



Estimating household consumption expenditures in the United States
using the Interview and Diary portions of the 1980, 1990, and 1997
Consumer Expenditure Surveys

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The DEMPATEM working papers are available online as PDF-files at <http://www.uva-aias.net/lower.asp?id=186>; exceptionally paper copies will be made available on request (see address below). The DEMPATEM working papers are intended to make the results of the DEMPATEM-research available to all persons interested. They aim to stimulate discussion. Comments are welcome.

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ABSTRACT

This paper summarizes household-expenditure patterns in the United States based on the 1980, 1990, and 1997 Consumer Expenditure Surveys (CEX). The CEX data used in the analysis have been organized to make them as comparable as possible to data extracted from corresponding expenditure surveys in France, Germany, the Netherlands, Spain, and the United Kingdom. The paper first discusses the structure and some of the relevant limitations of the CEX survey; next provides a description of the procedures used to make the data compatible with other national expenditure surveys; and, finally, reviews some of the expenditure patterns in the resulting data. The paper is part of a broader international project ("Demand Patterns and Employment Growth" or DEMPATEM), which seeks to analyse the impact of international differences in the consumption of services on national employment outcomes.

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INTRODUCTION

This paper summarizes household-expenditure patterns in the United States based on the 1980, 1990, and 1997 Consumer Expenditure Surveys (CEX). The paper is part of a broader effort to produce a joint analysis of comparable data sets constructed for corresponding years for France, Germany, the Netherlands, Spain, and the United Kingdom.¹ The principal goal of the multi-country project is to use the resulting compatible national data sets to study the relationship between national household-consumption and employment patterns.

The paper proceeds as follows. The next section describes the structure of the CEX survey, highlighting both the complexity of the survey design and several important limitations of the data. The third section proposes specific procedures for addressing most of the limitations of the CEX data. The final section reviews the resulting patterns of household consumption of goods and services, with attention to some remaining limitations of the data.

¹ See Blow (2003), Gardes and Starzec (2003), Kalwij and Salverda (2003), Luengo-Prado and Ruiz -Castillo (2003), and van Deelen and Schettkat (2003).

I STRUCTURE AND LIMITATIONS OF THE CEX

The CEX is a relatively small, but detailed, survey of the expenditure patterns of US households. The principal purpose of the survey is to gather household-expenditure information for use in connection with the maintenance of the official Consumer Price Index. The CEX has two separate components, each with its own questionnaire and –in the present context, most importantly– its own independent sample. The first of the two components is the Interview portion, in which households participate for five consecutive quarters in a detailed interview that covers up to 95% of their total expenditures in the preceding three-month period. The second component of the CEX is the Diary portion, in which households keep a Diary of almost all expenditures made over two, consecutive one -week periods.

I.1 STRUCTURE OF THE INTERVIEW PORTION

The Interview portion of the CEX is a rotating panel of about 5,000 households, with new panels beginning every month. Each participating household completes five consecutive quarterly interviews (a small share does not complete all five interviews). The first of these interviews collects household-member information including age, sex, race, marital status, education, relationship to the household "reference person," and other characteristics. This first interview also conducts an inventory of household consumer durables. The initial interview does not collect information on household expenditures; the second through fifth interviews do collect information on household expenditures over the preceding three months. The second and the fifth interviews also ask households detailed questions about their annual income. The fifth interview (but not the second) also gathers information on annual household spending on occupation-related expenditures (including union dues), cash contributions (such as to charities), and some financial services; none of the earlier interviews gather information on these types of expenditures.²

The questionnaire for the Interview portion of the survey is designed to capture expenditures on major items. The Bureau of Labor Statistics (BLS) estimates that the expenditures collected

² Following standard Bureau of Labor Statistics practice, the final data set created here retains only those households with "complete" income reporting. The "main sample" in subsequent tables uses only those households that participated in at least two quarterly interviews between the first quarter of 1997 and the first quarter of 1998. To obtain annual expenditure figures for those households with fewer than four completed interviews, I multiply all expenditures by two, for households with two completed quarters, and by 4/3, for households with three completed quarters.

in the Interview portion typically cover 80-95% of total household expenditures. The Interview questionnaire collects fairly detailed information on 60-70% of total expenditures and less-detailed information on an additional 20-25% of total expenditures, including food (again, all percentages are BLS estimates). The Interview portion, however, does not collect any data on housekeeping supplies, personal care products, or non-prescription drugs, which typically amount to 5-15% of household expenditures.³

1.2 STRUCTURE OF THE DIARY PORTION

The Diary portion of the survey has a much smaller sample than does the Interview portion, with a quarterly sample of only about 1,500 households. Each participating household answers an initial questionnaire on householder characteristics and income and then keeps track of daily expenditures for two consecutive one -week periods in a specially designed diary.

The diary is designed to collect detailed expenditure data on small, frequently purchased items. In principle, households should record all expenditures, but particular attention is paid to items such as food, drinks, food away from home, gasoline, housekeeping supplies, non-prescription drugs, medical supplies, and personal care goods and services. In this respect, the Diary portion complements several gaps in the coverage of the Interview portion of the survey.⁴

1.3 SUMMARY OF THE MAIN LIMITATIONS

1.3.1 LIMITATIONS OF THE CEX

The structure of the CEX's two principal components, the Interview and the Diary portions, poses several challenges in the present context. The most important of these is the lack of complete coverage of household expenditures. By design, the Interview portion of the survey excludes 5-15% of total expenditures; and, in practice, the two weeks of records comprising the Diary portion of the survey is a poor instrument for capturing larger, less frequently made expenditures, especially given the small sample size of the Diary portion. (If the same households participated in both the Interview and Diary portions of the survey, the CEX would provide complete coverage of household expenditures. Unfortunately, as mentioned above, the samples for the two portions of the survey do not overlap.)

³ For a detailed discussion of the CEX Interview survey, see US DOL, BLS, 1999b.

⁴ For a detailed discussion of the CEX Diary survey, see US DOL, BLS, 1999a.

In addition to coverage, the structure of the Interview portion creates several other problems for the present analysis. First, while the interview portion does collect information on combined expenditures on food and drink, the Interview questionnaire does not separate expenditures on food from those on drink. Second, only households participating in the fifth interview provide expenditures on occupation-related expenses, cash contributions, and some financial services. Since not all households interviewed in a given year actually completed a fifth interview in that year (or during the first quarter of the following year), these households will not have information on these expenditures. A third problem is that the 1980 version of the CEX does not contain information on the rental equivalence of owner-occupied housing.

A final limitation of both the Interview and the Diary portions of the survey, for some purposes at least, is that the BLS has imputed values for some expenditure categories (and for some household characteristics) for some households. While the imputation procedure almost certainly improves the accuracy of tabulated expenditure estimates, the procedure can create problems when the intention is to use household microdata to *model* expenditures. When imputed expenditures are mixed with actual expenditures, the best the modelling process can hope to do is to recover a combination of the true data generating process and the imputation procedure used by the BLS.

1.3.2 INSTITUTIONAL LIMITATIONS

In addition to the difficulties posed by the structure and design of the CEX itself, several institutional features of the US economy make it difficult to use a household expenditure survey to capture total household consumption. One major difficulty is capturing public expenditures on health and education. The CEX records only private expenditures on health and education, thereby missing consumption of a large portion of total consumption of these services. The inability to capture public expenditures in these areas may be particularly problematic in the context of international comparisons, such as those that are the main focus of the DEMPATEM project. (I'll return to this issue below when we review the expenditure data for the three years.) A second significant institutional difficulty concerns the allocation of private expenses between households and their employers. In the United States, employers frequently pay some or all of their employees' health insurance premiums. Many employees do not know the actual value of the employer contribution and, in any event, the CEX does not record these expenditures either as income or household health expenditures. As a result, the institutional

arrangements for covering health insurance further reduce the portion of total health expenditures captured by the CEX.⁵

⁵ Pension contributions also suffer from both these problems. An important share of total pension contributions is public (Social Security); and, a significant share of private pension contributions is paid directly by employers (either through defined-benefit or defined-contribution plans). Since the main focus of the DEMPATEM project is on consumption (not savings), this paper does not take up the pension issue in what follows. The failure to take into account international differences in the institutional channels for private savings, however, may mean overlooking important differences in public and private savings mechanisms that may contribute to international differences in employment in financial services.

2 COMPENSATING FOR CEX LIMITATIONS

This section of the paper proposes specific solutions to most of the limitations of the Interview and Diary portions of the CEX described above. The basic strategy is to fill in the holes in the Interview-survey data using a series of imputation procedures. The first set of imputations uses the information from households with a fifth interview –and therefore with data on occupational expenses, cash contributions, and other financial services– to impute expenditures in these areas for those households without a fifth interview in 1997. The second set of imputations uses data from the Diary portion of the survey to impute expenditures for Interview participants on food and drink (separately), some personal goods, and postage and delivery services. A final imputation procedure attempts to create a consistent alternative to the BLS's rental-equivalence estimate for owner-occupied housing, which is missing in 1980. This last procedure imputes rental equivalences using each household's housing-stock characteristics.

2.1 IMPUTATIONS BASED ON FIFTH-INTERVIEW INFORMATION

Households participating in the Interview portion of the CEX provide information on annual occupational expenses, charitable contributions, and some other financial services only in their fifth interview. Since some of the Interview sample used here did not participate in a fifth interview between the first quarter of relevant survey year (1980, 1990, or 1997) and the first quarter of the following year, these households do not have expenditure data for these three categories. To sidestep this problem, the final version of the data set created here uses households with a fifth interview to impute expenditures in these three areas for those households without a fifth interview.

In the case of all three types of expenditures collected only in the fifth interview, the specific approach is to begin by using the fifth-interview households to fit an expenditure equation and, then, to use the parameter estimates from this equation to estimate expenditures for those households without a fifth interview. In the case of occupational expenditures, for example, the first step is to calculate the share of occupational expenditures in total expenditure for each fifth-interview household. The second step is to use ordinary least squares regression to estimate this share as a function of household-expenditure quintile (four indicator variables), total household income quintile (four indicator variables), family type (eight separate indicator variables), family size, number of children, number of senior citizens, and the age group and

employment status of the household's "reference person." All of the regressors in this occupational expenditure share equation are in all of the second through fifth interviews. The third step is to use the parameter estimates from the preceding equation to estimate the occupational expenditure share for households without a fifth interview. The final step is to estimate actual household expenditures on occupation-related consumption, in dollars, by multiplying the estimated expenditure share by total household expenditures. The same basic procedure produces imputed expenditure values for charitable contributions and "other financial services." (The exact procedure, written as a Stata do-file, is available by request.)

2.2 IMPUTATIONS BASED ON DIARY INFORMATION

As mentioned above, the Interview portion of the survey does not distinguish between spending on food and drink, and excludes all expenditures on several personal and household goods and services. The second imputation procedure uses complete data from the Diary portion of the survey on these undifferentiated and excluded expenditures to impute values for households in the Interview survey.

The exact procedure is almost identical to the one used in connection with the fifth-interview surveys. Data from the Diary households is used to fit expenditure share equations; the parameter estimates from these equations are used to estimate expenditure shares in the Interview households; these estimated shares are then used to estimate actual dollar expenditures. (The exact procedure, written as a Stata do-file, is available by request.)

2.3 IMPUTATIONS BASED ON HOUSING CHARACTERISTICS

Given the lack of data for 1980 on the rental value of owner-occupied housing, the dataset constructed here also includes regression-based imputations of rental equivalence. The approach taken here differs conceptually from the CEX's rental-equivalence variable for 1990 and 1997, which is based on the owner's estimate of the rental value. Here, I impute the rental equivalence by estimating the relationship between the actual rent paid by renters and the characteristics of their housing; then, I use these parameter estimates from renters to impute the rental value of comparable owner-occupied housing. The basic OLS regression estimates quarterly rent as a function of the number of rooms (and its square); the number of bedrooms (and its square); the type of building (10 categorical variables); whether the housing is new, has a tennis court, off-street parking, or central air-conditioning; the geographical region; and the size of the town or city in which the housing is located. (The exact procedure, written as a Stata do-

file, is available by request.) The next section of the paper includes a comparison of the results of this procedure with actual reported housing expenditures and the BLS imputation.

3 CONSUMPTION PATTERNS

3.1 "COMPLETE" DEMPATEM CATEGORIES

Table I reports average annual household expenditure shares for 1980, 1990, and 1997 using the Interview data with all the imputations proposed in the preceding section.⁶ The rows in the table are a set of expenditure categories designed by the DEMPATEM project to function as a nearly consistent basis for comparison across Germany, France, the Netherlands, Spain, the United Kingdom, and the United States.⁷ Wherever possible, the table distinguishes between durable and nondurable expenditures in the same category. For example, in 1997, the average annual household expenditure on audio-visual equipment and musical instruments (6b) was 0.9% of total expenditures, of which about 0.7% were for durable goods (stereo systems, musical instruments, and other), with the rest spent on nondurables (records, tapes, and other). The last column of the table shows the percentage -point change in expenditures over the 1980-97 period. Most of the categories show only small changes over time. The main exceptions are: (1) food and non-alcoholic beverages (down 3.9 percentage points); (4) private transport goods (down 2.6 percentage points, mostly because of large declines in fuel expenditures); and (11) housing services (up 5.8 percentage points).⁸

Table 2 shows the share of households that report either zero expenditures or negative expenditures in each category. Households may record zero expenditures in a category because of tastes (non-smokers and non-drinkers will show no expenditures for category 2 alcoholic beverages and tobacco) or because the nature of certain goods makes purchases of them relatively infrequent (category 10 holiday services, for example). A high share of zeros and the reason for the high share of zeros may have important implications for our subsequent econometric estimation of consumption relationships. Table 2 also lists the share of households in each expenditure category that made negative expenditures (usually insurance reimbursements for health expenditures).

⁶ Certain types of expenditures may vary systematically over the business cycle. The unemployment rate in the three years examined here were: 1980: 7.1%; 1990: 5.6%; and 1997: 4.9%.

⁷ Stata do-files that allocate six-digit expenditure categories from the CEX public-use microdata sample to the "complete" and "restricted" DEMPATEM categories are available upon request.

⁸ Appendix Tables A, B, and C provide information on average household size; the distribution of household income and expenditures; and inequality across households for several expenditure categories.

3.2 EXCLUDING SOME TYPES OF EXPENDITURES

Table 1 provides a nearly complete summary of annual household expenditures, but is unsatisfactory for several reasons. First, the table reports *expenditures* rather than *consumption* in each category. The distinction can be important for categories that involve significant expenditures for household durables, which provide consumption beyond the one-year period examined here. Where durables make up an important portion of expenditures, the expenditure data in Table 1 will overstate consumption for households that purchased durables in the period and understate consumption for those households that did not buy but already owned the same durables. A second problem with the expenditure categories in Table 1 is that they include housing, health, and education expenditures, which are particularly difficult to compare internationally, because of substantial differences in the role of the public sector in the provision of these services. As a result of both of these problems, the US data will undergo one last set of modifications for the DEMPATEM project. These modifications involve excluding from the analysis expenditures on consumer durables, as well as those on health, education, and housing services. Before producing a modified version of Table 1 that implements these changes, the rest of this subsection reviews the "complete" data and relevant outside information in an effort to justify these significant exclusions from the final, "restricted" data set.

3.2.1 CONSUMER DURABLES

Table 3 shows household ownership rates, by year, for most major consumer durables.⁹ By 1997, some durables had close to complete market saturation (refrigerators and colour televisions); others were still relatively uncommon (freezers and computers). A comparison of ownership rates of particular durables from Table 3 with the data from the CEX (not shown) demonstrates that many households owned consumer durables in 1997 for which they made no direct expenditure in that year. For example, according to the CEX data, about 77% of households made no expenditures on "vehicles" in 1997, but according to Table 3, 73% of households owned a car in 1997.

3.2.2 HOUSING

Housing is a tricky category for two reasons. Housing is both a durable that provides a flow of services over a long period, and the provision of housing services is, in many countries, subject to significant public intervention.

⁹ Households may either own or rent the durable, but the vast majority own.

The last three columns of **Table 4** shows the home ownership rates, by year, for different household types that will be of interest in our subsequent analysis of the data. (Appendix Tables E and F show the corresponding weighted share and underlying sample size for each of the household types in Table 4.) In all three years, 63-65% of households owned the house in which they lived. Home ownership rates, however, varied widely across household types: in 1997, from about 15% for nonworking single parents with children to over 90% for retired couples.

Table 5 presents various estimates of housing consumption, in 1997 dollars, for all (columns one and two), owner-occupied (columns three and four), and renting households (columns five and six). As in Table 1, Table 5 divides housing expenditure into three areas: (I Ia) rent plus service charges (such as trash collection); (I Ib) rental equivalent for owner-occupied housing; and (I Ic) housing repairs, maintenance, and insurance. For each of the three household tenure groupings, the table provides two estimates of housing consumption. The first, labelled "owner," uses owners' estimation of the rental value of their owner-occupied properties to estimate the consumption value of their current housing. The second, labelled "regression," uses the reported characteristics of owner-occupied housing to impute housing consumption employing a simple regression based on actual rents paid for comparable, rented accommodation. For 1990 and 1997, the self-reported rental equivalence of owner-occupied housing is substantially higher than the rental equivalence imputed using the regression technique (\$8,755 for self-reporters compared to \$5,226 by regression estimate, in 1990; \$9,764 for self-reporters compared to \$6,309 by regression, in 1997). Unfortunately, the CEX does not report owners' estimates of the rental equivalence of their housing before 1982. For consistency's sake, the expenditure data in Table 1 use the regression-based imputation, which, however, may underestimate the true value of owner-occupied housing.¹⁰

Public housing and housing subsidies are another impediment to valuing housing services accurately. The CEX survey does not collect information on the value of public housing services (other than the actual rent paid, which is presumably less than the market value of the corresponding services) or on direct housing subsidies. For analysis restricted to the United States, these exclusions probably don't have a large impact on understanding consumption patterns because the available evidence suggests that *direct* government expenditures and subsidies do not play a large role in the provision of housing services. Few US households live in

¹⁰ The Spearman rank correlation between the owner-reported and the regression-estimated rental equivalent is 0.601 for 1990 and 0.752 for 1997.

public housing or receive direct housing subsidies¹¹ and the size of public expenditures on housing, based on the National Income and Product Accounts (NIPA) for the United States in 1997, was small. As **Table 6** demonstrates, in 1997, government subsidies were just \$19 billion (10⁹) (about 0.2% of GDP), compared to total personal consumption on housing of \$811 billion.¹²

At the same time, *indirect* public subsidies to the housing sector are large and may considerably alter the budget constraints and true expenditure patterns of owner-occupied households, particularly those that pay mortgage interest. The US Office of Management and Budget, for example, has estimated that the deductibility of mortgage interest on owner-occupied housing reduced federal income-tax receipts in 2000 by about \$60 billion; the deductibility of state and local property taxes on owner-occupied houses cost the federal government an additional \$26 billion; and the exclusion from taxation of most capital gains on home sales, another \$20 billion.

¹³ Taken together, these tax-breaks summed to about 1.1 percentage points of GDP in 2000.¹⁴

3.2.3 HEALTH

Divisions between public and private provision of health services will have a potentially large impact on international comparisons of private household expenditures. Table 7 shows expenditures on health care in the United States in 1997, using data from the US government's Health Care Financing Administration. Of the \$1.1 trillion (1012) total national expenditures on health in 1997, \$590 billion, or just over half (54%) were private expenditures.¹⁵ For comparison's sake, Table 8 reports data from the Organization for Economic Cooperation and Development (OECD) on total, public, and private health care expenditures as a share of GDP for 20 advanced economies in 1998. The last column of the table shows that in the United

¹¹ CEX data for 1997, for example, show that only a small fraction of owner-occupied households received a direct government housing subsidy. Among renters, about 6% received some form of housing subsidy and about 3% lived in public housing (with some overlap between these two states). As we shall see below, however, indirect subsidies in the form of tax breaks for mortgage interest are large.

¹² These figures may slightly understate direct public spending on housing. The 1997 US federal budget, for example, allocated more than the \$19 billion (about \$27.5 billion) to the Department of Housing and Urban Development (HUD) alone. In the same year, the federal budget also allocated about \$4 billion to family housing of military personnel. See US Census Bureau, Statistical Abstract of the United States 1999, Tables 547 (HUD), Table 548 (military personnel), <http://www.census.gov/prod/99pubs/99statab/sec10.pdf>. The inclusion of these and other small federal, state, and local housing expenditures, however, would probably not significantly alter the conclusion that public expenditures on housing services represent only a tiny share of national housing expenditures.

¹³ US Census Bureau, Statistical Abstract of the United States 2000, Table 464, <http://www.census.gov/prod/2001pubs/statab/sec10.pdf>.

¹⁴ I have not been able to find comparable international data that break down total national housing expenditure by public and private origin. I suspect, however, that even including tax-related subsidies, public expenditures on housing in the United States are small compared to the rest of the OECD.

¹⁵ Medicare (publicly financed health care for the elderly) and Medicaid (publicly financed health care for the poor) accounted for most of the 46% or so of total health care expenditures made by the public sector.

States private expenditures represented over half (55%) of health care spending in 1998, compared to only 10-33% of the total in the other major OECD economies.¹⁶

3.2.4 EDUCATION

Education is a final area where extensive public provision of services may complicate international comparisons of private expenditures. **Table 9** shows expenditures on education in the United States in 1997, by level of education and public or private sector. As panel (c) demonstrates, about 80% of all education expenditures in the United States in 1997 were made in the public sector. The vast majority of spending on elementary- and secondary-school education in the United States is public: \$334 billion in the public sector compared to \$27 billion in the private sector. The importance of the private sector is somewhat greater at the post-secondary level: with \$88 billion spent by private colleges and universities, compared to \$147 billion by public colleges and universities.

The impact of international differences in public spending for educational services on cross-country comparisons of service consumption, however, is probably not as large as is the case for health care. The public share of education expenditures in the United States is much closer to levels in the rest of the OECD. According to the data in **Table 10**, public spending accounted for about 75% of US education expenditures in 1998, which is at the low end of the OECD (along with Australia and Japan), but not too far behind the 78-98% range for the rest of the countries in the table.

3.3 "RESTRICTED" DEMPATEM CATEGORIES

In light of the conceptual problems associated with the inclusion of consumer durables and given the substantial difficulties posed by international comparisons of housing, health, and education, the DEMPATEM group has decided to exclude these types of expenditures from the main international comparisons. **Table 11**, which is similar in structure the "complete" DEMPATEM expenditure categories in Table I, summarizes expenditures by the new "restricted" categories. In Table 11, all expenditures on health, education, and housing have been set equal to zero, and all expenditures on consumer durables have been removed from their corresponding DEMPATEM categories. In the process of moving from the "complete" DEMPATEM categories in Table I to the "restricted" DEMPATEM categories in Table 11, a large share of expenditures have dropped out of the analysis. The average total expenditures in the "complete" version of

¹⁶ As mentioned earlier, institutional arrangements for payment of private-sector health insurance mean that the

the data for 1997, for example, was \$32,709 (see row 6); after imposing the various restrictions on durables, housing, health, and education, average total expenditures in 1997 were just \$17,521 for the "restricted" categories (see Table 11, row 5).¹⁷ With the exception of the missing categories, however, the patterns of expenditures across the restricted categories are broadly similar to those for the complete categories in Table 1, both within each year and over time. (Table 12 shows the corresponding zero and negative expenditure rates for the categories in Table 11. These are not identical to Table 2 because expenditures on durable goods have been excluded from several of the expenditure categories.)

3.3.1 COMPARING DEMPATEM WITH NIPA CATEGORIES

Before proceeding to use the restricted DEMPATEM data as the basis for an analysis of expenditure patterns, Table 13 compares estimated expenditure shares in the complete and restricted versions of the DEMPATEM expenditure categories with roughly corresponding categories in the Bureau of Economic Analysis's National Income and Product Accounts for 1997.¹⁸ The comparison demonstrates some important differences in the two measures of expenditures.

The biggest differences between the DEMPATEM and NIPA categories concern housing, health, miscellaneous expenditures, and private transport goods (see the first two columns of the table). In the DEMPATEM data, the share of housing in total expenditures is substantially higher (25.6%) than it is in the NIPA data (14.7%). Differences in the imputation of rental equivalence of owner-occupied housing account for only a relatively small portion (2.4 percentage points) of the total gap (11.0 percentage points). Most of the difference appears to stem from housing-related expenditures (insurance, trash collection, and others) included as housing expenses in DEMPATEM and allocated to other categories in NIPA. Meanwhile, the DEMPATEM data show a much lower share of total expenditures on health (5.3%) than do the NIPA data (17.8%). In this case, the large difference is related to the CEX survey's inability to capture most employer-paid health-insurance premiums as well as health-care expenditures paid directly by private and public health insurance and health providers. The DEMPATEM data also show a much higher share of expenditure on private transport goods (12.7%) than the NIPA data do (7.1%).

CEX also misses an important part of private health expenditures.

¹⁷ Given that health and education are two of the largest service categories on both an expenditure- and an employment- basis, the analytical importance of these exclusions may be even larger than this arithmetic first suggests.

¹⁸ The expenditure shares for the DEMPATEM categories differ here from elsewhere in the paper. In all other tables, the DEMPATEM shares are the average of the household expenditure shares for each category. In Table 13, to make the expenditure measure compatible with the NIPA data, the DEMPATEM shares are the sum of all expenditures in the category over the sum of all expenditures.

Differences in expenditures on durable private transport goods (cars and other vehicles) account for most of the discrepancy. The final large divergence between DEMPATEM and NIPA concerns miscellaneous services. DEMPATEM shows expenditures in this area totalling about 5.3% of the total; NIPA, however, reports 11.5%. The NIPA statistics include substantial imputations for a variety of employer-and privately provided financial services (fees for mutual funds, for example), which the CEX survey does not capture.

At first glance, the DEMPATEM and NIPA data appear to show significant differences with respect to food and related expenditures. Food and non-alcoholic beverages, for example, make up 10.6% of DEMPATEM expenditures, but only 7.1% of NIPA expenditures. These differences, however, primarily reflect the particular conventions followed for aggregating food-related expenditures. In particular, the NIPA data do not distinguish very well between "food at home" and "food away." Once food and related expenditures are aggregated to a more comparable level (summing the DEMPATEM categories for food and non-alcoholic beverages; alcoholic beverages and tobacco; and food and beverages away from home), the differences between the DEMPATEM and NIPA categories disappear entirely.

Given the large discrepancies evident in Table 13 between the DEMPATEM and NIPA categories with respect to housing, health, and large consumer durables, the exclusion of these categories of expenditures may represent an improvement, even independent of any concerns about international comparability. The persistence of a large gap between miscellaneous services (primarily financial services) in the restricted version of the DEMPATEM data (9.8% of total expenditures, compared to 21.4% in NIPA), however, raises some concern. In particular, the inability to track accurately the consumption of financial services has important implications for our ability to understand any related impact on employment in the sector.

3.3.2 REAL VERSUS NOMINAL EXPENDITURES

Until now, the analysis here has ignored differences over time in the relative prices of goods and services. In fact, over time, the price of service rose more rapidly than goods prices. All else constant, this relative rise in the price of services should have lowered expenditures on services.

Table 14 explores the extent to which the consumption patterns that we have seen so far are sensitive to changes over time in the relative prices of goods and services for each of the expenditure categories. The first three columns of the table show the average expenditure shares under the assumption that the relative prices in each of the years were identical to the relative prices that prevailed in 1980. (Appendix Table G shows the category-specific consumer price indexes applied to each of the DEMPATEM categories, based on matching DEMPATEM

categories to detailed CPI categories across various issues of the BLS's *CPI Detailed Report*. Appendix Table H shows the mapping between specific CPI categories and the DEMPATEM categories.) The last three columns of the table show the differences in expenditure shares between the "constant-1980-price " expenditure shares and the "current-price" shares in Table 11.¹⁹ The evolution of expenditure patterns differs markedly depending on the choice of constant or current prices. Using current prices, expenditures on services rose about 8.3 percentage points of total expenditure between 1980 and 1997 (see Table 11); using constant-1980 prices, however, the increase was only 3.2 percentage points of total expenditure. Most of discrepancy stemmed from four categories: (4) private transport goods; (10) holiday services; (16) private transport services; and (20) miscellaneous services.²⁰

3.3.3 DIFFERENCES BY TOTAL EXPENDITURE LEVEL

Tables 15A and 15B examine how expenditure shares vary by total expenditure level –the size of each household's expenditure budget. Both tables divide households into quintiles according to per-capita expenditure; Table 15A uses current-price shares; Table 15B, constant-1997-price shares. For both current- and constant-prices, the share of service expenditures rises sharply with total expenditures in all three years.²¹

3.3.4 ENGEL CURVE ESTIMATION

Table 16 reports budget elasticities with respect to total expenditures from estimation of simple Engel curves of the form:

$$w_{kit} = \gamma_{k,o} + \gamma_{k,t} + \gamma_k' z_{it} + \beta_k \ln x_{it} + e_{kit}$$

where w_{kit} is the share of good k in household i total expenditures in year t ; x is total expenditures; z are household characteristics; and β are parameters to be estimated. ²²The specific regressors used are: the natural log of household size; the share of household under age six; the share 6-17; the share 18-30; the share 31-64; and the share 65 or older; the age and age squared of the household's reference person; the number of employed persons in the household; a binary variable equal to one if all adults in the household were employed; and a

¹⁹ Appendix Table I presents corresponding figures for the complete DEMPATEM categories.

²⁰ Using constant 1997 prices (not shown), the increase in the service share between 1980 and 1997 was 2.2 percentage points.

²¹ Appendix Tables J and K present corresponding distributions for the complete DEMPATEM categories. When housing, health, education, and durables are included in the analysis, the share of services in total expenditures rises much less sharply with total expenditures. In 1997, the relationship actually takes an inverse u-shape: the service share first rises with total expenditure and then declines.

²² This is an implementation of an Almost Ideal Demand System, as described in Deaton and Muellbauer (1980). See Blow, Kalwij, and Ruiz -Castillo (2003) for a more complete discussion of the estimation approach. The procedure assumes separability since expenditures on housing, health, education, and durables are not included in the analysis.

binary variable equal to one if all household members were employed and there was a child under the age of six in the household. To compensate for the possibility of measurement error in total expenditures, after-tax income acts as an instrument for total household expenditures. The main feature of this particular implementation of equation (1) is that the available data allow for identical estimation for France, Germany, the Netherlands, Spain, and the United Kingdom.

In all three years, all of the service categories except communications services have budget elasticities above 1.0; all services together have an estimated elasticity of about 1.4 in all three years. Meanwhile, most of the goods categories have elasticities below one, with the elasticity of all non-durable goods together about 0.75.

Exceptions are clothing and shoes (1.12-1.22), entertainment goods (1.39-1.45), and furniture and appliances (1.76-1.95); and private transport goods (1.01-1.05, in two of the three years). For the most part, elasticities are fairly constant over time or fluctuate with no clear trend.²³

Table 17 tests the robustness of the elasticities presented in Table 16, by estimating three alternatives to the basic specification. The first alternative adds two variables to the basic model. One is an interaction between total expenditures and the binary variable for whether all adults in the house are employed. This interaction term allows a household's employment circumstances to affect expenditure patterns differently depending on the overall level of expenditures. This may be particularly important for capturing the impact of two-earner households on expenditures of certain goods and services. The second variable in this first alternative specification is a binary variable equal to one if the household owns its house. A comparison of the estimated budget elasticities using the first alternative specification (see the first two columns of Table 17) with elasticities from the basic model in Table 16 shows broad agreement across the two approaches. The estimated elasticity for all services is 5-8% higher using the alternative specification and most of the elasticities for specific categories are within 10% of each other. Home energy, which has an elasticity about 40% lower using the alternative specification, is the category with the largest divergence across the two approaches.

The second alternative specification in Table 17 (see columns three and four) adds a series of control variables to the basic specification in equation (1). These additional variables –for region (3 variables); race and ethnicity of the householder (3 variables); and educational attainment of the householder (3 variables)– are not available on a comparable basis across all the DEMPATEM countries. In order to reduce the influence of outliers, the second alternative

specification also excludes observations where expenditure shares for any of the expenditure categories was six standard deviations above or below the mean expenditure share for the category. The resulting estimated elasticities are fairly close to those produced with the basic specification. The elasticity for all services estimated using the second alternative, for example, is only 3-4% lower than it is with the basic model. All of the estimates for the individual expenditure categories from the basic model and the second alternative specification lie within 20% of each other (except alcoholic beverages, where the two differ by about 25%).

The third alternative specification attempts to assess the potential impact of the considerable number of households that have "zero shares" for expenditures in particular categories. While the procedure is not ideal, the last two columns of Table 17 show the elasticities that result from using a Tobit procedure to estimate the basic specification in Table 16. Where households have no or few "zeros" for expenditure share, the estimated elasticities in the basic model and the Tobit version are identical or very close. In cases where "zero shares" are important, however, the divergence between the basic and Tobit specifications can be large. The estimated budget elasticity for holiday services (about 35% "zeros"), for example, is 40-50% higher using the Tobit procedure than it is using the basic model. Other categories where the Tobit procedure shows significantly larger elasticities are alcoholic beverages (47% in 1997), furniture and appliances (35%), household services (13-27%), public transport services (40-86%), and entertainment services (23% in 1980).

3.2.5 DECOMPOSING CHANGES IN SERVICE SHARES OVER TIME

For the purposes of the DEMPATEM project, which seeks to assess the impact of household expenditure patterns on national employment patterns, the main reason for estimating equation (1) is that the results can be used to decompose changes in service expenditures over time into three broad economic forces: "demography," "employment," and "expenditures".²⁴ **Table 18** reports the results of a simple decomposition of changes in average expenditure shares between 1980 and 1997. The procedure decomposes the total change in expenditure shares into the portion due to changes in: demographics; employment characteristics; the level of average expenditures; the inequality of total expenditures; and the "Baumol" (price) effect, which is not included in equation (1) but which can be estimated from the aggregate data following the procedure described in detail in Blow, Kalwij, and Ruiz-Castillo (2003). Of the 8.3 percentage -

²³ Appendix Table K reports the R-squared and the sample size for the equations used to produce the elasticities in Tables 16 and 17.

point rise between 1980 and 1997 in the share of service expenditures, 3.2 percentage points (about 39% of the total change) was related to the "Baumol" cost disease. Changes in demographic and employment variables increased the services share about 0.7 percentage points (about 8%). Changes in total expenditures *lowered* expenditures on services by 0.9 percentage points. This unexpected effect of total expenditures on the service share is a logical result of the decline in the real level of total expenditures on DEMPATEM restricted categories between 1980 and 1997 (even as expenditures on DEMPATEM complete categories rose). The slight rise in expenditure inequality over the same period, meanwhile, had no impact on service expenditures.²⁵

To check the robustness of the decomposition using the basic specification, **Table 19** presents the results of conducting the same decomposition with the three alternative specifications discussed already in Table 17. To simplify the presentation, the table shows only results for the overall service sector (full results are available on request). The four separate approaches yield qualitatively similar results. Excluding the residual, the "Baumol" effect accounts for the largest part (3.2 percentage points) of the 8.3 percentage -point increase in the service expenditure share over the period. Expenditure effects are the next most important factor, but operate perversely. Since the real value of the "restricted" DEMPATEM expenditures –which exclude housing, health, education, and durables– fell over the period, changes in expenditure over time appear to have lowered expenditure shares.²⁶ Demographic changes over the period raised the service share between 0.8 and 1.3 percentage points. Changes in employment, meanwhile, had little effect, varying from -0.2 to 0.2 depending on the specification.²⁷ The rise in overall inequality in the 1980s and 1990s also appears to have had no measurable impact on service consumption (0.0-0.1 percentage points).

²⁴ This paper presents only the decomposition of expenditure shares over time for the United States. For decompositions of the differences between the United States and the other DEMPATEM countries, see the other DEMPATEM country papers.

²⁵ This decomposition uses the coefficients from the 1980 versions of equation (1) to weight changes in the explanatory variables over the period 1980-1997. Using 1997 coefficients as weights has no qualitative impact on the results in Table 18.

²⁶ That a 6% decline in total ("restricted") expenditures could drive down the service expenditure share by 1.0 to 1.5 percentage points suggests that expenditure or income effects, if properly captured, could have a substantial impact on the service share.

²⁷ The "employment" variables in the first alternative specification include the employment-expenditure interaction, which could also have been included with the "expenditure" variables.

REFERENCES

- Blow, Laura. 2003. "Household Expenditures Patterns in the United Kingdom: DEMPATEM Project," Institute for Fiscal Studies, London.
- Blow, Laura, Adriaan Kalwij, and Javier Ruiz-Castillo. 2003. "Methodological issues on the analysis of consumer demand patterns over time and across countries," AIAS, Amsterdam.
- Deaton, Angus and John Muellbauer. 1980. "An Almost Ideal Demand System," *American Economic Review* , vol. 70, pp. 312-326.
- Gardes, Francois and Christophe Starzec. 2003. "Household Demand Patterns in France 1980-1995," Maison des Sciences Economiques, University of Paris.
- Kalwij, Adriaan. 2003. "Household Demand Patterns in the Netherlands: 1979, 1989, 1998," paper prepared for DEMPATEM Consumption meeting, Paris, March 7-8, 2003.
- Kalwij, Adriaan and Wiemer Salverda. 2003. "Household Demand Patterns in the Netherlands: 1979, 1989, 1998," AIAS, Amsterdam.
- Luengo-Prado, Maria Jose and Javier Ruiz -Castillo. 2003. "Demand Patterns in Spain: DEMPATEM Project," Universidad Carlos III, Madrid.
- United States Department of Labor, Bureau of Labor Statistics. 1980, 1990, 1997. *Consumer Expenditure Survey, Diary Survey*, Washington, DC: Bureau of Labor Statistics.
- United States Department of Labor, Bureau of Labor Statistics. 1980, 1990, 1997. *Consumer Expenditure Survey, Interview Survey*, Washington, DC: Bureau of Labor Statistics.
- United States Department of Labor, Bureau of Labor Statistics. 1999a. *1997 Diary Survey Public Use Microdata Documentation* , Washington, DC: Bureau of Labor Statistics.
- United States Department of Labor, Bureau of Labor Statistics. 1999b. *1997 Interview Survey Public Use Microdata Documentation* , Washington, DC: Bureau of Labor Statistics.
- van Deelen, Marijke and Ronald Schettkat. 2003. "Household Demand Patterns in West Germany: 1978-1993," Department of Economics and Economic Policy, University of Utrecht.

APPENDIX

Table A. United States: weighted-average household size and number of children

	1980	1990	1997	Percent change 1980-97
Average household size (persons)	2.73	2.52	2.54	-7.2
Average number of children	0.80	0.67	0.70	7.0
Distribution of number of children (%)				
No Children	59.7	64.5	63.4	(p.p.) 3.7
One Child	16.2	14.6	14.7	-1.5
Two Children	14.2	13.2	13.5	-0.8
Three Children	6.1	5.7	5.8	-0.4
Four or More Children	3.7	2.1	2.6	-1.1

Notes: For source and sample criteria, see notes to Table 1. Children under age 18 only.

Table B. United States: weighted distribution of household income and expenditures
(1997 US dollars)

	1980	1990	1997	Change (%) 1980-97
<i>(a) Total expenditure</i>				
Average	30,331	31,022	32,709	7.8
1 Percentile	5,095	5,439	5,205	2.2
5	8,115	9,126	9,280	14.4
10	10,840	11,856	12,343	13.9
25	17,321	17,609	18,539	7.0
50	26,781	26,420	27,975	4.5
75	38,699	38,786	41,444	7.1
90	53,980	55,563	58,743	8.8
95	64,736	67,928	71,986	11.2
99 Percentile	90,390	101,169	106,983	18.4
90-10 ratio	4.98	4.69	4.76	-4.4
<i>(b) After -tax income</i>				
Average	29,279	33,533	36,282	23.9
1 Percentile	550	610	680	23.5
5	4,143	4,703	4,889	18.0
10	6,609	7,324	7,527	13.9
25	13,274	13,369	14,000	5.5
50	25,412	26,760	27,662	8.9
75	40,352	46,012	49,704	23.2
90	56,731	67,974	73,078	28.8
95	68,806	86,460	92,860	35.0
99 Percentile	102,279	129,272	166,633	62.9
90-10 ratio	8.58	9.28	9.71	13.1
<i>(c) DEMPATEM "restricted" expenditures</i>				
Average	18,621	17,764	17,521	-6.1
1 Percentile	2,578	2,865	2,541	-1.3
5	4,437	4,800	4,570	3.9
10	6,178	6,261	6,162	-1.0
25	10,571	9,755	9,789	-7.5
50	16,897	15,378	15,087	-10.6
75	24,136	22,391	22,403	-7.8
90	32,408	31,032	30,884	-4.0
95	38,546	38,555	38,150	-1.9
99 Percentile	53,940	57,937	57,281	5.3
90-10 ratio	5.25	4.96	5.01	-3.0

Notes: For source and sample criteria, see notes to Table 1. Total expenditures include author's imputation for rental equivalence of owner -occupied housing.

Table C. United States: inequality of various consumption and income measures

	90-10 ratio			Standard deviation (1997\$)		
	1980	1990	1997	1980	1990	1997
<i>(a) All households</i>						
Durables	1,391.5			6,973	8,573	9,595
Housing	4.2	3.9	4.2	3,933	3,898	4,863
Health	122.3	807.2		2,878	2,561	2,326
Education				1,324	1,877	2,171
Expenditures excluding above	5.2	5.0	5.0	11,635	12,351	11,369
Total expenditures	5.0	4.7	4.8	18,807	20,769	20,917
Total before-tax income	9.7	10.2	10.4	26,867	31,371	36,568
<i>(b) Households with non-zero expenditures only</i>						
Durables	128.0	143.3	181.6	7,214	8,948	10,045
Housing	4.1	3.7	4.0	3,920	3,848	4,815
Health	20.0	21.4	17.8	2,955	2,614	2,311
Education	115.6	110.3	117.9	2,255	3,262	3,671

Notes: For source and sample criteria, see notes to Table 1.

Table D. United States: weighted distribution of DEMPATEM (17) household types

DEMPATEM Type	Marital status	Age reference person	Age youngest child	Number employed	Share of all (%)			Change (in p.p.) 1980-97
					1980	1990	1997	
1	Single	16-64	None	0	1.8	1.7	1.9	0.1
2	Single	16-64	None	1	14.3	17.0	16.4	2.1
3	Single	65+	None	0,1	8.7	9.9	9.9	1.2
4	Couple	16-64	None	0	1.2	1.1	1.2	0.0
5	Couple	16-64	None	1	4.9	3.9	4.0	-0.9
6	Couple	16-64	None	2+	14.8	14.8	13.5	-1.3
7	Couple	65+	None	0, 1, 2+	9.1	9.4	9.6	0.5
8	Other	16+	None	0, 1, 2+	7.3	9.3	10.3	2.9
9	Single	16+	0-17	0	1.2	1.3	1.1	-0.1
10	Single	16+	0-17	1	4.2	4.9	5.2	1.0
11	Couple	16+	0-5	0	0.3	0.2	0.1	-0.2
12	Couple	16+	0-5	1	5.4	3.5	3.1	-2.3
13	Couple	16+	0-5	2+	8.5	8.9	7.7	-0.8
14	Couple	16+	6-17	0	0.1	0.2	0.2	0.1
15	Couple	16+	6-17	1	3.1	1.9	2.4	-0.7
16	Couple	16+	6-17	2+	13.6	10.3	11.3	-2.3
17	Other	16+	0-17	0, 1, 2+	1.4	1.8	2.3	0.9

Notes: For source and sample criteria, see notes to Table 1.

Table E. United States: unweighted distribution of DEMPATEM (17) household types

DEMPATEM Type	Marital status	Age reference person	Age youngest child	Number employed	Sample size		
					1980	1990	1997
1	Single	16-64	None	0	110	113	129
2	Single	16-64	None	1	911	1,075	1,070
3	Single	65+	None	0,1	532	578	641
4	Couple	16-64	None	0	64	65	69
5	Couple	16-64	None	1	278	234	246
6	Couple	16-64	None	2+	819	942	821
7	Couple	65+	None	0, 1, 2+	529	596	591
8	Other	16+	None	0, 1, 2+	448	598	622
9	Single	16+	0-17	0	69	83	77
10	Single	16+	0-17	1	257	310	366
11	Couple	16+	0-5	0	11	11	7
12	Couple	16+	0-5	1	315	236	230
13	Couple	16+	0-5	2+	514	629	530
14	Couple	16+	6-17	0	9	12	16
15	Couple	16+	6-17	1	176	127	152
16	Couple	16+	6-17	2+	781	702	732
17	Other	16+	0-17	0, 1, 2+	74	117	155

Notes: For source and sample criteria, see notes to Table 1.

Table F. United States: category-specific consumer price index levels, 1980, 1990, 1997

DEMPATEM Type	Marital status	Age reference person	Age youngest child	Number employed	Share of all (%)			Change (in p.p.) 1980-97
					1980	1990	1997	
1	Single	16-64	None	0	1.8	1.7	1.9	0.1
2	Single	16-64	None	1	14.3	17.0	16.4	2.1
3	Single	65+	None	0,1	8.7	9.9	9.9	1.2
4	Couple	16-64	None	0	1.2	1.1	1.2	0.0
5	Couple	16-64	None	1	4.9	3.9	4.0	-0.9
6	Couple	16-64	None	2+	14.8	14.8	13.5	-1.3
7	Couple	65+	None	0, 1, 2+	9.1	9.4	9.6	0.5
8	Other	16+	None	0, 1, 2+	7.3	9.3	10.3	2.9
9	Single	16+	0-17	0	1.2	1.3	1.1	-0.1
10	Single	16+	0-17	1	4.2	4.9	5.2	1.0
11	Couple	16+	0-5	0	0.3	0.2	0.1	-0.2
12	Couple	16+	0-5	1	5.4	3.5	3.1	-2.3
13	Couple	16+	0-5	2+	8.5	8.9	7.7	-0.8
14	Couple	16+	6-17	0	0.1	0.2	0.2	0.1
15	Couple	16+	6-17	1	3.1	1.9	2.4	-0.7
16	Couple	16+	6-17	2+	13.6	10.3	11.3	-2.3
17	Other	16+	0-17	0, 1, 2+	1.4	1.8	2.3	0.9

Notes: Author's calculations based on various issues of BLS, CPI Detailed Report.

Table G. Allocation of detailed Consumer Price Index categories to DEMPATEM categories

DEMPATEM category	Detailed CPI category
1. Food and non-alcoholic beverages	Food at home
2. Alcoholic beverages and tobacco	Weighted average of: Alcoholic beverages Tobacco and smoking products
3. Clothing and footwear	Apparel commodities
4. Private transport goods	Transportation, private
5. Furnishing and appliances	House furnishings
6. Entertainment goods	Entertainment commodities
7. Personal goods	Toilet goods & personal care appliances
8. Home energy	Fuel & other utilities
9. Food and beverages away from home	Food away from home
10. Holiday services	Services, Other services
11. Housing	Housing
12. Household services	Unweighted average of: Special indexes, Housekeeping & home maintenance services Day care & nursery school Laundry and dry cleaning other than coin operated Appliance & furniture repair
13. Health goods and services	Medical care
14. Personal services	Personal care services
15. Public transport services	Public transportation
16. Private transport services	Weighted average of: Automobile maintenance & repair Other private transportation services
17. Communication services	Telephone services
18. Education and training services	Tuition & other school fees
19. Entertainment services	Entertainment services
20. Miscellaneous services	Services, Other services

Table H. United States: comparison of weighted-average current- and constant-price expenditure shares for "complete" DEMPATEM categories
(Percent of total expenditures)

Expenditure category	Constant 1997 prices			Current - constant price		
	1980	1990	1997	1980	1990	1997
1. Food and non-alcoholic beverages	15.3	13.7	12.4	1.0	0.1	0.0
2. Alcoholic beverages and tobacco	3.0	2.4	1.8	-0.1	0.0	0.0
3. Clothing and footwear	4.1	3.9	3.8	0.5	0.6	0.0
4. Private transport goods	8.2	8.5	9.2	3.6	0.3	0.0
5. Furnishing and appliances	2.2	2.4	2.6	1.1	0.4	0.0
6. Entertainment goods	2.6	3.0	3.2	0.3	0.1	0.0
7. Personal Goods	2.6	2.6	2.7	0.2	0.2	0.0
8. Home energy	4.8	4.7	4.7	0.4	0.2	0.0
9. Food and beverages away from home	3.5	3.4	3.3	0.1	0.1	0.0
10. Holiday Services	2.9	2.5	2.0	-0.8	-0.3	0.0
11. Housing	22.8	25.2	28.4	-0.2	0.1	0.0
12. Household services	1.7	1.8	1.6	0.0	0.0	0.0
13. Health goods and services	7.2	6.6	5.7	-2.6	-0.9	0.0
14. Personal services	0.9	1.0	0.9	0.0	0.0	0.0
15. Public transport services	1.4	1.1	1.0	-0.4	-0.1	0.0
16. Private transport services	4.9	4.9	4.8	-0.8	-0.2	0.0
17. Communication services	2.0	2.9	3.4	0.4	0.3	0.0
18. Education and training services	1.8	1.5	1.4	-0.8	-0.3	0.0
19. Entertainment services	1.4	2.0	2.2	-0.2	-0.1	0.0
20. Miscellaneous goods and services	6.7	5.7	4.7	-1.8	-0.6	0.0
All nondurable goods (Categories 1-8)	42.9	41.3	40.6	7.0	1.9	0.0
All services (Categories 9-20)	57.1	58.7	59.4	-7.0	-1.9	0.0

Notes: For source and sample criteria, see notes to Table I. Real expenditures deflated using corresponding, category-specific consumer price index from various issues of BLS, CPI Detailed Report.

Table I. United States: weighted-average current-price "complete" expenditure shares by quintile of per-capita household expenditure

	1980					
	All	Quintile				
		1	2	3	4	5
<i>(a) Household characteristics</i>						
No job (% of all)	5.0	9.6	3.9	3.5	4.8	3.3
One job (% of all)	36.7	33.6	33.9	28.2	35.2	53.7
Two jobs (% of all)	44.6	44.1	44.4	53.4	47.7	32.3
Retired, no earners (% of all)	13.7	12.7	17.8	14.9	12.3	10.7
Average number persons	2.73	3.95	3.04	2.70	2.26	1.68
Average number children	0.80	1.77	1.07	0.68	0.36	0.12
Average age reference person	46.3	44.7	46.3	48.1	46.6	45.6
Average after-tax income (1997\$)	29,279	20,107	26,136	29,928	33,535	36,945
Average "complete" expenditures (1997\$)	30,331	18,549	24,416	29,752	34,497	45,189
<i>(b) Share of expenditures in total expenditures (DEMPATEM "complete" definitions)</i>						
Goods	0.500	0.550	0.507	0.488	0.479	0.475
1. Food and non-alcoholic beverages	0.163	0.239	0.188	0.159	0.131	0.097
2. Alcoholic beverages and tobacco	0.029	0.030	0.028	0.026	0.032	0.030
3. Clothing and Footwear	0.046	0.043	0.045	0.046	0.047	0.051
4. Private Transport Goods	0.118	0.092	0.100	0.110	0.127	0.164
5. Furnishing and Appliances	0.033	0.023	0.027	0.036	0.037	0.041
6. Entertainment Goods	0.029	0.024	0.029	0.029	0.032	0.033
7. Personal Goods	0.028	0.035	0.031	0.026	0.025	0.022
8. Home Energy	0.053	0.066	0.058	0.055	0.047	0.037
Services	0.500	0.450	0.493	0.512	0.521	0.525
9. Food and beverages away from home	0.036	0.023	0.033	0.033	0.041	0.050
10. Holiday Services	0.022	0.009	0.015	0.020	0.028	0.038
11. Housing	0.226	0.234	0.237	0.233	0.222	0.203
12. Household Services	0.016	0.014	0.016	0.016	0.015	0.020
13. Health Goods and Services	0.046	0.043	0.047	0.052	0.046	0.040
14. Personal Services	0.009	0.008	0.009	0.010	0.009	0.008
15. Public Transport Services	0.011	0.008	0.008	0.009	0.012	0.016
16. Private Transport Services	0.041	0.030	0.039	0.045	0.048	0.042
17. Communication Services	0.023	0.028	0.024	0.022	0.021	0.022
18. Education and Training Services	0.010	0.006	0.009	0.011	0.012	0.011
19. Entertainment Services	0.012	0.008	0.012	0.012	0.013	0.014
20. Miscellaneous Goods and Services	0.049	0.037	0.046	0.049	0.053	0.060
All	1.000	1.000	1.000	1.000	1.000	1.000
(continued)						

Table I. (continued)

United States: weighted-average current-price "complete" expenditure shares by quintile of per-capita household expenditure

	1990					
	All	Quintile				
		1	2	3	4	5
<i>(a) Household characteristics</i>						
No job (% of all)	4.9	12.0	3.6	2.6	3.7	3.5
One job (% of all)	36.9	36.5	30.3	30.5	35.9	51.7
Two jobs (% of all)	43.3	44.1	49.7	48.7	44.6	28.9
Retired, no earners (% of all)	15.0	7.4	16.5	18.3	15.9	15.9
Average number persons	2.52	3.75	2.91	2.40	2.05	1.61
Average number children	0.67	1.68	0.89	0.50	0.30	0.11
Average age reference person	47.3	41.1	48.0	49.1	48.8	48.8
Average after-tax income (1997\$)	33,533	20,350	29,554	33,668	38,381	44,343
Average "complete" expenditures (1997\$)	31,022	18,135	24,700	28,762	34,138	48,312
<i>(b) Share of expenditures in total expenditures (DEMPATEM "complete" definitions)</i>						
Goods	0.432	0.494	0.433	0.421	0.404	0.415
1. Food and non-alcoholic beverages	0.138	0.209	0.159	0.134	0.112	0.082
2. Alcoholic beverages and tobacco	0.023	0.029	0.025	0.023	0.021	0.020
3. Clothing and Footwear	0.045	0.048	0.039	0.043	0.046	0.050
4. Private Transport Goods	0.088	0.059	0.069	0.084	0.096	0.128
5. Furnishing and Appliances	0.029	0.022	0.024	0.029	0.031	0.037
6. Entertainment Goods	0.032	0.025	0.029	0.031	0.032	0.042
7. Personal Goods	0.029	0.040	0.031	0.027	0.025	0.021
8. Home Energy	0.049	0.062	0.057	0.051	0.042	0.035
Services	0.568	0.506	0.567	0.579	0.596	0.585
9. Food and beverages away from home	0.036	0.027	0.032	0.034	0.039	0.044
10. Holiday Services	0.022	0.011	0.017	0.021	0.027	0.035
11. Housing	0.254	0.252	0.262	0.262	0.263	0.228
12. Household Services	0.018	0.016	0.020	0.017	0.016	0.021
13. Health Goods and Services	0.057	0.043	0.066	0.063	0.057	0.055
14. Personal Services	0.010	0.010	0.010	0.010	0.010	0.008
15. Public Transport Services	0.010	0.008	0.007	0.009	0.010	0.016
16. Private Transport Services	0.047	0.036	0.046	0.052	0.054	0.049
17. Communication Services	0.032	0.041	0.034	0.032	0.029	0.025
18. Education and Training Services	0.012	0.010	0.011	0.010	0.015	0.015
19. Entertainment Services	0.019	0.016	0.018	0.019	0.020	0.021
20. Miscellaneous Goods and Services	0.051	0.036	0.045	0.050	0.055	0.067
All	1.000	1.000	1.000	1.000	1.000	1.000
(continued)						

Table I. (continued)

United States: weighted-average current-price "complete" expenditure shares by quintile of per-capita household expenditure

	1997					
	All	Quintile				
		1	2	3	4	5
<i>(a) Household characteristics</i>						
No job (% of all)	5.0	11.4	4.2	3.3	3.1	3.4
One job (% of all)	37.3	36.8	29.9	30.4	37.3	51.7
Two jobs (% of all)	42.5	44.5	52.9	44.7	40.5	30.4
Retired, no earners (% of all)	15.3	7.4	13.1	21.6	19.0	14.6
Average number persons	2.54	3.80	3.00	2.39	2.00	1.62
Average number children	0.70	1.73	0.98	0.49	0.31	0.11
Average age reference person	48.1	41.7	46.5	51.0	50.6	50.0
Average after-tax income (1997\$)	36,282	21,712	32,118	34,954	39,660	51,566
Average "complete" expenditures (1997\$)	32,709	18,686	26,450	30,257	35,290	51,459
<i>(b) Share of expenditures in total expenditures (DEMPATEM "complete" definitions)</i>						
Goods	0.406	0.454	0.403	0.384	0.381	0.411
1. Food and non-alcoholic beverages	0.124	0.191	0.142	0.120	0.101	0.074
2. Alcoholic beverages and tobacco	0.018	0.021	0.019	0.018	0.018	0.016
3. Clothing and Footwear	0.038	0.041	0.037	0.036	0.037	0.041
4. Private Transport Goods	0.092	0.058	0.070	0.079	0.096	0.152
5. Furnishing and Appliances	0.026	0.018	0.022	0.025	0.030	0.035
6. Entertainment Goods	0.032	0.025	0.030	0.031	0.034	0.041
7. Personal Goods	0.027	0.037	0.030	0.026	0.024	0.021
8. Home Energy	0.047	0.062	0.053	0.050	0.042	0.032
Services	0.594	0.546	0.597	0.616	0.619	0.589
9. Food and beverages away from home	0.033	0.029	0.032	0.032	0.034	0.039
10. Holiday Services	0.020	0.009	0.015	0.018	0.024	0.032
11. Housing	0.284	0.286	0.292	0.294	0.289	0.260
12. Household Services	0.016	0.015	0.017	0.017	0.016	0.017
13. Health Goods and Services	0.057	0.041	0.064	0.070	0.063	0.047
14. Personal Services	0.009	0.010	0.010	0.010	0.009	0.008
15. Public Transport Services	0.010	0.008	0.007	0.008	0.012	0.015
16. Private Transport Services	0.048	0.040	0.048	0.051	0.052	0.047
17. Communication Services	0.034	0.045	0.036	0.032	0.030	0.026
18. Education and Training Services	0.014	0.011	0.012	0.014	0.015	0.015
19. Entertainment Services	0.022	0.020	0.022	0.022	0.023	0.024
20. Miscellaneous Goods and Services	0.047	0.032	0.043	0.047	0.051	0.059
All	1.000	1.000	1.000	1.000	1.000	1.000

Notes: For source and sample criteria, see notes to Table I.

Table J. United States: weighted-average constant-price "complete" expenditure shares by quintile of per-capita household expenditure

	1980					
	All	Quintile				
		1	2	3	4	5
<i>(a) Household characteristics</i>						
No job (% of all)	5.0	9.9	3.3	3.6	4.6	3.7
One job (% of all)	36.7	34.3	32.5	28.9	34.6	54.8
Two jobs (% of all)	44.6	44.4	46.9	52.9	46.8	30.5
Retired, no earners (% of all)	13.7	11.4	17.4	14.5	13.9	11.1
Average number persons	2.73	4.00	3.07	2.66	2.21	1.66
Average number children	0.80	1.83	1.06	0.65	0.34	0.11
Average age reference person	46.3	44.0	46.1	47.9	47.6	45.7
Average after-tax income (1997\$)	29,275	20,421	26,892	29,610	33,249	36,599
Average "complete" expenditures (1997\$)	31,345	12,598	16,201	18,721	21,097	27,635
<i>(b) Share of expenditures in total expenditures (DEMPATEM "complete" definitions)</i>						
Goods	0.428	0.502	0.446	0.418	0.401	0.377
1. Food and non-alcoholic beverages	0.153	0.229	0.175	0.148	0.121	0.089
2. Alcoholic beverages and tobacco	0.030	0.031	0.030	0.027	0.032	0.031
3. Clothing and Footwear	0.041	0.040	0.039	0.041	0.041	0.045
4. Private Transport Goods	0.082	0.069	0.075	0.076	0.089	0.102
5. Furnishing and Appliances	0.022	0.016	0.019	0.025	0.024	0.026
6. Entertainment Goods	0.026	0.022	0.026	0.027	0.028	0.029
7. Personal Goods	0.026	0.033	0.029	0.025	0.023	0.021
8. Home Energy	0.048	0.062	0.053	0.050	0.043	0.033
Services	0.571	0.498	0.554	0.582	0.599	0.623
9. Food and beverages away from home	0.035	0.023	0.032	0.033	0.039	0.050
10. Holiday Services	0.029	0.012	0.020	0.026	0.037	0.054
11. Housing	0.228	0.238	0.238	0.234	0.224	0.204
12. Household Services	0.017	0.015	0.016	0.017	0.015	0.020
13. Health Goods and Services	0.072	0.062	0.073	0.079	0.078	0.068
14. Personal Services	0.009	0.008	0.009	0.010	0.009	0.008
15. Public Transport Services	0.014	0.010	0.011	0.011	0.016	0.024
16. Private Transport Services	0.049	0.037	0.046	0.054	0.055	0.050
17. Communication Services	0.020	0.024	0.020	0.019	0.018	0.018
18. Education and Training Services	0.018	0.008	0.015	0.020	0.020	0.026
19. Entertainment Services	0.014	0.009	0.014	0.013	0.015	0.017
20. Miscellaneous Goods and Services	0.067	0.052	0.063	0.066	0.073	0.083
All	1.000	1.000	1.000	1.000	1.000	1.000
(continued)						

Table J. (continued)

United States: weighted-average constant-price "complete" expenditure shares by quintile of per-capita household expenditure

	1990					
	All	Quintile				
		1	2	3	4	5
<i>(a) Household characteristics</i>						
No job (% of all)	4.9	12.1	3.4	2.9	3.4	3.6
One job (% of all)	36.9	37.0	30.3	30.0	36.6	51.0
Two jobs (% of all)	43.3	44.0	49.8	49.0	43.8	29.2
Retired, no earners (% of all)	15.0	6.8	16.5	18.1	16.2	16.2
Average number persons	2.52	3.77	2.92	2.39	2.04	1.62
Average number children	0.67	1.70	0.89	0.50	0.30	0.11
Average age reference person	47.3	41.0	47.9	49.0	49.1	48.8
Average after-tax income (1997\$)	33,533	20,328	29,736	33,749	38,043	44,432
Average "complete" expenditures (1997\$)	31,770	11,711	15,367	16,975	19,346	26,549
<i>(b) Share of expenditures in total expenditures (DEMPATEM "complete" definitions)</i>						
Goods	0.413	0.482	0.416	0.403	0.383	0.389
1. Food and non-alcoholic beverages	0.137	0.209	0.159	0.133	0.111	0.081
2. Alcoholic beverages and tobacco	0.024	0.030	0.026	0.023	0.021	0.020
3. Clothing and Footwear	0.039	0.043	0.034	0.037	0.040	0.043
4. Private Transport Goods	0.085	0.059	0.068	0.081	0.092	0.123
5. Furnishing and Appliances	0.024	0.020	0.021	0.025	0.026	0.030
6. Entertainment Goods	0.030	0.025	0.027	0.030	0.030	0.040
7. Personal Goods	0.026	0.037	0.028	0.025	0.023	0.019
8. Home Energy	0.047	0.060	0.054	0.048	0.041	0.033
Services	0.587	0.518	0.584	0.597	0.617	0.611
9. Food and beverages away from home	0.034	0.027	0.031	0.033	0.037	0.043
10. Holiday Services	0.025	0.012	0.019	0.023	0.030	0.041
11. Housing	0.252	0.253	0.259	0.262	0.262	0.224
12. Household Services	0.018	0.016	0.020	0.017	0.017	0.021
13. Health Goods and Services	0.066	0.049	0.075	0.073	0.066	0.066
14. Personal Services	0.010	0.010	0.010	0.010	0.010	0.008
15. Public Transport Services	0.011	0.009	0.007	0.009	0.010	0.017
16. Private Transport Services	0.049	0.037	0.047	0.053	0.057	0.050
17. Communication Services	0.029	0.037	0.031	0.028	0.026	0.022
18. Education and Training Services	0.015	0.012	0.013	0.012	0.018	0.021
19. Entertainment Services	0.020	0.017	0.019	0.020	0.021	0.022
20. Miscellaneous Goods and Services	0.057	0.040	0.052	0.056	0.062	0.076
All	1.000	1.000	1.000	1.000	1.000	1.000
(continued)						

Table J. (continued)

United States: weighted-average constant-price "complete" expenditure shares by quintile of per-capita household expenditure

	1997					
	All	Quintile				
		1	2	3	4	5
<i>(a) Household characteristics</i>						
No job (% of all)	5.0	11.4	4.2	3.3	3.1	3.4
One job (% of all)	37.3	36.8	29.9	30.4	37.3	51.7
Two jobs (% of all)	42.5	44.5	52.9	44.7	40.5	30.4
Retired, no earners (% of all)	15.3	7.4	13.1	21.6	19.0	14.6
Average number persons	2.54	3.80	3.00	2.39	2.00	1.62
Average number children	0.70	1.73	0.98	0.49	0.31	0.11
Average age reference person	48.1	41.7	46.5	51.0	50.6	50.0
Average after-tax income (1997\$)	36,282	21,712	32,118	34,954	39,660	51,566
Average "complete" expenditures (1997\$)	32,709	18,686	26,450	30,257	35,290	51,459
<i>(b) Share of expenditures in total expenditures (DEMPATEM "complete" definitions)</i>						
Goods	0.406	0.454	0.403	0.384	0.381	0.411
1. Food and non-alcoholic beverages	0.124	0.191	0.142	0.120	0.101	0.074
2. Alcoholic beverages and tobacco	0.018	0.021	0.019	0.018	0.018	0.016
3. Clothing and Footwear	0.038	0.041	0.037	0.036	0.037	0.041
4. Private Transport Goods	0.092	0.058	0.070	0.079	0.096	0.152
5. Furnishing and Appliances	0.026	0.018	0.022	0.025	0.030	0.035
6. Entertainment Goods	0.032	0.025	0.030	0.031	0.034	0.041
7. Personal Goods	0.027	0.037	0.030	0.026	0.024	0.021
8. Home Energy	0.047	0.062	0.053	0.050	0.042	0.032
Services	0.594	0.546	0.597	0.616	0.619	0.589
9. Food and beverages away from home	0.033	0.029	0.032	0.032	0.034	0.039
10. Holiday Services	0.020	0.009	0.015	0.018	0.024	0.032
11. Housing	0.284	0.286	0.292	0.294	0.289	0.260
12. Household Services	0.016	0.015	0.017	0.017	0.016	0.017
13. Health Goods and Services	0.057	0.041	0.064	0.070	0.063	0.047
14. Personal Services	0.009	0.010	0.010	0.010	0.009	0.008
15. Public Transport Services	0.010	0.008	0.007	0.008	0.012	0.015
16. Private Transport Services	0.048	0.040	0.048	0.051	0.052	0.047
17. Communication Services	0.034	0.045	0.036	0.032	0.030	0.026
18. Education and Training Services	0.014	0.011	0.012	0.014	0.015	0.015
19. Entertainment Services	0.022	0.020	0.022	0.022	0.023	0.024
20. Miscellaneous Goods and Services	0.047	0.032	0.043	0.047	0.051	0.059
All	1.000	1.000	1.000	1.000	1.000	1.000

Notes: For source and sample criteria, see notes to Table I.

Table K. United States: comparison of R-squared and sample size in estimated "restricted" budget elasticities, using standard DEMPATEM and augmented specifications

Category	1980				1997			
	DEMP.	Alt. (1)	Alt. (2)	Alt. (3)	DEMP.	Alt. (1)	Alt. (2)	Alt. (3)
1. Food and bevs	0.263	0.299	0.347	.	0.233	0.276	0.303	.
2. Alcohol bevs	0.087	0.100	0.126	.	0.059	0.064	0.100	.
3. Clothing & shoes	0.076	0.079	0.091	.	0.076	0.080	0.098	.
4. Priv trans gds	0.089	0.093	0.109	.	0.071	0.075	0.081	.
5. Furn & appl	0.025	0.026	0.042	.	0.025	0.028	0.045	.
6. Ent gds	0.063	0.068	0.122	.	0.032	0.037	0.088	.
7. Personal gds	0.218	0.250	0.258	.	0.143	0.177	0.192	.
8. Home energy	0.166	0.230	0.223	.	0.162	0.198	0.226	.
9. Food away	0.115	0.125	0.154	.	0.085	0.089	0.113	.
10. Holiday servs	0.057	0.064	0.102	.	0.072	0.082	0.116	.
11. Housing	--	--	--	--	--	--	--	--
12. HH servs	0.123	0.123	0.183	.	0.202	0.202	0.253	.
13. Health	--	--	--	--	--	--	--	--
14. Personal services	0.044	0.047	0.072	.	0.039	0.041	0.091	.
15. Pub trans servs	0.025	0.034	0.057	.	0.019	0.025	0.071	.
16. Priv trans servs	0.070	0.073	0.085	.	0.047	0.052	0.061	.
17. Comms servs	0.060	0.065	0.086	.	0.079	0.099	0.128	.
18. Ed & training	--	--	--	--	--	--	--	--
19. Ent servs	0.072	0.079	0.126	.	0.046	0.048	0.083	.
20. Misc servs	0.068	0.075	0.107	.	0.069	0.075	0.082	.
All non-durable goods	0.190	0.201	0.288	.	0.193	0.199	0.274	.
All services	0.190	0.201	0.288	.	0.193	0.199	0.274	.
Sample size	5,879	5,879	4,882	5,879	6,444	6,444	6,255	6,444

Notes: See notes to Tables 16 (DEMPATEM specification) and 17 (alternative specifications). Alternative (1) includes an employment-expenditure interaction; alternative (2) includes controls for region, race and ethnicity, and education, and trims the sample of expenditure shares six or more standard deviations above or below the mean; alternative (3) fits the DEMPATEM specification using a Tobit procedure. R-squared not defined for Tobit procedure.

Table 1. United States: weighted-average expenditure shares by "complete" DEMPATEM categories
(Percent of total expenditures; change in percentage points)

	1980	1990	1997	Change 1980- 97
All goods & services (1997 US dollars; change in %)	30,331	31,022	32,709	7.8
Before-tax income	110.5	119.6	121.1	10.5
After-tax income	96.5	108.1	110.9	14.4
All goods and services	100.0	100.0	100.0	0.0
1. Food and non-alcoholic beverages	16.3	13.8	12.4	-3.9
1a. Food	12.9	11.1	10.1	-2.8
1b. Non-alcoholic beverages	3.4	2.7	2.3	-1.1
2. Alcoholic beverages and tobacco	2.9	2.3	1.8	-1.1
2a. Alcoholic beverages	1.6	1.0	0.8	-0.8
2b. Tobacco	1.3	1.3	1.0	-0.2
3. Clothing and footwear	4.6	4.5	3.8	-0.8
3a. Clothing and footwear	4.0	3.9	3.3	-0.7
3b. Accessories	0.6	0.6	0.5	-0.1
4. Private transport goods	11.8	8.8	9.2	-2.6
4a. Durables: cars, bikes & motors	4.8	4.9	5.9	1.1
4b. Fuel	7.0	3.8	3.3	-3.7
5. Furnishing and appliances	3.3	2.9	2.6	-0.7
5a. Durables: furniture & furnishing	2.1	1.9	1.8	-0.3
5b. - Appliances, non-durables	1.2	0.9	0.8	-0.4
- Appliances, durables	1.2	0.9	0.8	-0.4
6. Entertainment goods	2.9	3.2	3.2	0.3
6a. - Books, newspapers	0.7	0.8	1.0	0.3
- Durable: Computer	0.0	0.2	0.5	0.5
6b. - Cd's & tapes	0.9	1.0	0.9	-0.1
- Durables: Audio and video equipment	0.8	0.9	0.7	-0.1
6c. - Toys and hobbies, non-durables	0.8	0.8	0.9	0.0
- Durables: instruments & pets	0.0	0.0	0.0	0.0
6d. - Holiday goods: sport-goods, rental of equipment	0.5	0.5	0.5	0.0
- Durables: boat, caravan & tents	0.5	0.5	0.5	0.0
7. Personal goods	2.8	2.9	2.7	0.0
- Non-durables	2.8	2.8	2.7	0.0
- Durables: hairdryer, electric shaver	0.0	0.0	0.0	0.0
8. Home energy	5.3	4.9	4.7	-0.5
(continued)				

Table 1. (continued)

United States: weighted-average expenditure shares by "complete" DEMPATEM categories
(Percent of total expenditures; change in percentage points)

	1980	1990	1997	Change 1980- 97
9. Food and beverages away from home	3.6	3.6	3.3	-0.3
10. Holiday Services	2.2	2.2	2.0	-0.2
10a. Package tours and travel insurance	.	.	.	.
10b. Holidays in other countries	.	.	.	.
10c. Holidays in the home country	.	.	.	.
11. Housing	22.6	25.4	28.4	5.8
11a. Rent and home related service charges	10.3	12.5	13.6	3.2
11b. Imputed rent for homeowners	10.7	11.4	13.4	2.7
11c. House repairs	1.6	1.4	1.5	-0.1
12. Household services	1.6	1.8	1.6	0.0
12a. Domestic help	0.3	0.5	0.4	0.1
12b. Childcare and babysitting	0.4	0.6	0.6	0.2
12c. Laundry services	0.5	0.5	0.4	-0.1
12d. Repairs	0.3	0.2	0.2	-0.2
13. Health goods and services	4.6	5.7	5.7	1.1
13a. Payment to doctors	3.8	4.6	4.6	0.8
13b. Drugs and other medical goods	0.8	1.1	1.1	0.3
14. Personal services	0.9	1.0	0.9	0.1
15. Public transport services	1.1	1.0	1.0	0.0
16. Private transport services	4.1	4.7	4.8	0.7
16a. Repairs	2.2	2.2	2.0	-0.2
16b. Car insurance, road-tax, license fees	1.9	2.6	2.8	0.9
16c. Driving lessons	.	.	.	.
17. Communication services	2.3	3.2	3.4	1.0
18. Education and training services	1.0	1.2	1.4	0.4
19. Entertainment services	1.2	1.9	2.2	1.1
20. Miscellaneous services	4.9	5.1	4.7	-0.2
20a. Financial and insurance services	3.1	3.2	2.8	-0.3
20b. Contributions	1.4	1.3	1.3	0.0
20c. Other services such as passport fees	0.4	0.5	0.5	0.1
All services	50.0	56.8	59.4	9.4

Notes: Author's analysis of US Consumer Expenditure Surveys for 1980, 1990, and 1997.

Total expenditures include author's estimate of imputed rent for owner-occupied housing.

Top codes differ across years. Nominal values converted to real 1997 dollars using the CPI-U-RS.

Includes only households with (1) at least two quarterly interviews in the five calendar quarters beginning in the first quarter of each year indicated; (2) complete income reporting; and (3) non-negative total expenditures. Sample sizes are: 5,897 in 1980; 6,428 in 1990; and 6,454 in 1997.

Table 2. United States: households with zero and negative expenditures by "complete" DEMPATEM categories
(Percent of total)

	Zero expenditures			Negative expenditures		
	1980	1990	1997	1980	1990	1997
Before-tax income	0.0	0.0	0.0	0.3	0.2	0.2
After-tax income	0.0	0.0	0.0	0.6	0.5	0.4
Total expenditures	0.0	0.0	0.0	0.0	0.0	0.0
1. Food and non-alcoholic beverages	0.2	0.2	0.2	0.0	0.0	0.0
2. Alcoholic beverages and tobacco	19.8	27.9	32.6	0.0	0.0	0.0
3. Clothing and footwear	4.2	4.2	5.8	0.0	0.0	0.0
4. Private transport goods	9.8	8.5	7.9	0.0	0.0	0.0
5. Furnishing and appliances	13.4	15.1	15.8	0.0	0.0	0.0
6. Entertainment goods	5.0	6.0	6.7	0.0	0.0	0.0
7. Personal Goods	0.2	0.1	0.0	0.0	0.0	0.0
8. Home energy	7.6	6.9	5.9	0.0	0.0	0.0
9. Food and beverages away from home	10.3	8.3	7.4	0.0	0.0	0.0
10. Holiday Services	33.6	34.0	36.4	0.0	0.0	0.0
11. Housing	0.4	1.1	1.0	0.0	0.0	0.0
12. Household services	13.3	17.1	22.1	0.0	0.0	0.0
13. Health goods and services	8.2	9.3	9.7	0.7	0.4	0.4
14. Personal services	16.5	12.5	14.0	0.0	0.0	0.0
15. Public transport services	57.1	60.0	61.3	0.0	0.0	0.0
16. Private transport services	12.8	11.9	10.9	0.0	0.0	0.0
17. Communication services	3.4	0.1	0.0	0.0	0.0	0.0
18. Education and training services	71.4	71.2	68.9	0.0	0.0	0.0
19. Entertainment services	19.1	12.3	8.4	0.0	0.0	0.0
20. Miscellaneous goods and services	3.0	4.0	4.4	0.0	0.0	0.0

Notes: For source and sample criteria, see notes to Table 1.

Table 3. United States: households with consumer durables
(Percent of total)

	1980	1990	1997
Car	82.0	81.0	75.1
Microwave oven		74.0	87.7
Refrigerator		99.3	99.4
Freezer		33.7	33.3
Dishwasher		44.3	50.9
Portable dishwasher		5.0	3.6
Garbage disposal		38.1	42.0
Clothes washer		75.0	78.2
Clothes dryer		67.8	74.0
Colour television		94.3	97.4
Computer		15.8	35.3
Stereo system		58.2	66.3
Video cassette recorder		62.1	81.7

Notes: For source and sample criteria, see notes to Table 1. CEX data on consumer-durable ownership not available before 1982. Rates for some durables include a small portion who rent. "Car" excludes light trucks. Sample sizes for cars are same as Table 1; for other durables sample is 6,390 in 1990 and 6,402 for 1997.

Table 4. United States: home-ownership rates by DEMPATEM household types

DEMPATEM type	Characteristics				Home-ownership (%)		
	Marital status	Age reference person	Age youngest child	Number employed			
					1980	1990	1997
All households					63.8	63.2	65.2
1	Single	16-64	None	0	47.2	57.6	34.1
2	Single	16-64	None	1	24.3	33.0	35.6
3	Single	65+	None	0,1	51.5	64.2	67.4
4	Couple	16-64	None	0	83.5	85.8	84.7
5	Couple	16-64	None	1	80.5	85.6	79.6
6	Couple	16-64	None	2+	73.7	75.0	81.6
7	Couple	65+	None	0, 1, 2+	88.1	90.8	92.1
8	Other	16+	None	0, 1, 2+	54.2	55.7	61.9
9	Single	16+	0-17	0	21.4	10.0	15.2
10	Single	16+	0-17	1	47.0	42.5	40.5
11	Couple	16+	0-5	0	28.0	21.9	28.1
12	Couple	16+	0-5	1	72.2	60.3	61.2
13	Couple	16+	0-5	2+	69.6	65.2	72.3
14	Couple	16+	6-17	0	77.3	68.5	76.5
15	Couple	16+	6-17	1	80.9	72.2	73.8
16	Couple	16+	6-17	2+	86.7	84.7	81.8
17	Other	16+	0-17	0, 1, 2+	43.0	44.4	36.3

Notes: For source and sample criteria, see notes to Table 1.

Table 5. United States: average annual expenditure on housing, by housing tenure
(1997 US\$)

Expenditure category	All		Owners		Renters	
	Owner	Reg.	Owner	Reg.	Owner	Reg.
(a) 1980						
I I. Housing	3,001	6,127	2,514	7,251	3,858	4,147
I I a. Rent & related service charges	2,405	2,405	1,629	1,629	3,773	3,773
I I b. Rental equiv. owner-occupied		3,127		4,737		289
I I c. House repairs & maintenance	596	596	885	885	85	85
(b) 1990						
I I. Housing	9,168	6,961	11,599	8,070	4,990	5,054
I I a. Rent & related service charges	3,081	3,081	2,032	2,032	4,884	4,884
I I b. Rental equiv. owner-occupied	5,550	3,343	8,755	5,226	41	105
I I c. House repairs & maintenance	537	537	812	812	66	66
(c) 1997						
I I. Housing	10,531	8,378	13,103	9,648	5,709	5,997
I I a. Rent & related service charges	3,545	3,545	2,491	2,491	5,521	5,521
I I b. Rental equiv. owner-occupied	6,391	4,238	9,764	6,309	67	355
I I c. House repairs & maintenance	595	595	848	848	120	120

Notes: For sources and sample criteria, see notes to Table 1. The first column for each ownership type shows expenditures using owner-estimated rental equivalence for owner-occupied housing; the second shows expenditures using author's housing-characteristics -regression-based estimates of rental equivalence. Owner estimates are not available for 1980. Regression procedure allows estimation of imputed rent for small share of renters who receive accommodation as part of total compensation.

Table 6. United States: expenditure on housing, 1997

(a) Billions 1997 US\$	
Total national expenditures	810.5
Government subsidies	19.0
Private	791.5
(b) Per capita 1997 US\$	
Total per capita expenditures	2,968.9
Government subsidies	69.6
Private	2,899.3
(c) As share of total housing (%)	
Total national expenditures	100.0
Government subsidies	2.3
Private	97.7
(d) As share of GDP (%)	
Total national expenditures	9.7
Government subsidies	0.2
Private	9.5

Notes: Analysis of National Income and Product Accounts, 1997. Total national expenditures are personal consumption expenditures for housing (NIPA Table 2.6, line 48). Government subsidies are sum of federal, state, and local subsidies less current surplus of government enterprises for "Housing and community services" (NIPA Table 3.17, line 87).

Table 7. United States: expenditure on health care, 1997

(a) Billions 1997 US\$	
Total national expenditures	1,091.2
Private	588.8
Public	502.4
Federal	358.8
State and Local	143.6
(b) Per capita 1997 US\$	
Total per capita expenditures	4,001.0
Private	2,159.0
Public	1,842.0
Federal	1,316.0
State and Local	526.0
(c) As share of total health (%)	
Total national expenditures	100.0
Private	54.0
Public	46.0
Federal	32.9
State and Local	13.2
(d) As share of GDP (%)	
Total national expenditures	13.1
Private	7.1
Public	6.0
Federal	4.3
State and Local	1.7

Source: Analysis of Health Care Financing Administration,
<http://www.hcfa.gov/stats/nhe-oact/tables/t1.htm>

Table 8. Health care expenditures as a share of GDP (%), 1998

	Total	Public	Private	Share private (% total)
Australia	8.5	5.9	2.6	30.6
Austria	8.2	5.8	2.4	29.3
Belgium	8.8	7.9	0.9	10.2
Canada	9.5	6.6	2.9	30.5
Denmark	8.3	6.8	1.5	18.1
Finland	6.9	5.3	1.6	23.2
France	9.5	7.2	2.3	24.2
Germany	10.6	7.9	2.7	25.5
Ireland	6.4	4.8	1.6	25.0
Italy	8.4	5.6	2.8	33.3
Japan	7.6	6.0	1.6	21.1
Netherlands	8.6	6.0	2.6	30.2
New Zealand	8.1	6.2	1.9	23.5
Norway	8.6	7.1	1.5	17.4
Portugal	7.8	5.2	2.6	33.3
Spain	7.1	5.4	1.7	23.9
Sweden	8.4	7.0	1.4	16.7
Switzerland	10.4	7.7	2.7	26.0
UK	6.7	5.6	1.1	16.4
USA	13.6	6.1	7.5	55.1

Source: Analysis by The Clearinghouse on International Development in Child, Youth and Family Policies of OECD data, Table 2.61, <http://www.childpolicyintl.org>.

Table 9. United States: expenditure on education, 1997

(a) Billions 1997 US\$	
Total national expenditures	596.2
Private	115.2
Elementary & secondary	27.1
College & university	88.1
Public	481.0
Elementary & secondary	334.3
College & university	146.7
(b) Per capita 1997 US\$	
Total per capita expenditures	2,184.0
Private	422.0
Elementary & secondary	99.3
College & university	322.7
Public	1,762.0
Elementary & secondary	1,224.6
College & university	537.4
(c) As share of total education (%)	
Total national expenditures	100.0
Private	19.3
Elementary & secondary	4.5
College & university	14.8
Public	80.7
Elementary & secondary	56.1
College & university	24.6
(d) As share of GDP (%)	
Total national expenditures	7.2
Private	1.4
Elementary & secondary	0.3
College & university	1.1
Public	5.8
Elementary & secondary	4.0
College & university	1.8

Source: Analysis of National Center for Education
Statistics, Digest of Education Statistics 2000, Table 32.

Table 10. Education expenditures as a share of GDP (%), 1998

	Total	Public	Private	Share private (% total)
Australia	5.5	4.3	1.1	20.6
Austria	6.4	6.0	0.4	6.0
Belgium	5.0	5.0		0.0
Canada	6.2	5.5	0.7	11.0
Denmark	7.2	6.8	0.4	5.0
Finland	5.7	5.7		0.0
France	6.2	5.9	0.4	5.8
Germany	5.5	4.4	1.2	21.6
Ireland	4.7	4.3	0.4	8.6
Italy	5.0	4.8	0.2	3.9
Japan	4.7	3.6	1.2	24.8
Netherlands	4.6	4.5	0.1	2.6
New Zealand		6.0		
Norway	6.9	6.8	0.1	1.9
Portugal	5.7	5.6	0.1	1.5
Spain	5.3	4.4	0.9	16.1
Sweden	6.8	6.6	0.2	2.7
Switzerland	5.9	5.4	0.5	8.1
UK	4.9	4.6	0.3	5.6
USA	6.4	4.8	1.6	25.0

Source: OECD, *Education at a Glance 2001*, Chapter B, Indicators B1 and B3,
<http://www1.oecd.org/els/education/ei/EAG/chB.htm>. See original for detailed notes.

Table 11. United States: weighted-average nominal expenditure shares by "restricted" DEMPATEM categories

	1980	1990	1997	Change 1980-97
Average level (1997 US dollars; % change)				
Durables	3,894	4,163	4,575	17.5
Housing	6,127	6,961	8,378	36.7
Health	1,343	1,701	1,749	30.2
Education	346	433	486	40.7
Expenditures excluding above	18,621	17,764	17,521	-5.9
Total expenditures	30,331	31,022	32,709	7.8
Total before-tax income	33,521	37,104	39,599	18.1
Share of DEMPATEM "restricted" expenditures (% total expenditures; percentage -point change)				
1. Food and non-alcoholic beverages	26.3	23.7	22.8	-3.5
2. Alcoholic beverages and tobacco	4.5	3.8	3.2	-1.3
3. Clothing and footwear	6.4	6.5	5.9	-0.5
4. Private transport goods	11.0	6.5	7.0	-4.0
5. Furnishing and appliances	1.0	1.2	1.1	0.1
6. Entertainment goods	2.7	2.7	2.9	0.2
7. Personal goods	4.5	4.9	5.0	0.5
8. Home energy	8.7	8.7	8.9	0.2
9. Food and beverages away from home	5.7	6.0	5.9	0.2
10. Holiday services	3.4	3.7	3.5	0.1
12. Household services	2.6	3.0	2.9	0.3
14. Personal services	1.4	1.7	1.7	0.3
15. Public transport services	1.7	1.6	1.8	0.1
16. Private transport services	6.5	8.1	8.7	2.2
17. Communication services	3.8	5.6	6.1	2.3
19. Entertainment services	1.9	3.2	4.1	2.2
20. Miscellaneous goods and services	8.0	8.7	8.6	0.6
All	100.0	100.0	100.0	0.0
Non-durable goods (categories 1-8)	65.0	58.2	56.7	-8.3
Services (categories 9-20)	35.0	41.8	43.3	8.3
All	100.0	100.0	100.0	0.0

Notes: DEMPATEM "restricted" expenditures exclude housing, health, education, and durables (rows 1-4 above). Item 5 in the second panel ("Furnishings and appliances") contains a non-zero, but small amount of non-durable expenditures. See also notes to Table 1.

Table 12. United States: households with zero and negative expenditures by "restricted" DEMPATTEM categories
(Percent of total)

	Zero expenditures			Negative expenditures		
	1980	1990	1997	1980	1990	1997
Before-tax income	0.0	0.0	0.0	0.3	0.2	0.2
After-tax income	0.0	0.0	0.0	0.6	0.5	0.4
Total expenditures	0.0	0.0	0.0	0.0	0.0	0.0
1. Food and non-alcoholic beverages	0.2	0.2	0.2	0.0	0.0	0.0
2. Alcoholic beverages and tobacco	19.8	27.9	32.6	0.0	0.0	0.0
3. Clothing and Footwear	4.7	4.6	6.0	0.0	0.0	0.0
4. Private Transport Goods	10.1	8.7	8.2	0.0	0.0	0.0
5. Furnishing and Appliances	27.4	29.2	32.4	0.0	0.0	0.0
6. Entertainment Goods	5.9	7.0	8.1	0.0	0.0	0.0
7. Personal Goods	0.2	0.1	0.0	0.0	0.0	0.0
8. Home Energy	7.6	6.9	5.9	0.0	0.0	0.0
9. Food and beverages away from home	10.3	8.3	7.4	0.0	0.0	0.0
10. Holiday Services	33.6	34.0	36.4	0.0	0.0	0.0
12. Household Services	13.3	17.1	22.1	0.0	0.0	0.0
14. Personal Services	16.5	12.5	14.0	0.0	0.0	0.0
15. Public Transport Services	57.1	60.0	61.3	0.0	0.0	0.0
16. Private Transport Services	12.8	11.9	10.9	0.0	0.0	0.0
17. Communication Services	3.4	0.1	0.0	0.0	0.0	0.0
19. Entertainment Services	19.1	12.3	8.4	0.0	0.0	0.0
20. Miscellaneous goods and services	3.0	4.0	4.4	0.0	0.0	0.0

Notes: For source and sample criteria, see notes to Tables 1 and 12.

Table 13. United States: comparison of expenditures in selected DEMPATEM categories with national income and product accounts, 1997
(Percent of total expenditures, in 1997 prices)

	Complete		Restricted	
	DEMPATEM	NIPA	DEMPATEM	NIPA
1. Food and non-alcoholic beverages	10.6	7.1	19.7	13.2
2. Alcoholic beverages and tobacco	1.6	2.7	2.9	5.1
2a. Alcoholic beverages	0.8	1.8	1.4	3.4
2b. Tobacco	0.8	0.9	1.5	1.7
3. Clothing and footwear	4.0	6.3	7.5	10.3
4. Private transport goods	12.7	7.1	5.7	4.3
4a. Durables: cars, bikes & motors	9.6	4.8	0.0	0.0
4b. Fuel	3.1	2.3	5.7	4.3
5. Furnishing and appliances	3.1	4.5	4.1	2.8
5b. - Appliances, durables	0.9	0.6	0.0	0.0
6. Entertainment goods	3.8	4.5	3.1	3.3
7. Personal goods	2.5	1.3	3.0	2.4
8. Home energy	4.1	3.4	7.6	6.3
9. Food & beverages away from home	3.4	5.7	6.3	10.6
10. Holiday Services	2.5	n.a.	4.6	n.a.
11. Housing	25.6	14.7	0.0	0.0
11b. Imputed rent for homeowners	13.0	10.6	0.0	0.0
12. Household services	1.9	1.0	3.5	1.8
13. Health goods and services	5.3	17.8	0.0	0.0
14. Personal services	0.9	0.5	1.6	0.9
15. Public transport services	1.2	0.9	2.1	1.6
16. Private transport services	4.9	3.4	9.1	6.3
17. Communication services	2.9	1.9	5.4	3.5
18. Education and training services	1.5	2.4	0.0	0.0
19. Entertainment services	2.3	3.7	4.2	6.9
20. Miscellaneous services	5.3	11.5	9.8	21.4
Food & related categories 1+2+9	15.6	15.6	28.9	28.9
Foreign travel and other, net	--	-0.4	--	-0.7
All services	57.6	63.4	46.5	53.1
Total (1-20)	100.0	100.0	100.0	100.0

Notes: NIPA expenditure data from Bureau of Economic Affairs, National Income and Product Accounts, Table 2.4., <http://www.bea.doc.gov/bea/dn1.htm>, published March 28, 2003.

Table 14. United States: comparison of weighted-average current- and constant-price expenditure shares for "restricted" DEMPATEM categories
(Percent of total expenditures)

Expenditure category	Constant 1980 prices			Current - constant price		
	1980	1990	1997	1980	1990	1997
1. Food & non-alcoholic beverages	26.3	25.0	23.7	0.0	-1.2	-0.9
2. Alcoholic beverages and tobacco	4.5	3.8	3.0	0.0	0.1	0.2
3. Clothing and footwear	6.4	7.8	8.0	0.0	-1.3	-2.1
4. Private transport goods	11.0	7.0	7.7	0.0	-0.5	-0.7
5. Furnishing and appliances	1.0	1.5	1.6	0.0	-0.3	-0.5
6. Entertainment goods	2.7	2.9	3.1	0.0	-0.2	-0.3
7. Personal Goods	4.5	4.8	5.1	0.0	0.1	-0.2
8. Home energy	8.7	9.0	9.5	0.0	-0.3	-0.6
9. Food & beverages away from home	5.7	5.9	5.9	0.0	0.1	0.0
10. Holiday Services	3.4	3.1	2.6	0.0	0.6	1.0
11. Housing	--	--	--	--	--	--
12. Household services	2.6	3.0	2.7	0.0	0.0	0.1
13. Health goods and services	--	--	--	--	--	--
14. Personal services	1.4	1.7	1.7	0.0	0.0	0.1
15. Public transport services	1.7	1.3	1.3	0.0	0.4	0.5
16. Private transport services	6.5	7.2	7.3	0.0	1.0	1.4
17. Communication services	3.8	5.9	7.1	0.0	-0.3	-1.0
18. Education and training services	--	--	--	--	--	--
19. Entertainment services	1.9	2.9	3.4	0.0	0.3	0.6
20. Miscellaneous goods and services	8.0	7.3	6.2	0.0	1.5	2.3
Nondurable goods (Categories 1-8)	65.0	61.8	61.8	0.0	-3.6	-5.1
Services (Categories 9-20)	35.0	38.2	38.2	0.0	3.6	5.1

Notes: For source and sample criteria, see notes to Table 1. Total expenditures exclude expenditures on housing, health, education, and durables. Real expenditures deflated using corresponding, category-specific consumer price index from various issues of BLS, CPI Detailed Report.

Table I5A. United States: weighted-average current-price "restricted" expenditure shares by quintile of per-capita household expenditure

	1980					
		Quintile				
	All	1	2	3	4	5
<i>(a) Household characteristics</i>						
No job (% of all)	5.0	10.1	3.9	3.2	5.0	2.8
One job (% of all)	36.7	34.3	31.5	31.6	31.7	56.5
Two jobs (% of all)	44.6	35.2	48.1	51.4	53.1	33.7
Retired, no earners (% of all)	13.7	20.4	16.5	13.8	10.1	7.0
Average number persons	2.73	3.65	3.14	2.76	2.29	1.69
Average number children	0.80	1.61	1.11	0.72	0.37	0.12
Average age reference person	46.3	47.9	46.8	46.7	46.2	43.5
Average after-tax income (1997\$)	29,279	17,849	26,148	31,439	33,687	38,225
Average "restricted" expenditures (1997\$)	18,621	10,761	15,710	18,779	21,473	27,414
<i>(b) Share of expenditures in total expenditures (DEMPATEM "restricted" definitions)</i>						
Goods	0.650	0.750	0.692	0.651	0.606	0.536
1. Food and non-alcoholic beverages	0.263	0.367	0.295	0.257	0.217	0.165
2. Alcoholic beverages and tobacco	0.045	0.040	0.040	0.044	0.047	0.056
3. Clothing and Footwear	0.064	0.054	0.061	0.065	0.068	0.071
4. Private Transport Goods	0.110	0.096	0.116	0.115	0.119	0.105
5. Furnishing and Appliances	0.010	0.006	0.008	0.010	0.011	0.014
6. Entertainment Goods	0.027	0.022	0.027	0.028	0.028	0.028
7. Personal Goods	0.045	0.057	0.046	0.042	0.041	0.038
8. Home Energy	0.087	0.109	0.099	0.090	0.075	0.059
Services	0.350	0.250	0.308	0.349	0.394	0.464
9. Food and beverages away from home	0.057	0.034	0.046	0.053	0.067	0.088
10. Holiday Services	0.034	0.012	0.022	0.030	0.044	0.066
12. Household Services	0.026	0.021	0.025	0.026	0.025	0.033
14. Personal Services	0.014	0.012	0.014	0.016	0.015	0.013
15. Public Transport Services	0.017	0.012	0.011	0.014	0.018	0.030
16. Private Transport Services	0.065	0.041	0.062	0.071	0.081	0.072
17. Communication Services	0.038	0.047	0.038	0.036	0.035	0.036
19. Entertainment Services	0.019	0.011	0.017	0.020	0.021	0.025
20. Miscellaneous Goods and Services	0.080	0.059	0.073	0.082	0.087	0.101
All	1.000	1.000	1.000	1.000	1.000	1.000
(continued)						

Table 15A. (continued) United States: weighted-average current-price "restricted" expenditure shares by quintile of per-capita household expenditure

	1990					
	All	Quintile				
		1	2	3	4	5
<i>(a) Household characteristics</i>						
No job (% of all)	4.9	11.9	3.8	3.4	3.2	2.8
One job (% of all)	36.9	35.3	29.6	31.9	36.7	51.8
Two jobs (% of all)	43.3	37.2	48.7	48.7	45.8	34.7
Retired, no earners (% of all)	15.0	15.6	17.9	16.0	14.4	10.8
Average number persons	2.52	3.51	2.91	2.43	2.12	1.66
Average number children	0.67	1.51	0.93	0.52	0.32	0.13
Average age reference person	47.3	45.5	48.2	47.8	48.2	46.8
Average after-tax income (1997\$)	33,533	18,629	28,417	32,899	38,802	48,459
Average "restricted" expenditures (1997\$)	17,764	10,145	14,274	16,468	19,840	28,023
<i>(b) Share of expenditures in total expenditures (DEMPATEM "restricted" definitions)</i>						
Goods	0.582	0.698	0.625	0.582	0.543	0.465
1. Food and non-alcoholic beverages	0.237	0.333	0.270	0.235	0.202	0.152
2. Alcoholic beverages and tobacco	0.038	0.039	0.035	0.040	0.038	0.039
3. Clothing and Footwear	0.065	0.061	0.058	0.062	0.068	0.077
4. Private Transport Goods	0.065	0.065	0.071	0.072	0.067	0.051
5. Furnishing and Appliances	0.012	0.006	0.010	0.010	0.014	0.020
6. Entertainment Goods	0.027	0.022	0.027	0.027	0.031	0.030
7. Personal Goods	0.049	0.066	0.052	0.047	0.043	0.038
8. Home Energy	0.087	0.106	0.102	0.089	0.080	0.058
Services	0.418	0.302	0.375	0.418	0.457	0.535
9. Food and beverages away from home	0.060	0.041	0.051	0.059	0.066	0.085
10. Holiday Services	0.037	0.014	0.024	0.033	0.046	0.068
12. Household Services	0.030	0.022	0.029	0.032	0.029	0.038
14. Personal Services	0.017	0.017	0.017	0.018	0.017	0.015
15. Public Transport Services	0.016	0.011	0.011	0.015	0.014	0.031
16. Private Transport Services	0.081	0.051	0.076	0.087	0.100	0.091
17. Communication Services	0.056	0.067	0.059	0.057	0.052	0.045
19. Entertainment Services	0.032	0.023	0.030	0.033	0.035	0.040
20. Miscellaneous Goods and Services	0.087	0.055	0.077	0.084	0.098	0.122
All	1.000	1.000	1.000	1.000	1.000	1.000
(continued)						

Table 15A. (continued) United States: weighted-average current-price "restricted" expenditure shares by quintile of per-capita household expenditure

	1997					
	All	Quintile				
		1	2	3	4	5
<i>(a) Household characteristics</i>						
No job (% of all)	5.0	10.8	5.1	3.3	2.6	3.4
One job (% of all)	37.3	36.9	30.0	28.7	38.3	53.2
Two jobs (% of all)	42.5	39.6	46.2	48.8	44.7	32.3
Retired, no earners (% of all)	15.3	12.7	18.6	19.2	14.3	11.1
Average number persons	2.54	3.62	2.88	2.48	2.07	1.67
Average number children	0.70	1.57	0.94	0.58	0.33	0.14
Average age reference person	48.1	44.5	48.4	50.1	48.4	48.6
Average after-tax income (1997\$)	36,282	20,478	28,844	35,448	41,486	54,740
Average "restricted" expenditures (1997\$)	17,521	10,013	13,754	16,548	19,414	27,741
<i>(b) Share of expenditures in total expenditures (DEMPATEM "restricted" definitions)</i>						
Goods	0.567	0.678	0.603	0.566	0.529	0.462
1. Food and non-alcoholic beverages	0.228	0.325	0.256	0.224	0.192	0.146
2. Alcoholic beverages and tobacco	0.032	0.031	0.030	0.031	0.036	0.032
3. Clothing and Footwear	0.059	0.056	0.054	0.057	0.061	0.066
4. Private Transport Goods	0.070	0.065	0.070	0.074	0.074	0.067
5. Furnishing and Appliances	0.011	0.006	0.008	0.010	0.012	0.017
6. Entertainment Goods	0.029	0.023	0.027	0.029	0.032	0.034
7. Personal Goods	0.050	0.062	0.052	0.048	0.045	0.041
8. Home Energy	0.089	0.110	0.105	0.093	0.078	0.060
Services	0.433	0.322	0.397	0.434	0.471	0.538
9. Food and beverages away from home	0.059	0.043	0.053	0.056	0.065	0.079
10. Holiday Services	0.035	0.012	0.022	0.033	0.043	0.066
12. Household Services	0.029	0.021	0.027	0.027	0.031	0.036
14. Personal Services	0.017	0.016	0.018	0.018	0.018	0.015
15. Public Transport Services	0.018	0.013	0.010	0.014	0.021	0.032
16. Private Transport Services	0.087	0.060	0.084	0.096	0.100	0.094
17. Communication Services	0.061	0.075	0.065	0.061	0.057	0.051
19. Entertainment Services	0.041	0.032	0.039	0.040	0.044	0.047
20. Miscellaneous Goods and Services	0.086	0.050	0.079	0.089	0.093	0.117
All	1.000	1.000	1.000	1.000	1.000	1.000

Notes: For source and sample criteria, see notes to Tables 1 and 12.

Table 15B. United States: weighted-average constant-1997-price "restricted" expenditure shares by quintile of per-capita household expenditure

	1980					
	All	Quintile				
		1	2	3	4	5
<i>(a) Household characteristics</i>						
No job (% of all)	5.0	10.5	3.8	3.2	4.9	2.6
One job (% of all)	36.7	33.5	32.5	31.8	31.4	56.4
Two jobs (% of all)	44.6	35.6	46.4	52.3	53.2	34.0
Retired, no earners (% of all)	13.7	20.3	17.3	12.7	10.5	7.1
Average number persons	2.73	3.66	3.09	2.78	2.31	1.70
Average number children	0.80	1.61	1.08	0.75	0.38	0.13
Average age reference person	46.3	48.0	46.9	46.4	46.5	43.4
Average after-tax income (1997\$)	29,279	17,893	25,364	31,756	33,613	38,628
Average "restricted" expenditures (1997\$)	19,132	10,574	15,389	19,173	22,280	29,348
<i>(b) Share of expenditures in total expenditures (DEMPATEM "restricted" definitions)</i>						
Goods	0.589	0.714	0.642	0.586	0.535	0.454
1. Food and non-alcoholic beverages	0.253	0.362	0.291	0.245	0.206	0.148
2. Alcoholic beverages and tobacco	0.048	0.042	0.044	0.047	0.049	0.057
3. Clothing and Footwear	0.058	0.051	0.056	0.059	0.061	0.062
4. Private Transport Goods	0.075	0.071	0.080	0.077	0.079	0.066
5. Furnishing and Appliances	0.006	0.004	0.006	0.006	0.008	0.009
6. Entertainment Goods	0.024	0.021	0.025	0.026	0.025	0.025
7. Personal Goods	0.043	0.057	0.045	0.041	0.039	0.035
8. Home Energy	0.082	0.107	0.095	0.084	0.069	0.052
Services	0.411	0.286	0.358	0.414	0.465	0.546
9. Food and beverages away from home	0.057	0.034	0.047	0.054	0.067	0.085
10. Holiday Services	0.046	0.016	0.028	0.043	0.058	0.092
12. Household Services	0.027	0.022	0.026	0.028	0.026	0.033
14. Personal Services	0.015	0.013	0.015	0.016	0.016	0.013
15. Public Transport Services	0.023	0.015	0.016	0.019	0.024	0.042
16. Private Transport Services	0.079	0.051	0.074	0.087	0.097	0.084
17. Communication Services	0.033	0.042	0.034	0.032	0.030	0.029
19. Entertainment Services	0.022	0.013	0.019	0.025	0.024	0.030
20. Miscellaneous Goods and Services	0.110	0.080	0.099	0.111	0.124	0.138
All	1.000	1.000	1.000	1.000	1.000	1.000
(continued)						

Table 15B. (continued) United States: weighted-average constant-1997-price "restricted" expenditure shares by quintile of per-capita household expenditure

	1990					
	All	Quintile				
		1	2	3	4	5
<i>(a) Household characteristics</i>						
No job (% of all)	4.9	11.9	4.0	3.1	3.3	2.8
One job (% of all)	36.9	35.7	30.0	31.7	36.2	51.7
Two jobs (% of all)	43.3	36.6	48.2	49.4	46.3	34.6
Retired, no earners (% of all)	15.0	15.8	17.9	15.8	14.3	10.9
Average number persons	2.52	3.49	2.89	2.45	2.13	1.67
Average number children	0.67	1.50	0.92	0.53	0.33	0.14
Average age reference person	47.3	45.5	48.2	47.7	48.3	46.7
Average after-tax income (1997\$)	33,533	18,433	28,073	33,147	39,138	48,345
Average "restricted" expenditures (1997\$)	18,091	10,094	14,274	16,834	20,314	28,841
<i>(b) Share of expenditures in total expenditures (DEMPATEM "restricted" definitions)</i>						
Goods	0.565	0.690	0.613	0.564	0.522	0.441
1. Food and non-alcoholic beverages	0.239	0.338	0.273	0.235	0.201	0.150
2. Alcoholic beverages and tobacco	0.039	0.040	0.037	0.041	0.039	0.040
3. Clothing and Footwear	0.057	0.054	0.051	0.055	0.059	0.066
4. Private Transport Goods	0.064	0.064	0.069	0.070	0.064	0.049
5. Furnishing and Appliances	0.010	0.006	0.008	0.009	0.012	0.017
6. Entertainment Goods	0.026	0.022	0.026	0.026	0.029	0.029
7. Personal Goods	0.046	0.063	0.049	0.044	0.040	0.035
8. Home Energy	0.084	0.104	0.100	0.086	0.076	0.056
Services	0.435	0.310	0.387	0.436	0.478	0.559
9. Food and beverages away from home	0.059	0.040	0.050	0.057	0.064	0.081
10. Holiday Services	0.042	0.016	0.027	0.037	0.053	0.077
12. Household Services	0.031	0.022	0.031	0.033	0.029	0.038
14. Personal Services	0.017	0.017	0.017	0.018	0.017	0.015
15. Public Transport Services	0.017	0.012	0.012	0.016	0.015	0.032
16. Private Transport Services	0.085	0.054	0.078	0.092	0.104	0.095
17. Communication Services	0.050	0.062	0.054	0.050	0.046	0.040
19. Entertainment Services	0.034	0.025	0.031	0.035	0.037	0.042
20. Miscellaneous Goods and Services	0.099	0.061	0.086	0.096	0.112	0.138
All	1.000	1.000	1.000	1.000	1.000	1.000
(continued)						

Table 15B. (continued) United States: weighted-average constant-1997-price "restricted" expenditure shares by quintile of per-capita household expenditure

	1997					
	All	Quintile				
		1	2	3	4	5
<i>(a) Household characteristics</i>						
No job (% of all)	5.0	10.8	5.1	3.3	2.6	3.4
One job (% of all)	37.3	36.9	30.0	28.7	38.3	53.2
Two jobs (% of all)	42.5	39.6	46.2	48.8	44.7	32.3
Retired, no earners (% of all)	15.3	12.7	18.6	19.2	14.3	11.1
Average number persons	2.54	3.62	2.88	2.48	2.07	1.67
Average number children	0.70	1.57	0.94	0.58	0.33	0.14
Average age reference person	48.1	44.5	48.4	50.1	48.4	48.6
Average after-tax income (1997\$)	36,282	20,478	28,844	35,448	41,486	54,740
Average "restricted" expenditures (1997\$)	17,521	10,013	13,754	16,548	19,414	27,741
<i>(b) Share of expenditures in total expenditures (DEMPATEM "restricted" definitions)</i>						
Goods	0.567	0.678	0.603	0.566	0.529	0.462
1. Food and non-alcoholic beverages	0.228	0.325	0.256	0.224	0.192	0.146
2. Alcoholic beverages and tobacco	0.032	0.031	0.030	0.031	0.036	0.032
3. Clothing and Footwear	0.059	0.056	0.054	0.057	0.061	0.066
4. Private Transport Goods	0.070	0.065	0.070	0.074	0.074	0.067
5. Furnishing and Appliances	0.011	0.006	0.008	0.010	0.012	0.017
6. Entertainment Goods	0.029	0.023	0.027	0.029	0.032	0.034
7. Personal Goods	0.050	0.062	0.052	0.048	0.045	0.041
8. Home Energy	0.089	0.110	0.105	0.093	0.078	0.060
Services	0.433	0.322	0.397	0.434	0.471	0.538
9. Food and beverages away from home	0.059	0.043	0.053	0.056	0.065	0.079
10. Holiday Services	0.035	0.012	0.022	0.033	0.043	0.066
12. Household Services	0.029	0.021	0.027	0.027	0.031	0.036
14. Personal Services	0.017	0.016	0.018	0.018	0.018	0.015
15. Public Transport Services	0.018	0.013	0.010	0.014	0.021	0.032
16. Private Transport Services	0.087	0.060	0.084	0.096	0.100	0.094
17. Communication Services	0.061	0.075	0.065	0.061	0.057	0.051
19. Entertainment Services	0.041	0.032	0.039	0.040	0.044	0.047
20. Miscellaneous Goods and Services	0.086	0.050	0.079	0.089	0.093	0.117
All	1.000	1.000	1.000	1.000	1.000	1.000

Notes: For source and sample criteria, see notes to Tables 1 and 12.

Table 16. United States: estimated "restricted" budget elasticities, using consistent DEMPATEM method

Category	1980	1990	1997
1. Food and bevs	0.49	0.45	0.43
2. Alcohol bevs	0.74	0.48	0.47
3. Clothing & shoes	1.12	1.21	1.20
4. Priv trans gds	1.01	0.71	1.05
5. Furn & appl	1.76	1.95	1.80
6. Ent gds	1.40	1.45	1.39
7. Personal gds	0.78	0.87	0.67
8. Home energy	0.78	0.64	0.61
9. Food away	1.24	1.37	1.34
10. Holiday servs	1.81	1.83	2.04
11. Housing			
12. HH servs	1.61	1.80	1.79
13. Health			
14. Personal services	1.14	1.06	1.23
15. Pub trans servs	1.40	1.59	1.63
16. Priv trans servs	1.46	1.33	1.27
17. Comms servs	0.68	0.55	0.65
18. Ed & training			
19. Ent servs	1.71	1.54	1.47
20. Misc servs	1.64	1.72	1.57
Non-durable goods	0.77	0.71	0.71
Services	1.42	1.41	1.38

Notes: For source and sample criteria, see notes to Table 1. Sample reduced relative to Tables 1 and 12 because observations with negative total income have been excluded here. For final sample sizes and R-squareds of underlying regressions, see Appendix Table K.

Table 17. United States: alternative estimates of "restricted" budget elasticities

Category	Emp.-exp. interaction		Trimmed sample		Tobit estimation	
	1980	1997	1980	1997	1980	1997
1. Food and bevs	0.40	0.33	0.51	0.45	0.49	0.43
2. Alcohol bevs	0.94	0.62	0.91	0.61	0.85	0.69
3. Clothing & shoes	1.25	1.33	1.04	1.22	1.15	1.23
4. Priv trans gds	1.02	1.09	1.15	1.09	1.10	1.13
5. Furn & appl	1.76	1.90	1.51	1.56	2.38	2.44
6. Ent gds	1.54	1.44	1.20	1.18	1.50	1.50
7. Personal gds	0.62	0.64	0.67	0.67	0.78	0.67
8. Home energy	0.44	0.36	0.84	0.69	0.88	0.65
9. Food away	1.55	1.50	1.14	1.33	1.44	1.42
10. Holiday servs	2.00	2.28	1.57	1.84	2.69	2.85
11. Housing						
12. HH servs	1.77	1.82	1.33	1.69	1.81	2.28
13. Health						
14. Personal services	1.33	1.33	1.36	1.30	1.38	1.40
15. Pub trans servs	1.91	1.91	1.23	1.54	1.97	3.03
16. Priv trans servs	1.49	1.33	1.52	1.23	1.65	1.39
17. Comms servs	0.70	0.60	0.65	0.69	0.72	0.65
18. Ed & training						
19. Ent servs	1.88	1.48	1.49	1.34	2.11	1.57
20. Misc servs	1.56	1.56	1.72	1.61	1.70	1.63
Non-durable goods	0.71	0.66	0.80	0.73	0.77	0.71
Services	1.53	1.44	1.38	1.35	1.42	1.38

Notes: For source and basic sample, see notes to Table 12. Regressions in columns (1) and (2) use the basic DEMPATEM specification plus a binary variable for house ownership and an interaction of the total expenditures and "all adults employed" variable. Regressions in (3) and (4) use the basic DEMPATEM specification but: exclude all observations where any of the restricted expenditure share was more than six standard deviations above or below the mean expenditure share for that category; and include additional controls for education, region, and race. Missing values for some of the additional regressors lowered the sample slightly relative to Table 16. Regressions in (5) and (6) use the same sample as Table 16 to Table 16, but estimates are based on a Tobit specification, not ordinary least squares. For final sample sizes and R-squareds of underlying regressions, see Appendix Table K. All equations use expenditure shares defined using current prices.

Table 18. United States: DEMPATEM decomposition of changes in current-price budget shares, 1980-97 (Percent)

Category	Total	Demo- graphics	Employ- ment	Total expenditures		"Baumol" effect	Residual
				Level	Ineq.		
1. Food and bevs	-3.5	-0.6	0.1	0.8	0.0	-2.6	-1.2
2. Alcohol bevs	-1.3	0.0	0.0	0.1	0.0	-1.5	0.1
3. Clothing & shoes	-0.5	-0.1	0.0	0.0	0.0	1.6	-1.9
4. Priv trans gds	-4.0	-0.2	0.0	0.0	0.0	-3.3	-0.4
5. Furn & appl	0.1	0.0	0.0	0.0	0.0	0.6	-0.5
6. Ent gds	0.2	0.0	0.0	-0.1	0.0	0.5	-0.2
7. Personal gds	0.5	-0.1	0.0	0.1	0.0	0.6	-0.2
8. Home energy	0.2	0.1	0.0	0.1	0.0	0.8	-0.8
9. Food away	0.2	0.1	0.0	-0.1	0.0	0.2	0.0
10. Holiday servs	0.1	0.1	0.0	-0.2	0.0	-0.8	1.0
12. HH servs	0.3	0.2	0.0	-0.1	0.0	0.1	0.1
14. Personal services	0.3	0.0	0.0	0.0	0.0	0.3	0.0
15. Pub trans servs	0.1	0.1	0.0	0.0	0.0	-0.4	0.5
16. Priv trans servs	2.2	0.0	0.0	-0.2	0.0	0.8	1.6
17. Comms servs	2.3	0.0	0.0	0.1	0.0	3.3	-1.0
19. Ent servs	2.2	0.0	0.0	-0.1	0.0	1.6	0.7
20. Misc servs	0.6	0.3	0.0	-0.3	0.0	-1.8	2.3
Non-durable goods	-8.3	-0.8	0.1	0.9	0.0	-3.2	-5.1
Services	8.3	0.8	-0.1	-0.9	0.0	3.2	5.1

Notes: For source and sample criteria, see notes to Table 1. Decomposition based on regressions used to estimate elasticities in Table 16. See text and Blow, Kalwij, and Ruiz-Castillo (2003) for discussion of decomposition procedure. Changes in explanatory variables between 1980 and 1997 weighted using coefficients from 1980.

Table 19. United States: alternative decompositions of changes in service share using current-price budget shares, 1980 - 97
(Percentage points)

Category	Total	Demo- graphics	Employ- ment	Total expenditures		House "Baumol"		Residual
				Level	Inequality	owner	effect	
DEMPATEM	8.3	0.8	-0.1	-0.9	0.0	--	3.2	5.1
<i>Alternatives</i>								
1. Emp.-exp. interact.	8.3	1.0	0.2	-1.1	0.1	0.0	3.2	5.0
2. Trimmed sample	8.3	1.3	-0.2	-1.2	0.0	--	3.2	5.1
3. Tobit	8.3	1.0	-0.1	-1.5	0.1	--	3.2	5.6

Notes: See notes to Tables 17 and 18.

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Output

Ronald Schettkat and Lara Yocarini (Jan. 2003)

DEMPATEM in Perspective. State of the Art in the Analysis of Structural Changes.

Book in preparation:

The US-European gaps in Demand and Employment

Wiemer Salverda and Ronald Schettkat, ed.

Working Papers: (See list below)

LIST OF WORKING PAPERS

Working papers are downloadable at <http://www.uva-aiaa.net/lower.asp?id=194>

1. **John Schmitt**, Estimating Household Consumption Expenditures in the United States using the Interview and Diary Portions of the 1980, 1990, and 1997 Consumer Expenditure Surveys
2. **Laura Blow**, Household Expenditures Patterns in the UK
3. **Adriaan Kalwij & Wiemer Salverda**, Changing Household Demand Patterns in the Netherlands: Some Explanations
4. **Javier Ruiz-Castillo & María José Luengo-Prado**, Demand Patterns in Spain
5. **Marijke van Deelen & Ronald Schettkat**, Household Demand Patterns in West Germany: 1978-1993*
6. **Francois Gardes & Christophe Starzec**, Household Demand Patterns in France 1980-1995
7. **Francois Gardes & Christophe Starzec**, Income Effects on Services Expenditures
8. **Adriaan Kalwij & Steve Machin**, Changes in Household Demand Patterns: A Cross-Country Comparison
9. **Laura Blow, Adriaan Kalwij & Javier Ruiz-Castillo**, Methodological issues on the analysis of consumer demand patterns over time and across countries
10. **Mary Gregory & Giovanni Russo**, The Employment Impact of Differences in Demand and Production Structures
11. **Ronald Schettkat (Research Assistance: Joep Damen)** Demand Patterns and Employment Structures, An Aggregate Analysis
12. **Andrew Glyn, Wiemer Salverda, Joachim Möller, John Schmitt, Michel Sollogoub** Employment differences in services the role of wages, productivity and demand
13. **Ronald Schettkat & Wiemer Salverda**, Demand Patterns and Employment Growth Consumption and Services in France, Germany, the Netherlands, the United Kingdom and the United States Concluding Summary