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.9 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 expenditure, the marriage of the "chip" and the "microprocessor" has helped sustain the rapid growth of spending for household equipment.

Some econometric investigations of the demand for household equipment focus on the relationship between spending for household durables and some measure of housing activity. 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.

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 5-7). Analogous data from the 1983 survey are not available. This hypothesis and supporting data were suggested to me by Susan Burch.

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 appliances 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 durables. 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 consumer spending continue to expand and, as the economy moves into the second year of expansion, the long-run growth in consumer outlays should be relatively robust.


Table 1 Cyclical Comparison of Consumer Spending

<table>
<thead>
<tr>
<th>Category</th>
<th>Trough to t + 6</th>
<th>Trough to t + 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average current recovery</td>
<td>Average</td>
<td>Current</td>
</tr>
<tr>
<td>Total PCE</td>
<td>6.1</td>
<td>6.7</td>
</tr>
<tr>
<td>High-durability goods</td>
<td>14.5</td>
<td>19.9</td>
</tr>
<tr>
<td>Cars and trucks</td>
<td>34.0</td>
<td>34.4</td>
</tr>
<tr>
<td>Household durables</td>
<td>12.1</td>
<td>19.4</td>
</tr>
<tr>
<td>Other consumer durables</td>
<td>15.3</td>
<td>15.8</td>
</tr>
<tr>
<td>Clothing and shoes</td>
<td>7.9</td>
<td>16.1</td>
</tr>
<tr>
<td>Low-durability goods</td>
<td>6.3</td>
<td>6.3</td>
</tr>
</tbody>
</table>


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.

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.
Cyclical Determinants of Durable-Goods Purchases

**Income trends.** As shown in chart 2, the growth of real disposable income has been extremely strong with a 7 percent annual rate. As a result, real income—which had fallen below its longer run trend during the 1981-82 recession—has now climbed well above its trend line. Poverty rates have declined steadily as 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 consumer goods.

**Balance sheets.** Bank and borrowing costs were the not only factors affecting household consumption decisions. Households balance-sheet trends—shown in table 2—also play a role and have been a positive influence on the strength of spending. As shown on line 2, during 1981 and 1982 households reduced their 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 years, and in the 1981-82 period 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, the liquid asset ratio remains high.

**Borrowing costs.** The effect of strong income growth on consumer spending was augmented in 1983 and in the first half of 1984 by relatively low credit costs. Costs 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.

**Determ inants of Auto Demand**

There are reasons to think that the pace of growth of car sales has been the driving force behind the strength of real income. However, the suspicion that the car sales numbers are too high is not yet resolved. We have not yet seen recent trends in operating costs and driving demands.

**The Demand for Household Equipment**

Another important contributor to GNP growth during the first half of 1984 was consumers' spending on household equipment—chart 5. This spending for this component of consumer durables—which in dollar terms for the first half of 1984 was over 7 percent lower than for the first half of 1983. Over 75 percent of the decline was owing to new autos—but 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 spread among all major categories and followed a period of considerable weakness during 1981, 1982, and much of 1983. This period of extended sluggish investment in household equipment during the early 1980s probably has 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 present pent-up demand, recent trends in consumer durables for 1983 also have been buoyed by a strong aging in several of the 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 to a very low level in 1981 to only 400,000 new families. By the past year, the figure has near equity levels, returning to a more typical 1% mill new households. Furnishing the additional housing units


4. Of course, household formation and real income developments are not independent.
Cyclical Determinants of Durable-Goods Purchases

Income trends. As shown in chart 2, the growth of real disposable income has been extremely strong with real disposable income growing at a 7 percent annual rate. As a result, real income—which had fallen well below its long-run trend during the 1981-82 recession—has now climbed well above its trend line. Indeed, 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-duration consumer durable goods. 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 rising real income and constraints in unemployment that typically is associated with cyclical income gains also lower the constraints for households and improves perceptions of longer-run income prospects. As a result, financially distressed lower, consumers are more willing to shift the composition of their portfolios away from liquid financial assets and toward illiquid consumer goods; thus, other things equal, they will tend to increase their purchases of relatively high-duration goods when income is rapidly rising.

If capital markets were perfect—in the sense that households always would borrow at the current (and 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 gains 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 availability of liquid assets and reduce the ability of households to meet existing debt repayment obligations on their auto loans. Borrowing costs. The effect of strong income growth on consumer spending was augmented in 1983 and in the first half of 1984 by reduced borrowing costs of consumer credit. In particular, 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 1984, they had declined to about 13 percent to 14 percent; 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 30 percent, a reduction in total financing charges.

Balance sheets. Income and borrowing costs are not the only factors affecting household consumption decisions. Household balance sheets—shown in table 2—also play a role and have been a positive factor in the rise of strength of spending. As shown on line 2, during 1981 and 1982 household holdings of 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 assets of households remain high. On balance, even though households have been borrowing at a very rapid rate (line 6), net liquid wealth positions (line 7) remain quite strong. This, of course, means that 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

Higher incomes, lower borrowing costs, and stronger balance sheets have increased auto demand by a variety of factors. In particular, rapid growth in disposable income 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 5 percent rise versus an annual gain of nearly 40 percent. However, demand strengthened as the recovery moved into its second year, bringing the cumulative expansion during the first half of 1985 to 15 percent, 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 on durable goods, but also a number of demand factors specific to the auto market.

Replacement demand. One of the key factors is replacement demand. The age distribution of the auto stock (table 3) has shifted dramatically over the past decade. As the operating costs and prices of new autos dropped with the mid-1970s and again during the early 1980s, an increasing number of car owners—faced with sticker shock—decided to consider the number of miles driven and to hold on to their cars longer than ever. This decline in the scrappage rate of older cars led to a sharp fall-off in replacement demand. 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 number of cars more than 10 years old in 1983 was double the figure recorded in 1975. How much of the sharp rise in demand during 1984 represents replacement demand? The answer depends not only on the size of the average replacement pool, but also on replacement rates for each model year. Data on replacement rates for 1984 will not be available until the summer of 1985; however, if scrappage for each age category in 1984 is unchanged from 1983 and replacement demand would be as much as 7 million units.

Operating costs and vehicle miles. There are reasons to think that scrappage of older cars is very low. In fact, this is because of the strength in real income. However, the suspicion that scarpage rates have been revised upward has led to recent trends in operating costs and driving demands.

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, the United States is up about 9 percent since the first half of 1982, after showing little change during much of the previous two 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 of cars, or additions to the ownership, drivers apparently have been doing both. The average number of miles driven by all cars has risen considerably since 1981, returning to 9,400 miles—about the level of the early 1970s. But this use shortens the service-life of an automobile. And the more the stock of old cars grows, the less likely that intensive use will cause these cars to be scrapped so soon, thus reducing the likelihood that a shift in scrappage rates back to the 1979 pattern—the last time new autos were driven about 9,400 miles per year on average—would boost replacement demand to roughly 10 million units. The same type of question also is relevant. 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, the United States is up about 9 percent since the first half of 1982, after showing little change during much of the previous two years.

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**Conclusion**

The surge in spending for postponable, high-durability 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—such as employment and real income growth—should be relatively robust.