Bernanke, "Permanent

Table 2 Household Financial Positions
Percent of disposable income

	1976-80	1981	1982	1983	1984:1H
Average flow during period					
1. Personal saving	6.1	6.7	6.2	5.0	5.9
2. Financial saving ^a	2.3	4.4	5.1	2.7	3.0
Outstandings, end of period					
3. Financial net worth	149.1	149.2	160.8	168.1	161.5
4. Assets	228.1	228.8	240.3	249.4	243.4
5. Liquid assets ^b	115.3	115.4	118.2	120.1	122.5
6. Liabilities	79.0	79.6	79.5	81.3	81.9
7. Memo: Liquid net worth ^b	39.2	38.6	41.7	42.4	44.2

a. Financial saving equals personal saving minus net investment in owner-occupied housing.
b. Liquid assets equal holdings of deposits and credit market instruments (except corporate equities). Liquid net worth equals liquid assets minus outstanding credit market liabilities.

SOURCE: Board of Governors of the Federal Reserve System, Flow of Funds Accounts.

other things equal, they will tend to increase their purchases of relatively high-durability goods when income is rapidly rising.

If capital markets were perfect—in the sense that households always could borrow against future labor income without penalty—there would be no cash-flow constraints: the consumption plans of households would be constrained only by their expected lifetime resources. Capital markets are not perfect, however, and cash-flow difficulties can affect the timing of household consumption decisions. In particular, rapid cyclical gains in income increase the resources available for down payments, improve the ability of households to meet existing debt repayment obligations, and provide funds to service additional installment credit.

Borrowing costs. The effect of strong income growth on consumer spending was augmented in 1983 and in the first half of 1984 by reduced credit costs. Interest rates on consumer credit peaked in late 1981 and early 1982—with rates on auto loans around 17 percent to 18 percent. But these rates began to fall in mid-1982, and by the spring of 1983 they had declined to the 13 percent to 14 percent range; borrowing costs for new autos generally have remained in this range since. This decline in rates lowered the total interest payment on a 48-month new-car loan by as much as \$1,225—a 30 percent reduction in total financing charges.

Income, Liquidity, and Expenditure on Automobiles: Evidence from Panel Data," *Quarterly Journal of Economics*, vol. XCIX, no. 3 (August 1984), pp. 587-614.

Balance sheets. Income and borrowing costs are not the only factors affecting household consumption decisions. Household balance sheet trends—shown in table 2—also play a role and have been a positive influence on the recent strength of spending. As shown on line 2, during 1981 and 1982 households devoted an unusually large share of their income to the acquisition of financial assets, helping to shore up liquidity positions—line 5. Although the rate of financial saving has come down somewhat over the past year and a half from the 1981-82 pace, it is still above the average of the late 1970s, and the liquid asset ratio remains high. On balance, even though households have been borrowing at a very rapid rate, increasing the debt-income ratio (line 6), liquid net worth positions (line 7) remain quite strong. Thus, consumers find themselves holding a relatively large buffer against hard times, thereby reducing the likelihood of financial distress and increasing the willingness of households to purchase illiquid durable goods.

Determinants of Auto Demand

An important source of consumption growth during the first half of 1984 was the rapid rise in purchases of consumer-use cars and trucks. The expansion of consumer auto and truck sales got off to a comparatively slow start during the first year of the recovery—a 25 percent rise *versus* an average gain of nearly 40 percent. However, demand

strengthened as the recovery moved into its second year, bringing the cumulative expansion during the first six quarters well within the range of previous experience. The strength of consumer purchases of motor vehicles reflected not only the income and balance sheet influences that generally affected spending for all durable goods, but also a number of demand factors specific to the auto market.

Replacement demand. One of the key factors is replacement demand.² The age distribution of the auto stock (chart 3) has shifted dramatically over the past decade. As the operating costs and prices of new cars jumped during the mid-1970s and again during the early 1980s, an increasing number of car owners—faced with *sticker shock*—decided to conserve on the number of miles driven and to hold on to their cars longer. This decline in the scrappage rate of older cars led to a sharp fall-off in replacement demand between 1979 and 1983.

As these older cars wear out, they will have to be replaced; and with so many older cars on the road, the potential replacement needs have become enormous. For example, the percentage of cars more than 10 years old in 1983 was double the figure recorded in 1975. How much of the strength in auto sales during 1984 represents replacement demand? The answer depends not only on the size of the potential replacement pool, but also on scrappage rates for each model year. Data on scrappage rates for 1984 will not be available until the summer of 1985; however, if scrappage for each age group of cars were to remain unchanged between 1983 and 1984, replacement demand would be as much as 7 million units.

Operating costs and vehicle miles.

There are reasons to think that scrappage rates have increased this year. In part, this is because of the strength in real income. However, the suspicion that scrappage rates have increased also is related to recent trends in operating costs and driving demands.

2. See Michael F. Bryan, "Issues in the 1983 Auto-Sales Outlook," *Economic Commentary*, Federal Reserve Bank of Cleveland, March 7, 1983.

As shown in chart 4, the cost per mile of operating a car has dropped nearly 5 percent since 1981, reversing the upward trend evident during the 1970s. The decline in operating costs primarily is a result of the softness in gasoline prices associated with the world oil glut. Reflecting the drop in the cost of operating a car, as well as the strength of overall economic activity, Americans have been driving much more during the past two years. According to data compiled by the Department of Transportation, passenger car travel in the United States is up about 9 percent since the first half of 1982, after showing little change, on balance, during the preceding three years.

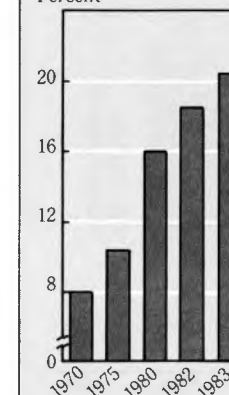
A rise in vehicle miles—a measure of the total demand for automobile services—can be satisfied in two ways: a rise in the intensity with which the current stock of cars is used (which can increase replacement demand), and net additions to the stock. During the current expansion, drivers apparently have been doing both. The average number of miles each car is driven per year has risen considerably since 1981, returning to 9,400 miles—about the level in 1979. But more intensive use shortens the service-life of an automobile. And the more the stock consists of older cars, the greater the likelihood that intensive use will cause these cars to be scrapped sooner. Burch (1983) has estimated that a shift in scrappage rates back to the 1979 pattern—the last time cars were driven about 9,400 miles per year on average—would boost replacement demand to roughly 10 million units.³ Although this figure is well above actual replacement needs in 1984 (because scrappage rates probably have not reverted all the way back to the 1979 pattern), it is indicative of the impact that a rise in scrappage rates could be having on auto demand.

The Demand for Household Equipment

Another important contributor to GNP growth during the first half of 1984 was consumer spending for household equipment—chart 5. Real

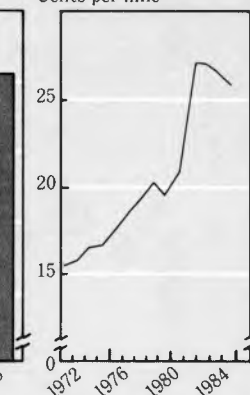
3. The calculations are based on the work reported in Susan W. Burch, "The Aging U.S. Auto Stock: Implications for Demand," *Business Economics*, vol. XVIII, no. 3 (May 1983), pp. 22-26.

Chart 3 Automobiles in Use Older than 10 Years
Percent



SOURCE: Motor Vehicle Manufacturers Association, *Motor Vehicle Facts and Figures '84*, pp. 24 and 43.

Chart 4 Passenger Car Operating Costs
Cents per mile



spending for this component of consumer durables—which in dollar terms is nearly 75 percent larger than outlays for new autos—rose at an 11 percent annual rate in the first half of 1984, following a similar rise in 1983. The recent gains in spending for household equipment were widespread across all major categories and followed a period of considerable weakness during 1980, 1981, and much of 1982. This period of extended sluggish investment in household equipment during the early 1980s probably created a sizable pent-up demand, which consumers attempted to satisfy once borrowing costs fell and household income and net worth positions improved as the recovery progressed.

In addition to the strong demand associated with the previous spending shortfalls, outlays for household equipment also have been buoyed by a strengthening in some of the other factors that determine the desired stock of these goods. One such factor is the number of new households formed during the past year. The household formation rate dropped precipitously from 1.6 million in 1981 to only 400,000 in 1983. Over the past year, the figure has nearly quadrupled—returning to a more typical 1½ million new households.⁴ Furnishing the additional housing units

4. Of course, household formation and real income developments are not independent.