

Online Appendix

The Effect of Product Demand on Inequality: Evidence from the US and the UK

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In this Appendix I collect the tables (mainly of descriptive statistics) and describe the sample selection of the various datasets used in the paper.

US CEX data: The data used in the paper are drawn from the Consumer Expenditure Survey provided by Ed Harris and John Sabelhaus at NBER (www.nber.org/data/ces_cbo.html). The mapping of the single items into the 38 aggregate items is detailed in (www.nber.org/ces_cbo/Cexfam.pdf). The sample size of the original NBER data 1994-1997 is 23,301 households. I drop 3 records reporting implausible consumption expenditures shares of 100% or more on a single item, the final sample is 23,298 households. I exclude only own-property housing costs and vehicle purchase, I include housing rent. Total expenditure is the sum over the 38 items and is on average 84% of NBER-provided total expenditure (which includes own-property housing costs and autos). I sum some small-expenditure items: food off-premise and food at work; rent and other rent; publications and books; hospital and nurse expenditures; mass transit and other tolls. Total non-durable expenditure is deflated using the CPI-U.

US Census data: The sample of adults used in the analysis includes all individuals between the age of 18 and 64 who were not in group quarters such as prisons and psychiatric institutions, and who lived in a metropolitan area available in the Census IPUMS. Full time individuals are in the sample if they report at least 35 weeks worked and at least 30 hours per week. The final dataset is collapsed into MSA-industry-year averages, all calculations of MSA averages are computed using the Census personal weights. All available industries with more than 200 employees in 1980 in a MSA are used in the analysis. The final dataset includes 4,130 MSA-industry-year averages in the 163 MSAs which are present in all three decades (the regressions are in differences). The dataset is not balanced because not all industries are present in each MSA.

US CPS data: industry skill intensity in 1980 is calculated using the 1979 and 1980 CPS-MORG files on 399,912 employed individuals with a valid three-digit industry record (IND70). Sample weights are not used.

US other data: Price data for each consumption good are obtainable on the BLS web page. The Input-Output tables used to account for intermediate inputs are domestic use matrices at basic prices for the US in 1995.

UK FES data: The 1994:1-1997:12 baseline sample consists of 26,618 households. To each household I allocate a head (usually the male in a household consisting of two or more individuals). I drop 264 households whose head has an invalid education record; 240 households who allocate 100% of non-durable expenditure on any of the 39 items; 121 households who have negative total expenditure. The final sample is of 26,189 households. The measure of total non-durable expenditure is the sum over the 42 items considered. The main omissions are housing costs and motor vehicles purchase plus some other very minor expenditures such as TV licence and holidays abroad which do not have any obvious industry match. Total expenditure is 96% of total non-durable expenditure in FES. I aggregate some small items: electrical appliances and other appliances; furniture and furnishing; bank, insurance and legal expenditures, bus fares and other fares. Qualifications are not given in the FES, so I define “some college education” those heads who left school after age 18.

UK LFS data: industry skill intensity is calculated using the 1994-1997 files on 240,833 employed individuals with a valid four-digit industry record. Sample weights are not used. I use the highest qualification attained “first degree or higher” as measure of the share of college-educated workers by industry, “A-levels or higher” as measure of high-school educated workers.

UK other data: The price series for each consumption item are provided by the Office of National Statistics. When the consumption items are aggregated at a higher level, the corresponding price series are constructed as

a weighted average of their basic components. Input-Output tables are 1997 Office of National Statistics official tables.

1 Online Table Appendix

TABLE A1. US CEX Data: Expenditure shares over time

| Year | 1972 | 1984 | 1992 | 2002 | 2012 |
|--|-------|--------|--------|--------|--------|
| Food | 0.168 | 0.150 | 0.143 | 0.132 | 0.128 |
| Alcoholic beverages | 0.012 | 0.013 | 0.010 | 0.009 | 0.009 |
| Tobacco products | 0.014 | 0.010 | 0.009 | 0.008 | 0.006 |
| Apparel and services | 0.068 | 0.060 | 0.057 | 0.043 | 0.034 |
| Transportation | 0.168 | 0.196 | 0.175 | 0.191 | 0.175 |
| Housing | 0.268 | 0.304 | 0.318 | 0.327 | 0.328 |
| Entertainment | 0.075 | 0.048 | 0.050 | 0.051 | 0.051 |
| Personal care products and services | 0.017 | 0.013 | 0.013 | 0.013 | 0.012 |
| Reading | 0.005 | 0.006 | 0.005 | 0.003 | 0.002 |
| Miscellaneous | 0.009 | 0.021 | 0.026 | 0.019 | 0.016 |
| Cash contributions | 0.053 | 0.032 | 0.032 | 0.031 | 0.037 |
| Education | 0.011 | 0.014 | 0.014 | 0.018 | 0.023 |
| Health care | 0.056 | 0.048 | 0.055 | 0.058 | 0.069 |
| Personal insurance and pensions | 0.077 | 0.086 | 0.092 | 0.096 | 0.109 |
| Total consumption (current dollars) | 9,491 | 21,972 | 29,846 | 40,676 | 51,441 |
| Fraction heads with education > 12 years | 27.5 | 43 | 46 | 56 | 62 |

Notes: Author's calculations on CEX Tables available on the BLS website. The tables are available in 1972 and continuously from 1984 to 2012.

TABLE A2. US CEX Data 1994-1997: Descriptive Statistics

| Expenditure Shares | N | Mean | Std Dev | Min | Max |
|---|--------|--------|---------|--------|--------|
| Food Off-Premise | 23,298 | 0.182 | 0.101 | 0.000 | 0.944 |
| Food On-Premise | 23,298 | 0.056 | 0.054 | 0.000 | 0.799 |
| Tobacco Products | 23,298 | 0.015 | 0.030 | 0.000 | 0.969 |
| Alcohol Off-Premise | 23,298 | 0.007 | 0.016 | 0.000 | 0.436 |
| Alcohol On-Premise | 23,298 | 0.006 | 0.017 | 0.000 | 0.401 |
| Clothing and Shoes | 23,298 | 0.047 | 0.046 | 0.000 | 0.727 |
| Clothing Services | 23,298 | 0.007 | 0.011 | 0.000 | 0.277 |
| Jewelry and Watches | 23,298 | 0.005 | 0.018 | 0.000 | 0.607 |
| Barbershops, Beauty Parlors, Health Clubs | 23,298 | 0.013 | 0.015 | 0.000 | 0.655 |
| Housing | 23,298 | 0.131 | 0.164 | 0.000 | 0.964 |
| Nondurable Household Supplies and Equipment | 23,298 | 0.034 | 0.056 | 0.000 | 0.777 |
| Electricity | 23,298 | 0.044 | 0.038 | 0.000 | 0.681 |
| Gas | 23,298 | 0.015 | 0.025 | 0.000 | 0.441 |
| Water and Other Sanitary Services | 23,298 | 0.013 | 0.017 | 0.000 | 0.385 |
| Fuel Oil and Coal | 23,298 | 0.005 | 0.017 | 0.000 | 0.398 |
| Telephone and Telegraph | 23,298 | 0.039 | 0.032 | 0.000 | 0.524 |
| Domestic Service, Other Household Operation | 23,298 | 0.022 | 0.037 | 0.000 | 0.691 |
| Drug Preparations | 23,298 | 0.010 | 0.027 | -0.190 | 0.473 |
| Ophthalmic Products and Orthopedic Appliances | 23,298 | 0.003 | 0.011 | -0.230 | 0.276 |
| Physicians, Dentists, Other Medical Professionals | 23,298 | 0.017 | 0.037 | -0.939 | 0.896 |
| Hospitals | 23,298 | 0.003 | 0.026 | -0.862 | 0.777 |
| Health Insurance | 23,298 | 0.040 | 0.056 | 0.000 | 0.654 |
| Business Services | 23,298 | 0.015 | 0.044 | 0.000 | 0.860 |
| Expense of Handling Life Insurance | 23,298 | 0.014 | 0.028 | 0.000 | 0.727 |
| Tires, Tubes, Accessories and Other Parts | 23,298 | 0.006 | 0.015 | 0.000 | 0.424 |
| Repair, Greasing, Washing, Parking, Storage, Rental | 23,298 | 0.030 | 0.049 | 0.000 | 0.638 |
| Gasoline and Oil | 23,298 | 0.051 | 0.041 | 0.000 | 0.576 |
| Auto Insurance | 23,298 | 0.032 | 0.037 | 0.000 | 0.704 |
| Mass Transit Systems | 23,298 | 0.004 | 0.013 | 0.000 | 0.397 |
| Taxicab, Railway, Bus and Other Travel Expenses | 23,298 | 0.003 | 0.011 | 0.000 | 0.466 |
| Airline Fares | 23,298 | 0.009 | 0.023 | 0.000 | 0.673 |
| Magazines, Newspapers, Other Nondurable Toys etc. | 23,298 | 0.020 | 0.029 | 0.000 | 0.765 |
| Recreation and Sports Equipment | 23,298 | 0.024 | 0.049 | 0.000 | 0.784 |
| Other Recreation Services | 23,298 | 0.039 | 0.037 | 0.000 | 0.700 |
| Higher Education | 23,298 | 0.012 | 0.058 | 0.000 | 0.949 |
| Nursery, Elementary and Secondary Education | 23,298 | 0.007 | 0.031 | 0.000 | 0.621 |
| Other Education Services | 23,298 | 0.002 | 0.014 | 0.000 | 0.611 |
| Religious and Welfare Activities | 23,298 | 0.017 | 0.047 | 0.000 | 0.822 |
| Age of head | 23,298 | 45.632 | 17.906 | 15 | 94 |
| Sex of head (female=1) | 23,298 | 0.408 | 0.492 | 0 | 1 |
| Number of children | 23,298 | 0.842 | 1.166 | 0 | 10 |
| Number of earners | 23,298 | 1.330 | 0.937 | 0 | 12 |
| Family size | 23,298 | 2.501 | 1.510 | 1 | 28 |
| % Single | 23,298 | 0.512 | 0.500 | 0 | 1 |
| % Spouse with some college education | 23,298 | 0.244 | 0.429 | 0 | 1 |
| Log total househ. exp. incl. durables (price=1997) | 23,298 | 9.658 | 0.965 | 4.695 | 12.524 |
| Log total househ. expenditure (price=1997) | 23,298 | 9.448 | 0.878 | 4.665 | 12.135 |
| Log total househ. net income (price=1997) | 15,993 | 10.117 | 1.272 | 0.122 | 13.317 |
| Year | 23,298 | 1995 | 1.175 | 1994 | 1997 |

TABLE A3. US data - The Consumption Item-Industry Match

| CEX Consumption Item | CPS Industry Name | Sic 70 | Sic 80 |
|--|--------------------------------------|---------------------|---------------------|
| Food Off-premise | Food and kindred products | 268-298 | 100-122 |
| Food On-Premise | Eating and drinking places | 669 | 641 |
| Tobacco Products | Tobacco manufactures | 299 | 130 |
| Alcohol Off-Premise | Beverage industries | 289 | 120 |
| Alcohol On-Premise | Eating and drinking places | 669 | 641 |
| Clothing and Shoes | Apparel and finished textile prod. | 319-327 | 151-152 |
| Clothing Services | Repair services | 749-759 | 751-760 |
| Jewelry and Watches | Watches, clocks, clockwork devices | 249 | 381 |
| Barbershops, Beauty Parlors etc. | Personal serv. except private housh. | 777-798 | 762-791 |
| Nondurable Household Supplies | Soaps and cosmetics | 358 | 182 |
| Electricity | Electric light and power | 467 | 460 |
| Gas | Gas and steam supply systems | 469 | 461 |
| Water and Other Sanitary Services | Water supply | 477 | 470 |
| Fuel Oil and Coal | Petroleum products | 558 | 200-201 |
| Telephone and Telegraph | Communications | 447-449 | 440-442 |
| Domestic Service, Other Househ. Op. | Private householdservices | 769 | 761 |
| Drug Preparations | Drugs and medicines | 357 | 541 |
| Ophthalmic Products | Optical and health services supplies | 247 | 372 |
| Physicians, Dentists, Medical Profess. | Health services except hospitals | 828-837, 839-848 | 812-830, 832-840 |
| Hospitals | Hospitals | 838 | 831 |
| Health Insurance | Insurance and real estate | 717-718 | 711-712 |
| Business Services | Business services | 727-748 | 721-750 |
| Expense of Handling Life Insurance | Insurance and real estate | 717-718 | 711-712 |
| Tires, Tubes, Accessories and Parts | Motor vehicles, motor vehicle equip. | 219 | 351 |
| Repair, Greasing, Parking etc. | Repair services | 749-759 | 751-760 |
| Gasoline and Oil | Petroleum products | 558 | 200-201 |
| Bridge, Tunnel, Ferry and Road Tolls | Street railways and bus lines | 408 | 401 |
| Auto Insurance | Insurance and real estate | 717-718 | 711-712 |
| Mass Transit Systems | Street railways and bus lines | 408 | 401 |
| Taxicab, Railway, Bus and Travel Exp. | Railroads and railway express serv. | 407 | 400 |
| Airline Fares | Air transportation | 427 | 421 |
| Magazines, Newspapers, Toys etc. | Newspaper publishing and printing | 338 | 172 |
| Recreation and Sports Equipment | Professional and photo equipment | 239-257 | 371-382 |
| Other Recreation Services | Entertainment and recreation serv. | 807-809 | 800-810 |
| Higher Education | College and university | 858 | 850 |
| Nursery, Elementary and Sec. Education | Elementary and secondary schools | 857 | 842 |
| Other Education Services | Other educational Services | 867 | 860 |
| Religious and Welfare Activities | Social services | 877-879 | 861-871 |

Notes: US CPS and CEX data.

TABLE A4. US data - Industry Skill Intensity

| | Skill Intensity 1980 | Adj. Skill Intensity Interm. Goods | Tradable |
|---|-------------------------|---------------------------------------|--------------|
| Food and kindred products | 0.236 | 0.331 | tradable |
| Eating and drinking places | 0.266 | 0.296 | non tradable |
| Tobacco manufactures | 0.255 | 0.437 | tradable |
| Beverage industries | 0.339 | 0.334 | tradable |
| Eating and drinking places | 0.265 | 0.296 | non tradable |
| Apparel and finished textile prod. | 0.136 | 0.245 | tradable |
| Repair services | 0.240 | 0.327 | non tradable |
| Watches, clocks, clockwork devices | 0.242 | 0.387 | tradable |
| Personal services except private housh. | 0.273 | 0.327 | non tradable |
| Housing | 0.282 | 0.326 | non tradable |
| Soaps and cosmetics | 0.163 | 0.246 | tradable |
| Electric light and power | 0.422 | 0.402 | non tradable |
| Gas and steam supply systems | 0.378 | 0.397 | non tradable |
| Water supply | 0.346 | 0.393 | non tradable |
| Petroleum products | 0.473 | 0.439 | tradable |
| Communications | 0.458 | 0.466 | non tradable |
| Private household services | 0.131 | 0.327 | non tradable |
| Drugs and medicines | 0.467 | 0.489 | tradable |
| Optical and health services supplies | 0.355 | 0.396 | tradable |
| Health services except hospitals | 0.671 | 0.545 | non tradable |
| Hospitals | 0.543 | 0.532 | non tradable |
| Insurance and real estate | 0.531 | 0.370 | non tradable |
| Business services | 0.620 | 0.597 | non tradable |
| Insurance and real estate | 0.531 | 0.406 | non tradable |
| Motor vehicles, motor vehicle equip. | 0.297 | 0.382 | tradable |
| Repair Services | 0.240 | 0.301 | non tradable |
| Petroleum products | 0.381 | 0.439 | tradable |
| Insurance and real estate | 0.531 | 0.503 | non tradable |
| Street railways and bus lines | 0.277 | 0.377 | non tradable |
| Railroads and railway express serv. | 0.275 | 0.381 | non tradable |
| Air transportation | 0.550 | 0.399 | non tradable |
| Newspaper Printing, publishing | 0.282 | 0.454 | tradable |
| Professional and photo equipment | 0.410 | 0.455 | tradable |
| Entertainment and recreation serv. | 0.441 | 0.449 | non tradable |
| College and university | 0.800 | 0.679 | non tradable |
| Elementary and secondary schools | 0.699 | 0.679 | non tradable |
| Other educational services | 0.719 | 0.679 | non tradable |
| Social services | 0.590 | 0.565 | non tradable |

Notes: Skill intensity in column (1) is calculated from CPS data 1979-80 as the share of workers in the industry with some college education (13 or more years of schooling). Skill intensity in column (2) is calculated using the 1997 industry-by-industry Input-Output table.

TABLE A5. US data - The CPS Industry and Input-Output Table Match

| Sic 80 | CPS Industry Name | IO Code | IO Industry Code |
|---------------------|---|-----------|--|
| 100-122 | Food and kindred products | 3110 | Food manufacturing |
| 641 | Eating and drinking places | 7220 | Food services and drinking places |
| 130 | Tobacco manufactures | 3122 | Tobacco manufacturing |
| 120 | Beverage industries | 3121 | Beverage manufacturing |
| 641 | Eating and drinking places | 7130 | Amusements and recreation |
| 151-152 | Apparel and other finished textile prod. | 3150 | Apparel manufacturing |
| 751-760 | Repair Services | 812900 | Other personal services |
| 381 | Watches, clocks, and devices | 339910 | Jewelry and silverware manuf. |
| 762-791 | Personal services except private households | 812100 | Personal care services |
| 182 | Soaps and cosmetics | 3256 | Soap, toiletry manuf. |
| 460 | Electric light and power | 2211 | Power generation and supply |
| 461 | Gas and steam supply systems | 2212 | Natural gas distribution |
| 470 | Water supply | 2213 | Water, sewage and other systems |
| 200-201 | Petroleum products | 3240 | Petroleum and coal products manuf. |
| 440-442 | Communications | 5133 | Telecommunications |
| 761 | Private household services | 8120 | Personal and laundry services |
| 541 | Drugs and medicines | 3254 | Pharmaceutical and medicine manuf. |
| 372 | Optical and health services supplies | 3391 | Medical equip. and supplies manuf. |
| 812-830, 832-840 | Health services except hospitals | 6210 | Ambulatory health care services |
| 831 | Hospitals | 6220 | Hospitals |
| 711-712 | Insurance and real estate | 5240 | Insurance and related activities |
| 721-750 | Business Services | 5411-5419 | Professional and technical services |
| 711-712 | Insurance and real estate | 5240 | Insurance and related activities |
| 351 | Motor vehicles, motor vehicle equip. | 336300 | Motor vehicle parts manufacturing |
| 751-760 | Repair services | 8111 | Automotive repair and maintenance |
| 200-201 | Petroleum products | 2110 | Oil and gas extraction |
| 401 | Street railways and bus lines | 4850 | Transit and ground passenger transp. |
| 711-712 | Insurance and real estate | 5240 | Insurance carriers and related activities |
| 401 | Street railways and bus lines | 4850 | Transit and ground passenger transp. |
| 400 | Railroads and railway express serv. | 4820 | Rail transportation |
| 421 | Air transportation | 4810 | Air transportation |
| 172 | Newspaper publishing and printing | 511120 | Periodical publishers |
| 371-382 | Professional and photographic equip. | 339920 | Sporting and athletic goods manufacturing |
| 800-810 | Entertainment and recreation serv. | 71A0+7130 | Arts entertainment and recreation |
| 850 | College and university | 611A00 | Colleges, universities and junior colleges |
| 842 | Elementary and secondary schools | 611100 | Elementary and secondary schools |
| 860 | Educational services | 611B00 | Other educational services |
| 861-871 | Social services | 813A | Religious, social advocacy organizations |

Notes: Input-Output tables 1995.

TABLE A6. UK data - Descriptive Statistics: UK FES data 1994-1997

| Expenditure Shares | N | Mean | Std Dev | Min | Max |
|--|--------|-------|---------|--------|-------|
| Meat | 26,189 | 0.059 | 0.046 | 0.000 | 0.571 |
| Fish | 26,189 | 0.011 | 0.016 | 0.000 | 0.370 |
| Fruit and vegetables | 26,189 | 0.044 | 0.032 | 0.000 | 0.362 |
| Edible oil and fats | 26,189 | 0.007 | 0.008 | 0.000 | 0.143 |
| Milk products | 26,189 | 0.034 | 0.026 | 0.000 | 0.800 |
| Bread and biscuits | 26,189 | 0.041 | 0.030 | 0.000 | 0.347 |
| Sugar and sweets | 26,189 | 0.013 | 0.016 | 0.000 | 0.384 |
| Beer | 26,189 | 0.037 | 0.064 | 0.000 | 0.860 |
| Wine | 26,189 | 0.012 | 0.025 | 0.000 | 0.475 |
| Spirits | 26,189 | 0.010 | 0.028 | 0.000 | 0.648 |
| Soft drinks | 26,189 | 0.021 | 0.017 | 0.000 | 0.252 |
| Tobacco | 26,189 | 0.040 | 0.074 | 0.000 | 0.739 |
| Clothing | 26,189 | 0.059 | 0.084 | 0.000 | 0.724 |
| Personal articles | 26,189 | 0.008 | 0.031 | 0.000 | 0.786 |
| Footwear | 26,189 | 0.015 | 0.038 | 0.000 | 0.449 |
| Books | 26,189 | 0.033 | 0.033 | 0.000 | 0.508 |
| Records | 26,189 | 0.008 | 0.022 | 0.000 | 0.467 |
| Petrol | 26,189 | 0.056 | 0.062 | 0.000 | 0.635 |
| Household consumables | 26,189 | 0.027 | 0.040 | 0.000 | 0.702 |
| Drugs | 26,189 | 0.006 | 0.016 | 0.000 | 0.884 |
| Soap and toiletries | 26,189 | 0.020 | 0.024 | 0.000 | 0.430 |
| Electric appliances | 26,189 | 0.029 | 0.067 | 0.000 | 0.872 |
| Audio appliances | 26,189 | 0.008 | 0.047 | 0.000 | 0.907 |
| Furniture | 26,189 | 0.018 | 0.072 | 0.000 | 0.975 |
| Toys | 26,189 | 0.008 | 0.029 | 0.000 | 0.584 |
| Electricity bill | 26,189 | 0.052 | 0.050 | -0.207 | 0.885 |
| Gas bill | 26,189 | 0.040 | 0.046 | -0.021 | 0.601 |
| Motor vehicle maintainance | 26,189 | 0.020 | 0.048 | 0.000 | 0.880 |
| Repairs to personal and hh. goods | 26,189 | 0.005 | 0.027 | 0.000 | 0.712 |
| Holidays | 26,189 | 0.008 | 0.045 | 0.000 | 0.822 |
| Food eaten out | 26,189 | 0.070 | 0.066 | 0.000 | 0.696 |
| Rail fares | 26,189 | 0.005 | 0.026 | 0.000 | 0.527 |
| Bus fares | 26,189 | 0.014 | 0.041 | 0.000 | 0.879 |
| Postage | 26,189 | 0.004 | 0.011 | 0.000 | 0.344 |
| Phone bill | 26,189 | 0.036 | 0.035 | 0.000 | 0.635 |
| Bank charges | 26,189 | 0.044 | 0.054 | -0.033 | 0.819 |
| Education expenditure | 26,189 | 0.008 | 0.044 | 0.000 | 0.782 |
| Health expenditure | 26,189 | 0.007 | 0.032 | 0.000 | 0.931 |
| Subscptions to organizations | 26,189 | 0.004 | 0.013 | 0.000 | 0.445 |
| Entertainment | 26,189 | 0.034 | 0.047 | 0.000 | 0.687 |
| Hairdressing | 26,189 | 0.011 | 0.025 | 0.000 | 0.399 |
| Domestic help | 26,189 | 0.014 | 0.047 | 0.000 | 0.777 |
| Some college education of head (dummy) | 26,189 | 0.143 | 0.350 | 0.000 | 1.000 |
| Age of head | 26,189 | 50.35 | 17.60 | 16 | 99 |
| Sex of head | 26,189 | 0.257 | 0.437 | 0 | 1 |
| Number of children | 26,189 | 0.644 | 1.037 | 0 | 10 |
| Log total househ. expenditure (price=1997) | 26,189 | 5.027 | 0.739 | 1.163 | 8.001 |
| Log total househ. net income (price=1997) | 26,154 | 5.548 | 0.759 | -1.621 | 8.774 |

TABLE A7. UK data - The Consumption Item-Industry Match

| FES Consumption Item | SIC 1992 Code | LFS Industry Name |
|--------------------------------|---------------------|---|
| Meat | 15.1 | Meat production |
| Fish | 15.2 | Fish processing |
| Edible oils and fats | 15.4 | Oils and fats manufacture |
| Milk products | 15.5 | Dairy products |
| Bread and biscuit | 15.81+15.82 | Bread and biscuit manufacture |
| Sugar and sweets | 15.83+15.84 | Sugar and sweets manufacture |
| Fruit and vegetables | 15.3 | Fruit and vegetables |
| Food eaten out | 55 | Restaurants and take-away |
| Beer | 15.96+15.97 | Beer production |
| Wine | 15.93 | Wine production |
| Spirits | 15.91+15.92 | Alcoholic drinks distilling |
| Soft drinks | 15.98 | Soft drinks production |
| Tobacco | 16 | Tobacco products |
| Electric appliances | 29.71 | Elec domestic appliances man. |
| Audio appliances | 32.30 | TV, radio, HiFi etc. eqt. manufacture |
| Furniture | 36.11 | Chairs etc. manufacture |
| Electricity bill | 40.10 | Electricity generation |
| Gas bill | 40.2 | Gas production supply |
| Household consumables | 24.1+24.2 | Pesticides and detergents manufacture |
| Postage | 64.1 | Post services |
| Phone bill | 64.2 | Telecommunications |
| Domestic help | 93.05 | Domestic service activities |
| Repairs | 52.7 | Repairs to personal and household goods |
| Clothing | 17+18 | Textile manufacturing |
| Footwear | 19.3 | Footwear |
| Petrol | 23.2 | Mineral oil refining |
| Motor vehicle maintenance | 50.2+50.4 | Maintenance and repair of vehicles |
| Bus fares | 60.2 | Road passenger transport |
| Rail fares | 60.1 | Transport via railways |
| Personal articles | 19.1+19.2,36.2+36.3 | Luggage, jewelry and musical instr. |
| Soap and toiletries | 24.5 | Soap and toilet preparations |
| Drugs | 24.4 | Pharmaceuticals |
| Hairdressing | 93.02 | Hairdressing |
| Records | 22.3 | Reproduction of recorded media |
| Books | 22.1+22.2 | Printing and publishing |
| Toys | 36.5 | Toys production |
| Holidays in UK | 55.1+55.2 | Hotels and provision of lodgings |
| Entertainment | 92.1 to 92.7 | Recreational activities |
| Subscriptions to organizations | 91.1 to 91.3 | Membership organizations |
| Bank charges | 65.1+65.2 | Financial intermediation |
| Health expenditure | 85.1 | Health services |
| Education expenditure | 80 | Education |

TABLE A8. UK data - Industry Skill Intensity

| LFS Industry | Skill Intensity | Adj. Skill Int. | Skill Intensity High School | Adj. Skill Int. High School |
|-------------------------------------|-----------------|-----------------|--------------------------------|--------------------------------|
| Footwear | 0.032 | 0.067 | 0.226 | 0.283 |
| Hairdressing | 0.037 | 0.159 | 0.201 | 0.404 |
| Meat production | 0.054 | 0.084 | 0.247 | 0.306 |
| Fish processing | 0.059 | 0.113 | 0.361 | 0.395 |
| Road and passenger transport | 0.064 | 0.098 | 0.263 | 0.324 |
| Maintainance of motor vehicles | 0.067 | 0.099 | 0.326 | 0.369 |
| Restaurants and take away | 0.069 | 0.106 | 0.427 | 0.452 |
| Post services | 0.072 | 0.095 | 0.401 | 0.421 |
| Textile manufacturing | 0.074 | 0.101 | 0.288 | 0.322 |
| Bread and biscuit manufacturing | 0.078 | 0.103 | 0.289 | 0.335 |
| Furniture | 0.079 | 0.098 | 0.295 | 0.329 |
| Repairs of personal and hh. goods | 0.091 | 0.122 | 0.490 | 0.503 |
| Domestic help | 0.095 | 0.159 | 0.379 | 0.404 |
| Hotels and lodging | 0.098 | 0.106 | 0.457 | 0.452 |
| Electric appliances | 0.103 | 0.138 | 0.368 | 0.410 |
| Fruit and vegetables | 0.110 | 0.113 | 0.365 | 0.395 |
| Dairy products | 0.113 | 0.133 | 0.392 | 0.418 |
| Luggage, jewelry and musical instr. | 0.126 | 0.090 | 0.345 | 0.305 |
| Sugar and sweets | 0.133 | 0.177 | 0.386 | 0.447 |
| Tobacco production | 0.134 | 0.175 | 0.375 | 0.448 |
| Soft drinks production | 0.152 | 0.190 | 0.496 | 0.496 |
| Railways | 0.163 | 0.164 | 0.442 | 0.464 |
| Alcoholic drinks distilling | 0.165 | 0.192 | 0.483 | 0.491 |
| Oils and fats production | 0.167 | 0.153 | 0.400 | 0.421 |
| Wine production | 0.167 | 0.192 | 0.667 | 0.491 |
| Printing and publishing | 0.199 | 0.200 | 0.509 | 0.509 |
| Toys production | 0.208 | 0.202 | 0.475 | 0.488 |
| Soap and toiletries | 0.212 | 0.218 | 0.513 | 0.525 |
| Wine production | 0.219 | 0.192 | 0.467 | 0.491 |
| Telecommunications | 0.266 | 0.267 | 0.629 | 0.619 |
| Audio appliances | 0.266 | 0.241 | 0.527 | 0.522 |
| Entertainment | 0.268 | 0.282 | 0.631 | 0.626 |
| Gas supply | 0.274 | 0.284 | 0.549 | 0.565 |
| Reproduction of recorded media | 0.294 | 0.200 | 0.618 | 0.509 |
| Pesticides and detergents | 0.308 | 0.256 | 0.560 | 0.528 |
| Electricity generation | 0.316 | 0.282 | 0.544 | 0.515 |
| Financial intermediation | 0.323 | 0.235 | 0.820 | 0.760 |
| Mineral oil refining | 0.369 | 0.338 | 0.595 | 0.585 |
| Pharmaceuticals | 0.393 | 0.358 | 0.592 | 0.594 |
| Medical services | 0.486 | 0.486 | 0.753 | 0.695 |
| Membership organizations | 0.491 | 0.325 | 0.743 | 0.604 |
| Education | 0.603 | 0.570 | 0.757 | 0.737 |

Notes: Skill intensity in column (1) is calculated from LFS data 1994-97 as the share of workers in the industry with a degree-level qualification. Skill intensity in column (2) is adjusted for inputs' contribution using the 1997 Input-Output table. Skill intensity in column (3) is calculated from LFS data 1994-97 as the share of workers in the industry with A-level qualification and is adjusted for inputs contribution in column (4).

TABLE A9. US data - Robustness Test of Education Elasticities

| | (1) Drop education exp. | | (2) Education coeff. | | (3) Non Tradables | |
|------------------------------|----------------------------|---------------------|-------------------------|-------------------|----------------------|---------------------|
| Adj. skill intensity | 0.289 (0.280) | -4.297** (1.816) | 0.067* (0.039) | -0.224 (0.253) | 0.585* (0.292) | -4.868** (2.086) |
| Adj. skill intensity squared | | 5.554** (2.176) | | 0.342 (0.293) | | 6.010** (2.281) |
| Constant | -0.114 (0.108) | 0.783** (0.366) | -0.036** (0.015) | 0.022 (0.052) | -0.193 (0.120) | 0.967** (0.453) |
| Observations | 37 | 37 | 38 | 38 | 25 | 25 |
| R-squared | 0.029 | 0.185 | 0.077 | 0.112 | 0.148 | 0.352 |

Notes: Each column is the result of a OLS regression of education elasticities on skill intensity weighted by the mean budget share of the consumption item. Skill intensity is always adjusted for intermediate inputs. In column (i) expenditure on high education is excluded, in column (ii) the dependent variable are the estimated coefficients instead of elasticities, in column (iii) only non tradable sectors are used as defined in Table A4. *** P value<0.01, ** P value<0.05, * P value<0.1.

TABLE A10. UK Data - Education and Income Elasticities

| | Education Coefficient | Education Elasticity | Income Coefficient | Income Elasticity | Skill Intensity 1994 |
|-----------------------------------|--------------------------|-------------------------|-----------------------|----------------------|-------------------------|
| Footwear | -0.001 | -0.019 | 0.006 | 1.377 | 0.032 |
| Hairdressing | 0.002 | 0.037 | 0.002 | 1.214 | 0.037 |
| Meat | -0.018 | -0.063 | -0.023 | 0.616 | 0.054 |
| Fish | 0.000 | -0.001 | -0.003 | 0.676 | 0.059 |
| Bus fares | 0.003 | 0.042 | 0.000 | 1.016 | 0.064 |
| Motor vehicles maintainance | 0.009 | 0.088 | 0.009 | 1.463 | 0.067 |
| Food eaten out | 0.007 | 0.021 | 0.012 | 1.177 | 0.069 |
| Postage | 0.002 | 0.081 | 0.000 | 0.922 | 0.072 |
| Clothing | 0.007 | 0.023 | 0.037 | 1.628 | 0.074 |
| Bread and biscuits | -0.008 | -0.039 | -0.019 | 0.533 | 0.078 |
| Furniture | 0.004 | 0.045 | 0.021 | 2.167 | 0.079 |
| Repairs of personal and hh. goods | 0.003 | 0.116 | 0.003 | 1.640 | 0.091 |
| Domestic help | 0.010 | 0.149 | 0.000 | 1.028 | 0.095 |
| Holidays | 0.004 | 0.115 | 0.010 | 2.297 | 0.098 |
| Electric appliances | 0.005 | 0.034 | 0.019 | 1.632 | 0.103 |
| Fruit and vegetables | 0.000 | 0.000 | -0.015 | 0.666 | 0.110 |
| Milk products | -0.004 | -0.023 | -0.016 | 0.523 | 0.113 |
| Personal articles | 0.003 | 0.068 | 0.007 | 1.851 | 0.126 |
| Sugar and sweets | -0.003 | -0.046 | -0.005 | 0.654 | 0.133 |
| Tobacco | -0.034 | -0.175 | -0.021 | 0.475 | 0.134 |
| Soft drinks | -0.002 | -0.018 | -0.006 | 0.686 | 0.152 |
| Rail fares | 0.007 | 0.293 | 0.002 | 1.411 | 0.163 |
| Beer | -0.014 | -0.078 | -0.004 | 0.898 | 0.165 |
| Edible oils and fats | -0.001 | -0.040 | -0.004 | 0.473 | 0.167 |
| Wine | 0.009 | 0.148 | 0.006 | 1.492 | 0.167 |
| Books | 0.005 | 0.031 | -0.005 | 0.842 | 0.199 |
| Toys | 0.000 | -0.001 | 0.003 | 1.404 | 0.208 |
| Soap and toiletries | 0.000 | -0.001 | 0.002 | 1.122 | 0.212 |
| Spirits | -0.001 | -0.011 | 0.003 | 1.262 | 0.219 |
| Phone | 0.002 | 0.011 | -0.017 | 0.538 | 0.266 |
| Audio appliances | 0.002 | 0.050 | 0.010 | 2.216 | 0.266 |
| Entertainment | -0.007 | -0.044 | 0.004 | 1.105 | 0.268 |
| Gas bill | -0.007 | -0.038 | -0.023 | 0.434 | 0.274 |
| Records | 0.002 | 0.041 | 0.003 | 1.431 | 0.294 |
| Household consumables | 0.000 | -0.002 | 0.002 | 1.077 | 0.308 |
| Electricity bill | -0.012 | -0.049 | -0.036 | 0.308 | 0.316 |
| Bank charges | 0.005 | 0.023 | 0.005 | 1.122 | 0.323 |
| Fuel | 0.002 | 0.007 | 0.010 | 1.179 | 0.369 |
| Drugs | 0.001 | 0.031 | 0.000 | 0.939 | 0.393 |
| Health expenditure | 0.003 | 0.080 | 0.006 | 1.840 | 0.486 |
| Subscriptions to organizations | 0.003 | 0.174 | 0.001 | 1.391 | 0.491 |
| Education expenditure | 0.016 | 0.443 | 0.012 | 2.610 | 0.603 |

Notes: Income and education elasticities are estimated with two different specifications of the system of equations described in the text on 26,189 households pooling FES data between year 1994 and 1997. The 42 goods and services are ordered according to their skill intensity. Skill intensity is calculated from LFS data 1979-84. Standard errors are not shown for reasons of space.

TABLE A11. UK data - Regression of Estimated Education Elasticities on Two Measures of Skill Intensity

| | Some College | | High School | |
|-----------------------------|-------------------|----------------------|---------------------|-------------------|
| | Panel A | | | |
| Skill intensity | 0.113 (0.099) | -0.912*** (0.297) | 0.448** (0.198) | -0.868 (1.087) |
| Skill intensity squared | | 2.271*** (0.630) | | 1.335 (1.084) |
| Constant | -0.020 (0.021) | 0.060** (0.029) | -0.204** (0.095) | 0.088 (0.256) |
| R-squared | 0.031 | 0.273 | 0.113 | 0.147 |
| | Panel B | | | |
| Adjusted skill int. | 0.132 (0.128) | -1.131*** (0.391) | 0.453* (0.258) | -1.449 (1.746) |
| Adjusted skill int. squared | | 2.722*** (0.806) | | 1.899 (1.724) |
| Constant | -0.024 (0.026) | 0.094** (0.042) | -0.213* (0.125) | 0.235 (0.426) |
| R-squared | 0.026 | 0.246 | 0.071 | 0.099 |

Notes: N=42. OLS regressions are weighted by the mean share of the consumption item. Education elasticities are estimated on FES data pooled between 1994 to 1997, skill intensities on LFS 1994-1997. In the first two (last two) columns both skill intensities and education elasticities are estimated with reference to workers with some college degree qualification (with high school degree or more). In Panel B both skill intensities are adjusted using Input-Output tables. Standard errors clustered at the industry level in parentheses, *** P value<0.01, ** P value<0.05, * P value<0.1.

TABLE A12. US Census data 1980-1990-2000: Industry Classification

| Industry | IND1990 Code | Classification | education elasticity | average | | delta share | |
|---|-----------------|----------------|-------------------------|------------|------------|-------------|-----------|
| | | | | share 1980 | share 1980 | 1990-1980 | 2000-1990 |
| Food and kindred products | 100-122 | TR0 | -0.147 | 0.029 | -0.006 | -0.004 | |
| Eating and drinking places | 641 | LS | 0.121 | 0.046 | 0.009 | 0.004 | |
| Tobacco manufactures | 120 | TR0 | -0.415 | 0.004 | -0.002 | -0.002 | |
| Beverage industries | 130 | TR0 | 0.001 | 0.005 | -0.002 | 0.000 | |
| Eating and drinking places | 641 | LS | 0.149 | 0.046 | 0.009 | 0.004 | |
| Apparel and finished textile products | 151-152 | TR0 | 0.074 | 0.023 | -0.008 | -0.007 | |
| Repair services | 751-760 | LS | 0.024 | 0.000 | 0.000 | 0.000 | |
| Watches, clocks, clockwork devices | 381 | TR1 | 0.208 | 0.003 | -0.001 | -0.001 | |
| Personal services except private households | 761-781 | LS | 0.041 | 0.034 | 0.001 | -0.006 | |
| Housing | 60 | LS | -0.099 | 0.104 | -0.004 | 0.010 | |
| Soaps and cosmetics | 182 | TR0 | 0.100 | 0.002 | 0.000 | 0.000 | |
| Electric light and power | 450 | LS | -0.141 | 0.016 | -0.003 | -0.001 | |
| Gas and steam supply systems | 451 | LS | -0.109 | 0.004 | -0.001 | -0.001 | |
| Water supply | 470 | LS | -0.040 | 0.004 | 0.000 | 0.000 | |
| Petroleum products | 200-201 | TR1 | -0.225 | 0.012 | -0.004 | -0.003 | |
| Communications | 440-442 | HS | -0.040 | 0.033 | -0.007 | 0.000 | |
| Private household services | 761 | LS | 0.185 | 0.006 | 0.005 | 0.007 | |
| Drugs and medicines | 181 | TR0 | -0.190 | 0.013 | -0.003 | -0.002 | |
| Optical and health services supplies | 372 | TR1 | 0.152 | 0.011 | -0.001 | 0.001 | |
| Health services except hospitals | 812-840 | HS | 0.134 | 0.020 | 0.007 | 0.006 | |
| Hospitals | 831 | HS | -0.005 | 0.086 | 0.000 | -0.008 | |
| Insurance and real estate | 711-712 | HS | -0.056 | 0.065 | 0.004 | -0.003 | |
| Business services | 721-741 | HS | 0.054 | 0.014 | 0.007 | 0.002 | |
| Insurance and real estate | 711-712 | HS | 0.090 | 0.065 | 0.004 | -0.003 | |
| Motor vehicles, motor vehicle equipment | 351 | TR1 | -0.018 | 0.029 | -0.005 | 0.004 | |
| Repair services | 751-760 | LS | 0.211 | 0.016 | -0.001 | 0.005 | |
| Petroleum products | 200-201 | TR1 | -0.070 | 0.006 | -0.001 | -0.001 | |
| Insurance and real estate | 711-712 | HS | 0.032 | 0.065 | 0.004 | -0.003 | |
| Street railways and bus lines | 400 | LS | -0.073 | 0.020 | -0.008 | -0.002 | |
| Railroads and railway express services | 401-402 | LS | 0.272 | 0.001 | 0.000 | 0.000 | |
| Air transportation | 421 | HS | 0.420 | 0.008 | 0.002 | -0.003 | |
| Newspaper publishing and printing | 172 | TR0 | 0.182 | 0.025 | 0.002 | -0.004 | |
| Professional and photo equipment | 371-390 | TR1 | 0.184 | 0.006 | -0.001 | -0.003 | |
| Entertainment and recreation services | 800-810 | HS | 0.176 | 0.012 | 0.005 | 0.002 | |
| College and university | 850 | HS | 0.495 | 0.041 | -0.002 | 0.001 | |
| Elementary and sec. schools | 842 | HS | 0.324 | 0.105 | -0.005 | 0.004 | |
| Other educational services | 851-861 | HS | 0.435 | 0.006 | 0.000 | 0.001 | |
| Social services | 871-881 | HS | 0.216 | 0.026 | 0.002 | 0.004 | |

Notes: TR=Tradables (randomly divided in two groups TR0 and TR1), HS=High-skill-intensive service, LS=Low-skill-intensive service.

TABLE A13. US Census MSA-Industry-Year Averaged Data: Descriptive Statistics

| Variable | N | Mean | Sdt Dev | Min | Max |
|--|-------|---------|----------|--------|--------|
| MSA-level Variables | | | | | |
| Female share 1980 | 1,377 | 0.457 | 0.208 | 0.041 | 0.889 |
| Average age 1980 | 1,377 | 37.534 | 2.512 | 29.109 | 45.240 |
| Share of immigrants 1980 | 1,377 | 0.033 | 0.051 | 0 | 0.580 |
| Log skill ratio in tradables 1980 | 1,377 | -1.504 | 0.391 | -3.466 | -0.784 |
| Δ log skill ratio in trad. 1990-1980 | 1,377 | 0.159 | 0.255 | -1.386 | 1.073 |
| Δ log skill ratio in trad. 2000-1990 | 1,376 | 0.342 | 0.220 | -0.570 | 1.418 |
| Industry employment shares in MSA: High skill services | | | | | |
| Employment 1980 | 765 | 858.975 | 1417.246 | 200 | 14577 |
| Employment share 1980 | 765 | 0.070 | 0.040 | 0.004 | 0.370 |
| Δ employment share 1990-1980 | 765 | 0.001 | 0.011 | -0.081 | 0.043 |
| Δ employment share 2000-1990 | 765 | -0.002 | 0.012 | -0.077 | 0.052 |
| Industry employment shares in MSA: Low skill services | | | | | |
| Employment 1980 | 397 | 720.106 | 921.112 | 200 | 7412 |
| Employment share 1980 | 397 | 0.060 | 0.044 | 0.002 | 0.314 |
| Δ employment share 1990-1980 | 397 | -0.002 | 0.020 | -0.215 | 0.057 |
| Δ employment share 2000-1990 | 397 | 0.003 | 0.014 | -0.081 | 0.063 |
| Industry employment shares in MSA: Tradables | | | | | |
| Employment 1980 | 215 | 691.805 | 1112.165 | 200 | 11901 |
| Employment share 1980 | 215 | 0.053 | 0.070 | 0.002 | 0.529 |
| Δ employment share 1990-1980 | 215 | -0.017 | 0.030 | -0.236 | 0.011 |
| Δ employment share 2000-1990 | 214 | -0.007 | 0.018 | -0.108 | 0.064 |

Notes: All 4,130 observations are MSA-industry-year weighted averages (personal weight) from IPUMS data 1980, 1990, and 2000. Panel of 163 Metropolitan Statistical Areas (MSAs), MSA-industry cells with less than 200 workers in 1980 are excluded. Skill ratio is defined as the number of workers with some-college education or more over the rest.