

Expanding the Nation's Productive Capacity

“Expanding the Nation's Productive Capacity” [1] applies Solow's growth accounting to the United States for the period 1963-1994.

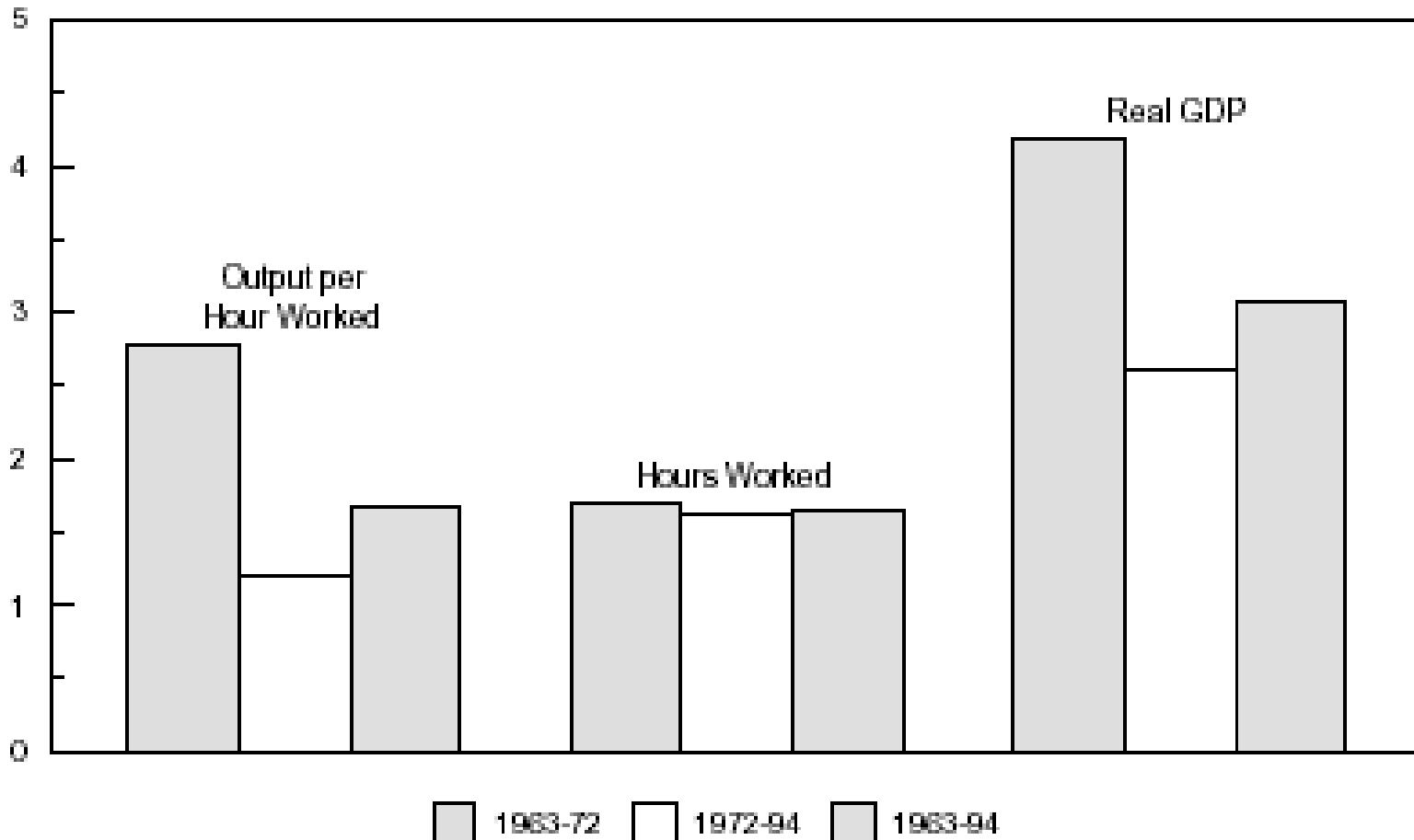
The puzzle is to explain the decline in productivity growth (output per hour worked) during this period.

The slow growth in productivity caused the growth rate of real GDP to decline.

Chart 3-2 Factors Generating Growth of Gross Domestic Product

Since 1972, real GDP has increased more slowly than before, owing to a reduction in the rate of growth of output per hour worked.

Average annual percent change



Note: Estimates of growth in output and output per hour are based on chain-weighted measures. Data on output per hour and hours worked pertain to the private nonfarm business sector, whereas the data on GDP pertain to the whole economy.

Sources: Council of Economic Advisers, Department of Commerce, and Department of Labor.

Capital Accumulation

Business saving (retained earnings) is the major component of saving and has been roughly constant at about 12% of GDP.

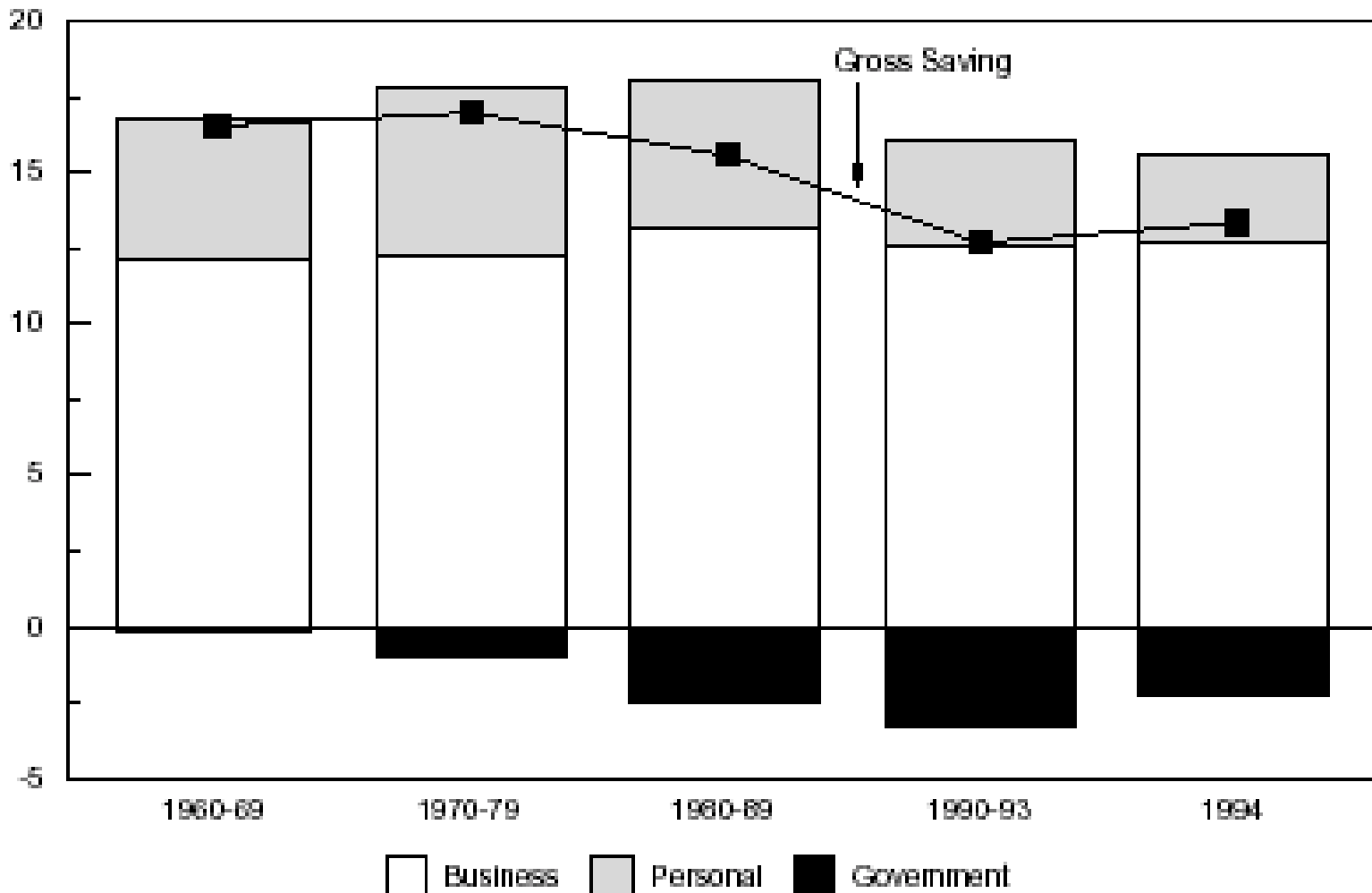
Household saving is much smaller than business saving.

During the 1990s it declined as a percentage of GDP. (In the late 1990s, the stock boom caused household saving to become negative.)

Chart 3-11 Components of Gross Saving

Gross saving has declined since the 1970s, partly because the personal saving rate has declined and partly because the public sector has run much larger deficits.

Percent of GDP



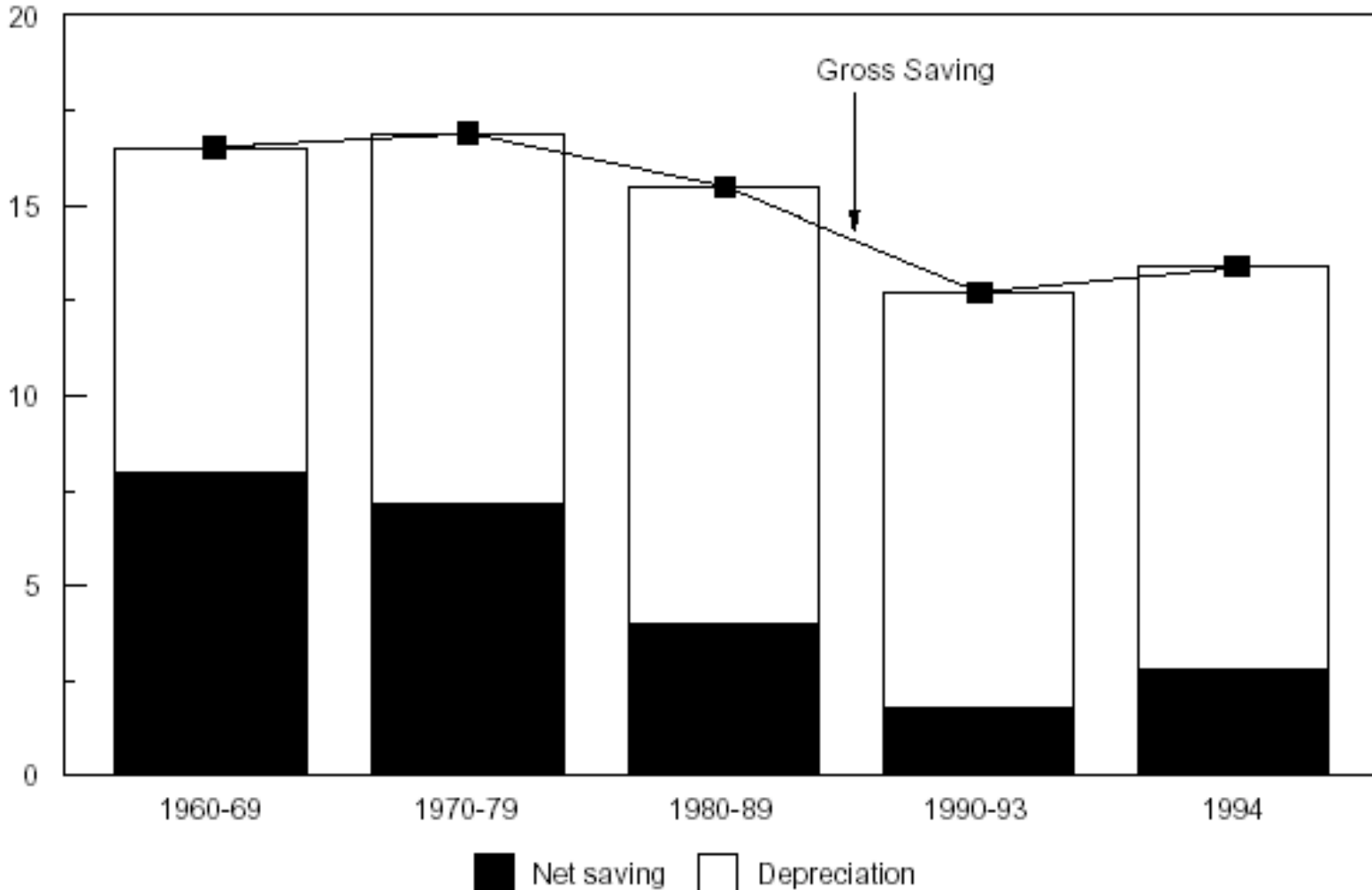
Note: Data are calculated on a fiscal year basis.
Source: Department of Commerce.

Overall gross saving declined as a percentage of GDP, and net saving fell even more, as depreciation increased.

Chart 3-12 Gross Saving, Depreciation, and Net Saving

Since the 1960s, net saving has fallen more sharply than gross saving, in part because of a shift in investment toward more rapidly depreciating equipment.

Percent of GDP



Note: Data are calculated on a fiscal year basis.
Source: Department of Commerce.

Labor Input

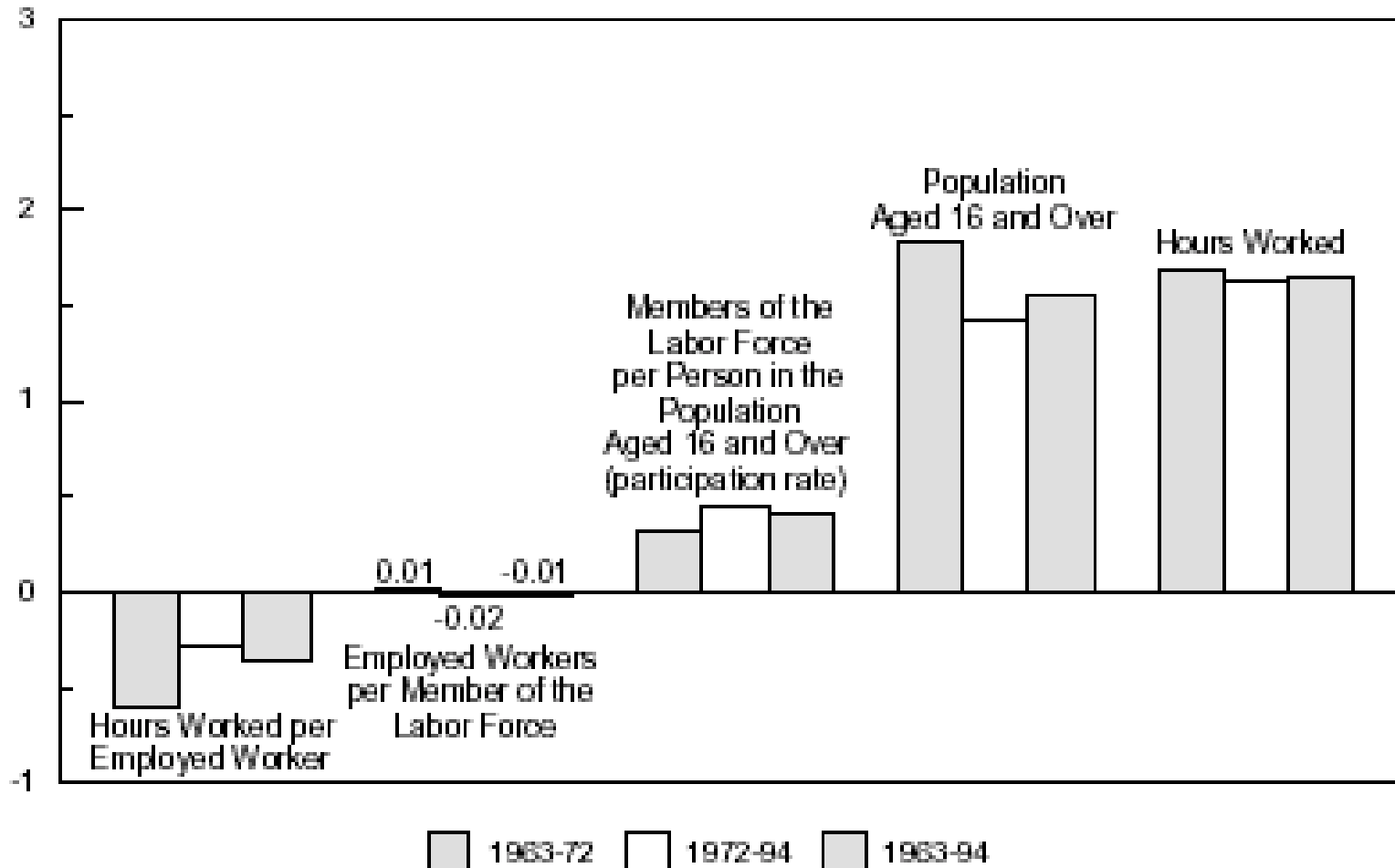
Chart 3-2 shows that hours worked grew at a moderate but steady pace.

The growth of the population accounted for this increase (chart 3-8).

Chart 3-8 Factors Generating Growth of Hours Worked

Overwhelmingly, the increase in aggregate hours worked since 1963 reflects the increase in the working-age population.

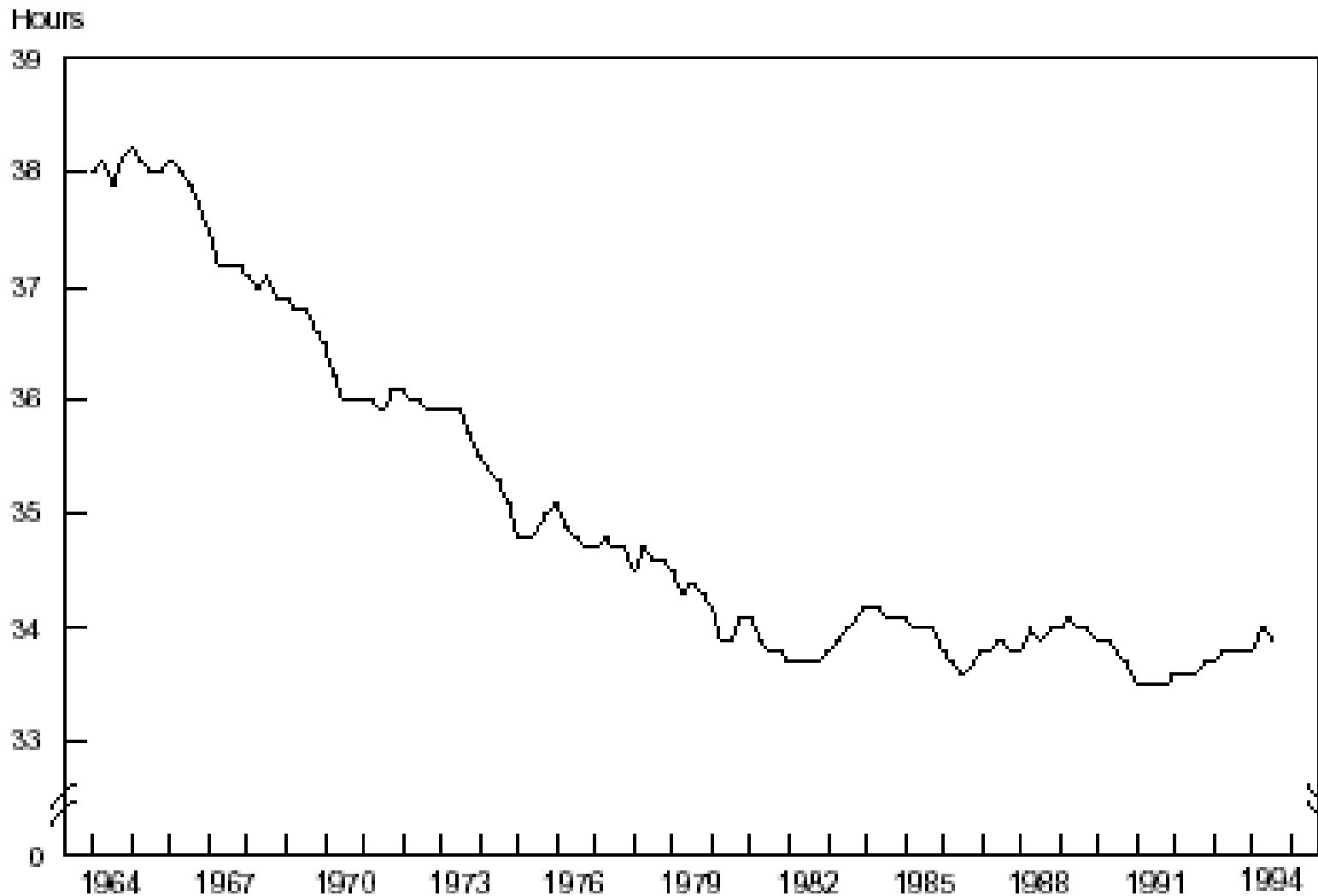
Average annual percent change



Note: Data on hours worked, total and per worker, pertain to the private nonfarm business sector, whereas data on the employment rate, participation rate, and population pertain to the whole economy.
Sources: Council of Economic Advisers and Department of Labor.

Average weekly hours per worker fell considerably, especially from 1960-1980.

Chart 3-9 Average Weekly Hours in the Nonfarm Business Sector
 The length of the average workweek trended downward from the early 1960s until the early 1980s. Since then it has been about flat.

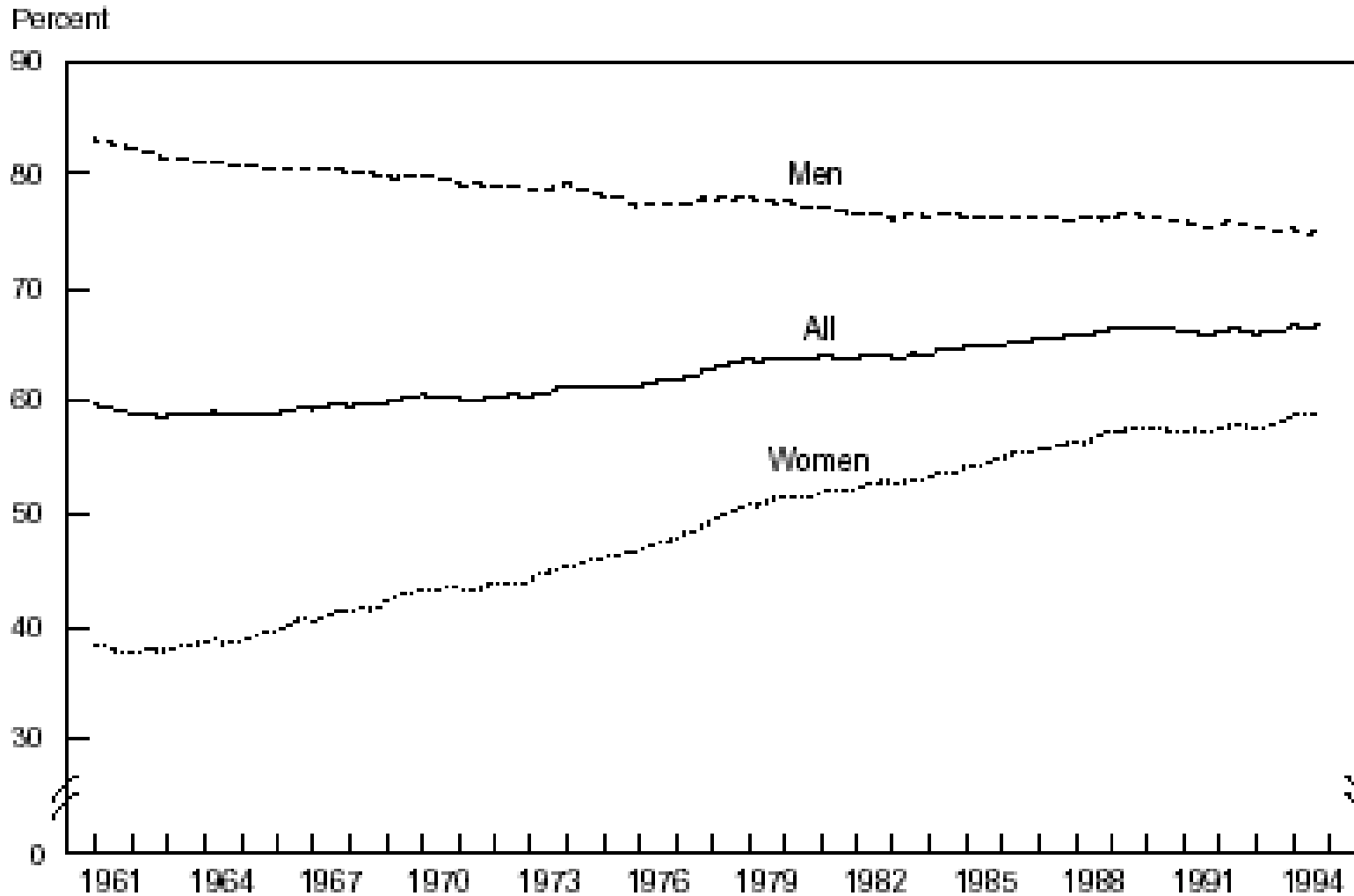


Source: Department of Labor, unpublished data.

Labor Force Participation Rate

Overall the labor force participation rate has increased—a higher fraction of adults is working. The participation rate for women has increased significantly, whereas the participation rate for men has fallen somewhat.

Chart 3-10 Civilian Labor Force Participation Rates for Men and Women
 The participation rates of men and women have converged over the past three decades.



Note: Data for 1994 come from the redesigned Current Population Survey.
 Source: Department of Labor.

Measured Technical Change

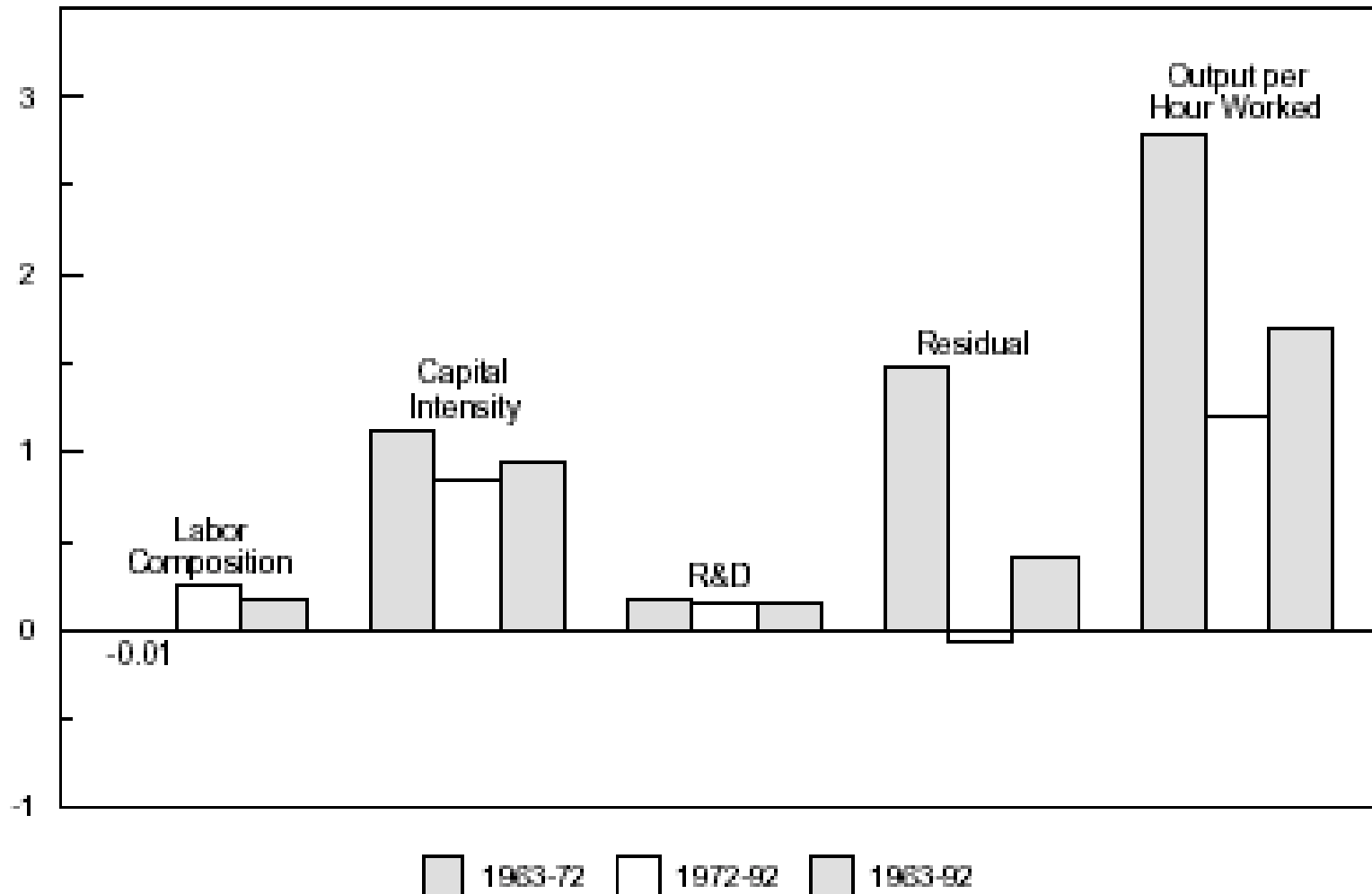
Chart 3-5 shows the Solow growth accounting.

For 1963-1972 the capital/labor ratio increased significantly and the Solow residual was positive, raising productivity 1.6% per year on average. Together these two effects raised productivity by 2.9% per year.

For 1972-1992, in contrast the Solow residual was approximately zero. The capital/labor ratio kept increasing, but the lack of technical change caused productivity to grow much less than in the earlier period. The lack of productivity growth was associated with a lack of growth in real wages.

Chart 3-5 Factors Generating Growth of Output per Hour
 Most of the slowdown in productivity growth after 1972 reflects a deceleration of the so-called residual factor.

Average annual percent change



Note: Data are based on chain-weighted measures and pertain to the private nonfarm business sector.
 Source: Department of Labor.

Puzzle

Since many technical advances did occur during the later period, it is a puzzle why the measured rate of technical change was zero.

References

- [1] United States President. *Economic Report of the President*, chapter 3, Expanding the Nation's Productive Capacity, pages 95–127. United States Government Printing Office, Washington, DC, 1995. J85PR42.9:1995.