Data used in 'Housing Collateral, Consumption Insurance and Risk Sharing'

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All data discussed below are available in the MS Excel spreadsheet aggregate_data.xls.

1 Aggregate Financial Data

Market return R^{vw} It is computed in two ways.

First, for 1889-2002, the market return is the cum-dividend return on the Standard and Poor's composite stock price index. The market return is expressed in excess of a risk-free rate, the annual return on six-month prime commercial paper (source: Robert Shiller's web site). This market return is displayed in the second column of the Excel worksheet 'macrodata18892002', available on the author's web site.

Second, for 1927-2002: This is the value-weighted return on all NYSE, AMEX and NASDAQ stocks. The market return is expressed in excess of a risk-free rate, the annual return on a one-month Treasury bill rate. This market return is displayed in the second column of the worksheet 'findata19272002'. Source: Kenneth French web site, and original source for risk-free rate Ibbotson Associates.

Fama-French Benchmark Factors   1927-2002: SMB (Small Minus Big) is the average return on three small portfolios minus the average return on three big portfolios, SMB = 1/3 (Small Value + Small Neutral + Small Growth)- 1/3 (Big Value + Big Neutral + Big Growth). HML (High Minus Low) is the average return on two value portfolios minus the average return on two growth portfolios, HML = 1/2 (Small Value + Big Value) - 1/2 (Small Growth + Big Growth). See Fama-French, 1993, "Common Risk Factors in the Returns on Stocks and Bonds," Journal of Financial Economics, for a complete description of the factor returns. Source: Kenneth French' web site.

25 Size and Value Portfolios   1927-2002: The portfolios, which are constructed at the end of each June, are the intersections of 5 portfolios formed on size (market equity, ME) and 5 portfolios formed on the ratio of book equity to market equity (BE/ME). The size breakpoints for year t are the NYSE market equity quintiles at the end of June of t. BE/ME for June of year t is the

book equity for the last fiscal year end in t-1 divided by ME for December of t-1. The BE/ME breakpoints are NYSE quintiles. The portfolios for July of year t to June of t+1 include all NYSE, AMEX, and NASDAQ stocks for which we have market equity data for December of t-1 and June of t, and (positive) book equity data for t-1. The returns are expressed in excess of a risk-free rate, the annual return on a one-month Treasury bill rate. Source: Kenneth French' web site, described in more detail in Fama and French (1993) and Fama and French (1992).

2 Aggregate Housing Collateral Data

Home Mortgages 1890-1946: Census (1976) series N262, Residential Non-farm Mortgage Debt Outstanding. Original source: Grebler, Blank and Winnick (1956) and Goldsmith (1955). The Grebler et al. (1956) data are cross-checked with Federal Home Loan Board estimates for estimated home mortgage debt and financing activity, released in March 1956.

1945-2002: Flow of Funds, Federal Reserve Board, Balance sheet of households and non-profit organizations, Non-Farm Home Mortgages (FL153165105). This includes loans made under home equity lines of credit and home equity loans secured by junior loans. Data entries prior to 1945 are adjusted by a constant (.73) so that the 1945 values coincide.

Residential Wealth 1890-1953: Census (1976), series N197, Non-farm Residential Wealth. Original source: Grebler et al. (1956) (Tables 15 and A1). Excluded are clubs, motels, dormitories, hotels and the like. The series measures the current value of structures and land. Structures are reported in current dollars by transforming the value in constant dollars by the construction cost index (series N121 and139). Structures in constant dollars are obtained from an initial value of residential wealth in 1890 (based on 1890 Census report on real estate mortgages) and estimates of net capital formation in constant dollars. Land values are based on an estimation of the share of land value to total value using Federal Housing Administration data. These estimates are in Winnick (1953).

1945-2002: Flow of Funds, Federal Reserve Board, Balance sheet of households and non-profit organizations (B.100, row 4). Line 4: Market value of household real estate (code FL155035015). The market value of real estate wealth includes land and structures, inclusive vacant land, vacant homes for sale, second homes and mobile homes. It is a measure of housing owned by households; it excludes renter-occupied housing owned by for-profit organizations.

Data entries prior to 1945 are adjusted by a constant (.95) so that the 1945 values coincide.

Fixed Assets 1925-2001: Bureau of Economic Analysis (BEA), Fixed Asset Tables, Current cost of net stock of owner-occupied and tenant-occupied residential fixed assets for non-farm persons. This includes 1-4 units and 5+ units and is the sum of new units, additions and alterations, major replacements and mobile homes. The real value of the stock is calculated with a perpetual inventory method and a geometric depreciation pattern (see Katz and Herman (1997)). Depreciation rates

are estimated on the basis of resale prices of used assets and are 1.1 per annum for 1-4 units and 1.4 percent per annum for 5+ structures. The net stock refers to the stock after taking into account depreciation. The current cost or replacement cost values the real stock in year x at market prices prevailing in x. It is a measure of the economy's housing stock; both renter-occupied and owner-occupied.

3 Aggregate Macroeconomic Data

Labor Income plus Transfers 1929-2002: Bureau of economic Analysis, NIPA Table 2.1, Aggregate labor income is the sum of wage and salary disbursements (line 2), other labor income (line 9), and proprietors' income with inventory valuation and capital consumption adjustments (line 10). Transfers is transfer payments to persons (line 16) minus personal contributions for social insurance (line 23). Prior to 1929, labor income plus transfers is 0.65 times nominal GDP. Nominal GDP Between 1929 and 2002, the ratio of labor income plus transfers to nominal GDP stays between .65 and .70 and equals .65 in 1929 and 1930. Nominal GDP for 1889-1928 is from Maddison (2001).

Number of Households For 1889-1945: Census (1976), series A335, A2, and A7. Household data are for 1880, 1890 1900, 1910, 1920, 1930, and 1940, while the population data are annual. In constructing an annual series for the number of households, we assume that the number of persons per household declines linearly in between the decade observations. For 1945-2002: U.S. Bureau of the Census, table HH-1, Households by Type: 1940: Present.

Price Indices All Items (p^a) 1890-1912: Census (1976), Cost of Living Index (series L38). 1913-2002: CPI (BLS), base year is 1982-84. In parenthesis are the last letters of the BLS code. All codes start by CUUR0000S. Total price index (p^a): All items (code A0). Shelter (p^h): Item rent of primary residence (code EHA). Food (p^c) 1913-2002: Item food (code AF1). Apparel (p^{app}) 1913-2002: Item apparel (code AA).

Aggregate Consumption

   Total Consumption Expenditures C 1909-1928: Census (1976), Total Consumption Expenditures (series G470). The observations are for 1909, 1914, 1919, 1921, 1923, 1925, and 1927. For 1929-2002: Bureau of economic Analysis, NIPA table 2.2. Total Consumption expenditures is personal consumption expenditures (line 1).

   Housing Services Consumption C_{rent} 1909-1928: Census (1976), Rent and Imputed Rent (series G477). The observations are for 1909, 1914, 1919, 1921, 1923, 1925, and 1927. For 1929-2002: Bureau of economic Analysis, NIPA table 2.2. Housing services consumption H is nominal consumption on housing services (line 14).

Food Consumption C_{food} 1909-1928: Census (1976), Food (series G471 + G472 + G473). The observations are for 1909, 1914, 1919, 1921, 1923, 1925, and 1927. For 1929-2002: Bureau of economic Analysis, NIPA table 2.2. Nominal consumption of food (line 7).

Apparel Consumption C_{cloth} For 1909-1928: Census (1976), Apparel (series G474). The observations are for 1909, 1914, 1919, 1921, 1923, 1925, and 1927. For 1929-2002: Bureau of economic Analysis, NIPA table 2.2. Nominal consumption of clothing and shoes (line 8).

Housing Expenditure share A It is computed in two ways. For 1909-2002, the housing expenditure share is computed as rent and imputed rent divided by total consumption expenditures minus rent and imputed rent and minus apparel. The observations are for 1909, 1914, 1919, 1921, 1923, 1925, and 1927. The cell entries for 1920, 22, 24, 26, and 28 are the average of the adjacent cells. For 1929-2002: The housing expenditure share is A is nominal consumption on housing services (line 14) divided by nominal consumption of non-durables (line 6) and services (line 13) minus clothing and shoes (line 8).

Real Per Household Consumption Growth dc It is computed in two ways. First, for 1922-2002, we construct *real* nondurable consumption, as total consumption deflated by the all items CPI minus rent deflated by the rent component of the CPI minus clothes and shoes deflated by the apparel CPI component. Per household variables are obtained by dividing by the number of households. The missing data for 1924, 26, and 28 are interpolated using Mehra and Prescott (1985) real per capita consumption growth. The growth rate dc_1 is the log difference multiplied by 100. Second, for 1930-2002, we define *real* nondurable and services consumption (NDS), as nondurable consumption deflated by the NIPA nondurable price index plus services deflated by the NIPA services price index minus housing services deflated by the NIPA housing services price index minus clothes and shoes deflated by the NIPA clothes and shoes price index. The basis of all NIPA price deflators is 1996=100. They are not the same as the corresponding CPI components from the BLS. Per household variables are obtained by dividing by the number of households. The growth rate dc_2 is the log difference of NDS multiplied by 100.

Rental Price Growth $d\rho$ It is computed in two ways. First, for 1913-2002 we use the ratio of CPI rent component to the CPI food component: $\rho = \frac{p^h}{p^c}$. The growth rate $d\rho_1$ is the log difference multiplied by 100. Second, for 1930-2002, we construct nominal non-durable consumption (non-durables plus services excluding housing services and excluding clothes and shoes) and real non-durable consumption (where each item is separately deflated by its own NIPA price deflator, basis 1996=100). The deflator for nondurable consumption is then the ratio of the nominal to the real non-durable consumption series. The relative rental price is then the ratio of the price deflator for housing services to the price deflator for nondurable consumption. The growth rate $d\rho_2$ is the log difference multiplied by 100.

Financial Wealth In order to construct the consumption wealth ratio at annual frequency (Lettau and Ludvigson (2001)) we need a measure of financial wealth. For 1945-2002: Flow of Funds, Federal Reserve Board, Balance sheet of households and non-profit organizations (B.100). Line 8: Financial Asses (FL154090005.Q). For 1926-1945: Total deposits, all commercial banks, NBER Macro-history database (series 14145). We assume that the ratio of deposits to total wealth decreases slowly from .205 to .185, its level in 1945 (FoF deposits series).

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