Accounting for Wealth Inequality Dynamics: Methods, Estimates and Simulations for France APPENDIX

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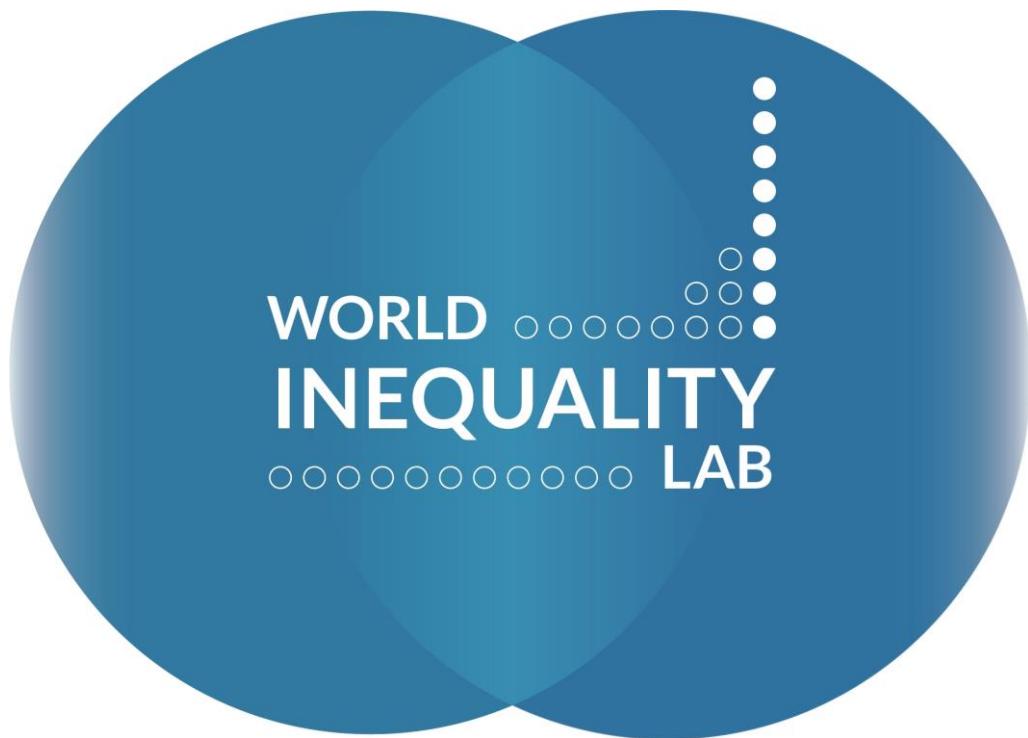
Accounting for Wealth Inequality Dynamics:

Methods, Estimates and Simulations for France

Data Appendix

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Appendix A: Detailed equations on the steady-state formula

In the Section 4 of the main paper, we present different simulation exercises derived from the transition equation. This section reports the technical details relative to the steady-state formula for wealth concentration along with two simulations of steady-state trajectories (Figure 12 of the core paper).[1]

Section A.1. Steady-state formula

We start from a simple accounting equation to describe wealth accumulation between period t and t+1:

$$W_{t+1} = (1 + p_t)(1 + q_t)\left(W_t + s_t\left(Y_{L_t} + r_t W_t\right)\right)$$

where p is the inflation rate, q is the real rate of capital gain, W is the aggregate wealth, s is the saving rate (in % of pretax income), Y_L is the labor income and r is the rate of return.

At t+1, the wealth share of wealth group p is:

$$sh^p_{W_{t+1}} = \frac{W^p_{t+1}}{W_{t+1}} = \frac{1 + q^p_t}{1 + q_t} \frac{W^p_t + s^p_t(Y^p_{L_t} + r^p_t W^p_t)}{W_t + s_t(Y_{L_t} + r_t W_t)}$$

Using the fact that $W_t/Y_{L_t} = (W_t/Y_t)/(Y_t/Y_{L_t}) = \beta_t/(1 - \alpha_t)$ and dividing by W each term of the fraction, we obtain:

$$sh^p_{W_{t+1}} = \frac{1 + q^p_t}{1 + q_t} \frac{sh^p_{W_t}(1 + s^p_t r^p_t) + s^p_t(\frac{1 - \alpha_t}{\beta_t})sh^p_{Y_{L_t}}}{1 + s_t r_t + s_t(\frac{1 - \alpha_t}{\beta_t})}$$

where α is the capital share and β is the wealth-income ratio.

Assume the relative capital gain channel disappears, i.e. all asset prices rise at the same rate in the long run (which must happen at some point, otherwise there will be only one asset left), and this rate is the same as consumer price inflation (otherwise wealth-income ratio would go to infinity). At the steady state, $sh^p_{W_t} = sh^p_W$ and is equal to:

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[1] An exhaustive description of the simulation exercises can be found in Appendix E of the working paper version of this article.

$$sh_W^p = \frac{s^p(\frac{1-\alpha}{\beta})}{s\left(r + \frac{1-\alpha}{\beta}\right) - s^p.r^p} sh_{Y_L}^p \quad (1)$$

Using $\beta = s/g$ and $\alpha = sr/g$,[2] the steady-state formula (1) can alternatively be computed as:

$$sh_W^p = (1 + \frac{s^p r^p - sr}{g - s^p r^p})\frac{s^p}{s} sh_{Y_L}^p \quad (2)$$

with

$$\begin{cases} r = r^p.sh_W^p + r^{1-p}\left(1 - sh_W^p\right) \\ s = s^p.sh_Y^p + s^{1-p}\left(1 - sh_Y^p\right) \\ sh_Y^p = \frac{s}{g}\left(r^p.sh_W^p - r.sh_{YL}^p\right) + sh_{YL}^p \,{}^3 \end{cases} \quad (3)$$

The resolution of the system *(2)* and *(3)* gives:

$$sh_W^p = \frac{s^p.sh_{Y_L}^p\ (g - s^{1-p}r^{1-p})}{(g - s^p r^p)\left[s^{1-p}\left(1 - sh_{Y_L}^p\right) + s^p.sh_{Y_L}^p\right] + s^p.sh_{Y_L}^p\ (s^p r^p - s^{1-p}r^{1-p})} \quad (4)$$

The steady-state top 10% wealth shares derived from (4) are presented in Tables E1 and E2. Table E1 shows the top 10% steady-state wealth share based on the historical values of the parameters over different time periods (1970-1984 or 1984-2014). Table E2 reports six hypothetic scenarios illustrating the relative importance of the different parameters (growth rate, inequality of rates of return and saving rates) on the steady-state wealth shares.

Section A.2. Steady-state trajectories

Tables E3 and E4 of the Appendix E show the steady-state wealth share trajectories until 2150. These simulations are based on the historical values of the parameters g, Y_L^p, r^p, s^p, s^{1-p}, r^{1-p} computed over 1970-1984 or 1984-2014 periods and that we assume to be constant over time. Figure 17 of the

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[2] Using $\beta = W/Y = s/g$, $\alpha = rW/Y = r.\beta = rs/g$ at the steady state.

[3] sh_Y^p is obtained by replacing $\beta = s/g$ and $\alpha = rs/g$ in $sh_Y^p = r^p.sh_w^p.\beta + sh_{YL}^p(1 - \alpha)$.

main paper is derived from these tables. We now present the different equations used to estimate these trajectories.

The wealth share of the group p (e.g. top 10%) at time t+1 can be derived from the following equation:

$$sh^p_{wt+1} = W^p_{t+1}/W_{t+1} = (W^p_t + s^p_t.Y^p_t)/(W_t + s_t.Y_t)$$

By dividing by Y_t each member of the fraction and using the fact that $W^p_t/Y_t = \beta_t.sh^p_{Wt}$, we obtain:

$$sh^p_{wt+1} = (\beta_t.sh^p_{Wt} + s^p_t.sh^P_{Yt})/(\beta_t + s_t)$$

As $W_{t+1} = W_t + S_t$, by dividing successively each member of the equation by Y_t and Y_{t+1} and using the fact that $g_t = Y_{t+1}/Y_t$, $\beta_t = W_t/Y_t$ and $s_t = S_t/Y_t$, the wealth-income ratio at time t+1 is equal to:

$$\beta_{t+1} = (\beta_t + s_t)/(1 + g_t)$$

The aggregate rate of return and the capital share at time t+1 are respectively equal to:

$$r_{t+1} = r^p_{t+1} \cdot sh^p_{Wt} + r^{1-p}_{t+1}(1 - sh^p_{Wt+1}), \quad \alpha_{t+1} = r_{t+1}.\beta_{t+1}$$

The expression of sh^P_{Yt+1} is given by:

$$sh^p_{Yt+1} = (r^p_{t+1}W^p_{t+1} + Y^p_{L_{t+1}})/(r_{t+1}W_t + Y_{L_{t+1}})$$

Dividing each member of the equation by W^p_{t+1} and using the fact that

$Y_{Lt}/W_t = (1 - \alpha_t)/\beta_t$, $Y^p_{Lt}/W_t = (1 - \alpha_t)sh^P_{YLt}/\beta_t$ and $\alpha_t = r_t.\beta_t$, we obtain finally:

$$sh^p_{Yt+1} = \beta_{t+1}.r^p_{t+1}.sh^p_{Wt} + (1 - \alpha_{t+1}).sh^P_{YLt+1}$$

Finally, we also need to compute the aggregate saving rate at time t+1 which is equal to:

$$s_{t+1} = s^p_{t+1} \cdot sh^p_{Yt+1} + s^{1-p}_{t+1}(1 - sh^p_{Yt+1})$$

Section A.3. Steady-state formula with capital depreciation or appreciation

We now extend the formula assuming some exogenous rate of capital depreciation or appreciation q. q<0 corresponds to depreciation and q>0 to appreciation. Note that the rate of capital gains could be endogenized via multi-sector growth models with differing rates of technical progress. Here, we take it as given for simplicity.

In this new framework, the steady-state wealth share formula remains equal to (1) as $q_t^p = q_t = q$ and is the following:

$$sh_W^p = \frac{s^p(\frac{1-\alpha}{\beta})}{s\left(r + \frac{1-\alpha}{\beta}\right) - s^p.r^p} sh_{Y_L}^p \quad (1)$$

The only change comes from the wealth-income ratio β and the share of capital income α that become respectively $\beta = W/Y = s(1+q)/(g-q)$ and $\alpha = rW/Y = r.\beta = r.s(1+q)/(g-q)$ at the steady state.[4]

Starting from the steady-state formula (1) and using the new expression of β and α, we end up with:

$$sh_W^p = (1 + \frac{s^p r^p - sr}{\frac{g-q}{1+q} - s^p r^p}) \frac{s^p}{s} sh_{Y_L}^p \quad (5)$$

As compared to the steady-state formula (2), the introduction of an exogenous rate of capital or depreciation mitigates the impact of growth on wealth concentration.

Appendix B: Wealth inequality breakdowns by age, 1970-2014

We now present our detailed wealth inequality breakdowns by age for the 1970-2014 period.

If we first look at the age-wealth profile, we find that average wealth is always very small at age 20 (less than 15% of average adult wealth), then rises sharply with age until age 50-55, and finally stabilizes or slightly declines at very high levels (around 120%-150% of average adult wealth) at ages 60-85. This age-wealth profile appears to be relatively stable over the 1970-2014 period (see Online Appendix Figure 24).[5] The key difference with the standard Modigliani triangle (implied by a pure life-cycle model with no bequest) is that average wealth does not seem to decline at high ages: it

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[4] At the steady-state, $W_{t+1}/Y_{t+1} = W_t/Y_t$. Using $W_{t+1} = (1+q)[W_t + sY_t]$ and $Y_{t+1} = (1+g)Y_t$, we obtain $\beta = s(1+q)/(g-q)$ and $\alpha = rW/Y = r.\beta = r.s(1+q)/(g-q)$.

[5] The complete series of age-wealth profiles over the 1970-2014 period are reported in Table B21 of Appendix B in the working paper version of this article.

remains stable at very high levels, which means that old-age individuals die with substantial wealth and transmit it to their offspring. Note also that old-age individuals make very substantial inter vivos gifts in France, so that average wealth at high ages would be even higher without these gifts, particularly at the end of the period. Gifts are made on average about 10 years before death, and the aggregate gift flow has increased from about 20%-30% of the aggregate bequest flow in the 1970s to as much as 80% of the aggregate bequest flow in the 2000s-2010s (see Piketty, 2011).[6]

Next, it is interesting to see that wealth inequality is almost as large within each age group than for the population taken as a whole (see Online Appendix Figure 25). For instance, if we look at the distribution of wealth within the individuals aged 60-year-old and over, we find a top 10% wealth share equal to 56% in 1970 (vs 59% for the population taken as a whole) and to 49% in 2012 (vs 55% for the population taken as a while).[7]

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[6] In other words, when we observe in Online Appendix Figure 24 that the average wealth of 80-year-old individuals is about 140% of average adult wealth in 2010, it is important to keep in mind that this is the average wealth of individuals who have already given away almost half of their wealth (on average).

[7] Note that our wealth-age profiles reflect both age and cohort effects. However, since age-wealth profiles turn out to be stable over time, cohorts effects do not seem to lead to major changes across time.

year	Total Net Wealth	Housing (net of debt)	Business assets	Financial assets	Equities, shares and bonds	Deposits and savings accounts	Life insurance and pension funds	memo: Equities	memo: Bonds
1970	**4,3%**	6,9%	5,9%	**1,1%**	3,9%	-4,1%	6,5%	-0,1%	6,2%
1971	**6,0%**	6,5%	8,4%	**3,9%**	10,2%	-4,8%	6,2%	19,1%	5,6%
1972	**5,8%**	8,3%	7,1%	**3,2%**	9,9%	-5,6%	4,6%	27,9%	0,9%
1973	**3,6%**	11,2%	4,7%	**-3,0%**	0,2%	-8,2%	3,1%	-2,3%	1,3%
1974	**2,7%**	5,9%	4,6%	**-1,3%**	4,3%	-8,2%	1,1%	4,6%	3,9%
1975	**3,3%**	6,0%	5,2%	**-0,4%**	4,9%	-6,4%	1,6%	14,6%	1,1%
1976	**4,3%**	7,4%	5,5%	**0,8%**	4,6%	-4,4%	10,4%	6,5%	3,7%
1977	**5,5%**	11,6%	6,5%	**-0,8%**	10,3%	-4,7%	-27,2%	23,7%	6,1%
1978	**5,9%**	12,2%	6,1%	**-0,5%**	10,7%	-4,5%	-28,7%	25,3%	6,6%
1979	**4,0%**	6,7%	2,2%	**2,8%**	10,6%	-4,9%	1,0%	22,1%	7,5%
1980	**2,4%**	5,1%	0,7%	**0,9%**	5,6%	-4,3%	1,7%	14,1%	3,5%
1981	**1,3%**	2,2%	-0,1%	**1,8%**	7,0%	-3,5%	1,3%	20,1%	4,1%
1982	**3,1%**	1,7%	2,5%	**5,8%**	13,8%	-1,6%	4,3%	41,7%	7,4%
1983	**3,9%**	1,8%	1,7%	**8,5%**	17,1%	0,5%	7,0%	43,0%	8,9%
1984	**4,1%**	1,7%	-0,9%	**10,6%**	19,5%	1,7%	8,7%	40,0%	10,2%
1985	**6,7%**	4,1%	-0,2%	**13,9%**	24,1%	3,0%	8,7%	41,1%	12,3%
1986	**8,4%**	8,1%	2,2%	**12,2%**	17,5%	5,0%	12,2%	17,0%	18,0%
1987	**8,3%**	9,2%	1,2%	**11,2%**	17,1%	3,1%	9,8%	20,1%	14,0%
1988	**11,7%**	11,2%	3,7%	**15,9%**	24,9%	3,8%	10,9%	32,7%	14,8%
1989	**8,5%**	9,5%	7,0%	**8,7%**	10,8%	4,6%	10,8%	8,4%	14,4%
1990	**4,9%**	4,3%	4,0%	**6,1%**	7,4%	2,3%	10,2%	2,3%	15,8%
1991	**4,2%**	0,6%	-0,2%	**9,5%**	12,9%	3,3%	9,3%	11,0%	15,6%
1992	**4,7%**	-0,3%	0,8%	**10,6%**	13,3%	5,1%	10,6%	14,5%	11,8%
1993	**5,0%**	3,3%	4,1%	**6,9%**	6,8%	4,6%	10,5%	4,9%	9,5%
1994	**4,4%**	3,9%	4,2%	**5,2%**	4,4%	4,2%	8,9%	0,4%	9,2%
1995	**6,2%**	3,4%	4,2%	**8,9%**	12,0%	3,1%	7,9%	16,5%	7,2%
1996	**8,1%**	5,6%	6,9%	**10,1%**	14,2%	2,9%	8,3%	20,4%	7,5%
1997	**9,2%**	8,0%	9,7%	**9,9%**	13,8%	2,8%	8,7%	18,0%	8,7%
1998	**13,9%**	14,4%	16,7%	**13,2%**	19,5%	3,1%	9,7%	28,7%	7,7%
1999	**12,3%**	15,8%	17,8%	**9,4%**	14,2%	-0,3%	7,7%	19,2%	6,5%
2000	**7,7%**	15,0%	14,6%	**2,1%**	1,4%	-0,6%	5,3%	-2,2%	7,5%
2001	**7,5%**	16,3%	13,9%	**0,4%**	-2,2%	2,4%	3,8%	-7,3%	6,0%
2002	**11,3%**	19,8%	15,0%	**4,0%**	4,8%	2,2%	4,0%	5,6%	3,9%
2003	**14,3%**	22,6%	15,8%	**6,9%**	10,6%	0,4%	5,8%	16,1%	2,8%
2004	**14,6%**	21,9%	15,7%	**7,3%**	11,4%	-0,1%	6,2%	16,8%	2,7%
2005	**12,7%**	16,6%	11,8%	**8,8%**	13,8%	-0,2%	7,5%	20,6%	1,7%
2006	**8,4%**	10,2%	6,2%	**7,1%**	10,7%	-0,1%	6,4%	14,9%	2,2%
2007	**0,1%**	0,8%	-1,0%	**-0,3%**	-3,1%	0,7%	2,9%	-6,5%	4,5%
2008	**0,2%**	-1,8%	-2,0%	**3,3%**	1,2%	3,4%	5,6%	-2,4%	7,8%
2009	**5,8%**	5,5%	4,8%	**6,5%**	10,7%	1,2%	5,0%	15,6%	3,1%
2010	**6,5%**	8,4%	8,2%	**4,1%**	5,4%	1,0%	4,4%	7,2%	2,5%
2011	**3,5%**	2,4%	2,8%	**4,9%**	7,5%	0,8%	4,4%	10,4%	3,0%
2012	**2,9%**	0,1%	0,7%	**6,8%**	11,4%	0,8%	5,3%	16,3%	2,9%
2013	**2,6%**	0,2%	1,5%	**5,4%**	8,3%	0,9%	5,0%	11,3%	2,7%

Table 1: Annual total returns on personal wealth by asset class (incl. real capital gains and gross of all taxes)

Source: Table A23a, Appendix A, Garbinti, Goupille-Lebret and Piketty (2017)

Notes: Real yields on equities, debt assets and life insurance include primary surplus from corporte sector (corporate taxes and retained earnings) accruing to households. Rental income includes property taxes. All income are gross of production taxes. Corporate savings are deducted from capital gains on financial assets except deposits.

Year	Total Net Wealth	Housing (net of debt)	Business assets	Financial assets	Equities & bonds	Deposits and savings accounts	Life insurance and pension funds	Memo: Equities	Memo: Bonds
1970	**6,2%**	3,9%	5,1%	**9,2%**	13,0%	2,4%	14,4%	17,8%	10,0%
1971	**6,2%**	3,8%	5,1%	**9,5%**	13,8%	2,7%	14,6%	21,3%	10,0%
1972	**6,1%**	3,6%	5,2%	**9,1%**	13,3%	2,7%	13,9%	21,6%	9,1%
1973	**6,1%**	2,9%	5,1%	**9,9%**	14,3%	3,4%	15,5%	19,0%	11,6%
1974	**6,1%**	1,7%	4,9%	**11,7%**	17,2%	4,9%	13,8%	23,7%	14,1%
1975	**5,3%**	2,2%	4,5%	**9,3%**	13,5%	4,3%	12,0%	21,6%	10,3%
1976	**5,2%**	1,9%	4,5%	**9,6%**	14,0%	4,7%	12,8%	22,6%	10,8%
1977	**5,2%**	1,6%	4,4%	**9,9%**	15,0%	4,7%	12,1%	27,6%	11,0%
1978	**5,1%**	2,1%	4,5%	**9,3%**	13,7%	4,6%	10,8%	26,5%	10,1%
1979	**5,1%**	1,8%	4,5%	**9,7%**	14,2%	4,9%	11,1%	28,6%	10,4%
1980	**4,8%**	1,1%	4,5%	**9,8%**	13,9%	5,1%	11,5%	29,0%	10,3%
1981	**5,0%**	1,1%	4,3%	**10,9%**	15,4%	6,1%	11,5%	32,4%	11,5%
1982	**4,9%**	0,9%	4,6%	**10,8%**	15,0%	6,4%	12,2%	29,0%	11,9%
1983	**5,1%**	1,1%	4,7%	**10,8%**	15,0%	6,4%	12,9%	25,9%	11,9%
1984	**5,5%**	1,4%	4,6%	**11,3%**	15,6%	6,4%	13,7%	23,3%	12,6%
1985	**6,0%**	1,6%	5,0%	**11,8%**	15,8%	6,5%	14,3%	19,3%	13,8%
1986	**6,6%**	1,8%	5,3%	**12,5%**	16,6%	6,1%	16,6%	16,7%	16,5%
1987	**6,9%**	2,2%	5,4%	**12,6%**	17,2%	5,5%	15,0%	19,7%	14,7%
1988	**7,4%**	2,3%	5,6%	**13,4%**	17,7%	6,0%	16,5%	17,3%	18,2%
1989	**7,6%**	2,0%	6,2%	**13,5%**	17,1%	6,3%	15,7%	15,6%	19,4%
1990	**7,4%**	1,9%	6,3%	**13,2%**	16,9%	6,1%	14,4%	15,8%	18,5%
1991	**7,1%**	2,2%	6,1%	**12,5%**	15,8%	5,9%	13,2%	15,2%	16,7%
1992	**7,5%**	2,8%	6,5%	**12,2%**	14,7%	5,6%	14,4%	13,9%	15,8%
1993	**7,4%**	3,4%	6,5%	**11,0%**	13,1%	5,2%	12,9%	12,2%	14,3%
1994	**7,5%**	4,0%	6,8%	**10,6%**	12,9%	4,8%	11,8%	12,6%	13,3%
1995	**7,6%**	4,4%	7,1%	**10,1%**	12,4%	4,3%	11,1%	13,5%	11,3%
1996	**7,5%**	5,0%	7,6%	**9,3%**	11,0%	3,8%	11,1%	12,0%	9,9%
1997	**7,7%**	5,3%	7,6%	**9,2%**	10,5%	3,7%	11,6%	11,1%	9,7%
1998	**7,6%**	5,5%	7,6%	**8,9%**	10,0%	3,3%	11,4%	10,7%	9,1%
1999	**7,0%**	5,4%	7,4%	**8,0%**	8,4%	2,5%	11,5%	9,1%	7,4%
2000	**6,8%**	5,0%	6,9%	**7,9%**	8,4%	2,9%	10,5%	8,4%	8,4%
2001	**6,6%**	4,5%	6,7%	**8,0%**	9,0%	3,4%	9,5%	8,8%	9,2%
2002	**6,0%**	4,2%	6,3%	**7,4%**	8,8%	2,8%	8,3%	10,0%	7,3%
2003	**5,6%**	3,8%	5,7%	**7,3%**	8,9%	2,4%	8,1%	10,7%	6,3%
2004	**5,3%**	3,3%	5,3%	**7,3%**	8,9%	2,3%	8,2%	10,7%	6,1%
2005	**4,8%**	2,9%	4,7%	**6,9%**	8,5%	2,1%	7,8%	10,2%	5,4%
2006	**4,5%**	2,5%	4,5%	**6,8%**	8,1%	2,5%	7,6%	9,0%	6,3%
2007	**4,4%**	2,2%	4,5%	**7,1%**	8,5%	3,1%	7,6%	8,8%	7,8%
2008	**4,5%**	2,0%	4,7%	**7,4%**	9,4%	3,5%	7,2%	10,0%	8,2%
2009	**3,9%**	2,4%	4,5%	**5,6%**	7,6%	2,2%	5,3%	9,5%	4,6%
2010	**4,0%**	2,5%	4,6%	**5,5%**	7,3%	1,6%	5,8%	9,4%	3,7%
2011	**3,9%**	2,3%	4,4%	**5,7%**	8,0%	1,8%	5,3%	10,4%	4,2%
2012	**3,6%**	2,3%	4,5%	**4,9%**	6,8%	1,7%	4,7%	8,7%	3,6%
2013	**3,6%**	2,5%	4,7%	**4,6%**	6,2%	1,4%	4,6%	8,0%	2,9%
2014	**3,5%**	2,6%	4,9%	**4,3%**	6,1%	1,2%	4,2%	7,9%	2,5%

Table 2: Annual flow returns on personal wealth by asset class (excl. real capital gains and gross of all taxes)

Source: Table A24a, Appendix A, Garbinti, Goupille-Lebret and Piketty (2017)
Notes: Rates of returns are computed by dividing pre-tax capital income by private wealth from National Accounts Retained earnings and corporate tax accruing to household are added to flows from bonds, equities and life insurance and pension funds.Real yields on equities, debt assets and life insurance include primary surplus from corporte sector (corporate taxes and retained earnings) accruing to households. Rental income includes property taxes. All income are gross of production taxes.

Year	Net personal wealth	Housing (net of debt)	Business assets	Financial assets	Equities & bonds	Deposits and savings accounts	Life insurance and pension funds	memo: Equities	memo: Bonds
1970	**-1,9%**	3%	1%	**-8%**	-9%	-7%	-8%	-18%	-4%
1971	**-0,2%**	3%	3%	**-4%**	1%	-3%	-7%	-18%	-4%
1972	**-0,2%**	5%	2%	**-5%**	11%	-7%	-8%	-2%	-4%
1973	**-2,6%**	8%	0%	**-12%**	-19%	-9%	-12%	6%	-8%
1974	**-3,4%**	4%	0%	**-13%**	-18%	-10%	-13%	-21%	-10%
1975	**-2,0%**	4%	1%	**-9%**	-6%	-9%	-11%	-19%	-10%
1976	**-0,9%**	5%	1%	**-8%**	-15%	-6%	-9%	-7%	-9%
1977	**0,3%**	10%	2%	**-10%**	-3%	-5%	-9%	-16%	-7%
1978	**0,8%**	10%	2%	**-10%**	-1%	-3%	-9%	-4%	-5%
1979	**-1,0%**	5%	-2%	**-7%**	-7%	-3%	-10%	-1%	-3%
1980	**-2,4%**	4%	-4%	**-9%**	-16%	-7%	-9%	-6%	-3%
1981	**-3,7%**	1%	-4%	**-10%**	-14%	-8%	-10%	-15%	-7%
1982	**-1,8%**	1%	-2%	**-6%**	11%	-5%	-8%	-12%	-7%
1983	**-1,2%**	1%	-3%	**-3%**	16%	-3%	-6%	13%	-5%
1984	**-1,4%**	0%	-6%	**-1%**	17%	-2%	-5%	17%	-3%
1985	**0,7%**	2%	-5%	**3%**	24%	0%	-4%	17%	-2%
1986	**1,8%**	6%	-3%	**1%**	3%	5%	-1%	22%	-1%
1987	**1,4%**	7%	-4%	**1%**	4%	2%	-2%	0%	2%
1988	**4,3%**	9%	-2%	**5%**	20%	1%	-2%	0%	-1%
1989	**1,0%**	7%	1%	**-3%**	-4%	-1%	-2%	15%	-3%
1990	**-2,5%**	2%	-2%	**-5%**	-11%	0%	-4%	-7%	-5%
1991	**-2,9%**	-2%	-6%	**-1%**	-2%	2%	-3%	-14%	-3%
1992	**-2,7%**	-3%	-6%	**0%**	3%	-1%	-1%	-4%	-1%
1993	**-2,3%**	0%	-2%	**-2%**	-5%	-2%	-1%	1%	-4%
1994	**-3,1%**	0%	-3%	**-4%**	-10%	-2%	-1%	-7%	-5%
1995	**-1,4%**	-1%	-3%	**0%**	6%	-2%	-1%	-12%	-4%
1996	**0,6%**	1%	-1%	**2%**	11%	0%	-1%	3%	-4%
1997	**1,5%**	3%	2%	**3%**	10%	1%	-1%	8%	-2%
1998	**6,4%**	9%	9%	**7%**	21%	1%	0%	7%	-1%
1999	**5,3%**	10%	10%	**3%**	13%	1%	-3%	18%	-1%
2000	**0,9%**	10%	8%	**-5%**	-9%	1%	-4%	10%	-1%
2001	**0,9%**	12%	7%	**-7%**	-15%	-2%	-1%	-11%	-1%
2002	**5,3%**	16%	9%	**-2%**	-3%	-2%	-1%	-16%	-3%
2003	**8,7%**	19%	10%	**1%**	8%	-2%	-2%	-4%	-3%
2004	**9,3%**	19%	10%	**1%**	8%	-2%	-2%	5%	-4%
2005	**7,9%**	14%	7%	**3%**	12%	-3%	-2%	6%	-3%
2006	**4,0%**	8%	2%	**1%**	7%	-3%	-3%	10%	-4%
2007	**-4,3%**	-1%	-6%	**-7%**	-14%	-2%	-2%	6%	-4%
2008	**-4,3%**	-4%	-7%	**-3%**	-11%	0%	0%	-15%	-3%
2009	**1,9%**	3%	0%	**2%**	7%	-1%	-1%	-12%	0%
2010	**2,6%**	6%	4%	**-1%**	-1%	-1%	-1%	6%	-1%
2011	**-0,4%**	0%	-2%	**0%**	1%	-1%	-1%	-2%	-1%
2012	**-0,6%**	-2%	-4%	**2%**	8%	-1%	-1%	0%	-1%
2013	**-1,0%**	-2%	-3%	**1%**	3%	0%	-1%	8%	-1%

Source: Table A25a, Appendix A, Garbinti, Goupille-Lebret and Piketty (2017)

Year	All	Bottom 50%	Middle 40%	Top 10%	Top 1%
	Table 5: Flow return by wealth group (gross of all taxes)				
1970	**6,2%**	3,4%	5,0%	7,2%	8,8%
1971	**6,2%**	3,6%	5,0%	7,3%	8,9%
1972	**6,1%**	3,5%	4,9%	7,1%	8,6%
1973	**6,1%**	4,0%	4,7%	7,3%	8,9%
1974	**6,1%**	4,7%	4,4%	7,5%	9,4%
1975	**5,3%**	4,3%	4,1%	6,2%	7,5%
1976	**5,2%**	4,5%	4,0%	6,2%	7,5%
1977	**5,2%**	4,5%	3,9%	6,2%	7,6%
1978	**5,1%**	4,5%	4,0%	6,0%	7,2%
1979	**5,1%**	4,6%	3,9%	6,0%	7,3%
1980	**4,8%**	4,5%	3,5%	5,8%	7,0%
1981	**5,0%**	5,1%	3,7%	5,9%	7,2%
1982	**4,9%**	5,1%	3,7%	5,9%	7,0%
1983	**5,1%**	5,2%	4,0%	6,0%	7,2%
1984	**5,5%**	5,3%	4,4%	6,4%	7,6%
1985	**6,0%**	5,5%	4,8%	7,0%	8,0%
1986	**6,6%**	5,5%	5,4%	7,7%	8,8%
1987	**6,9%**	5,1%	5,6%	8,2%	9,5%
1988	**7,4%**	5,5%	6,1%	8,7%	9,6%
1989	**7,6%**	5,5%	6,2%	8,9%	10,0%
1990	**7,4%**	5,1%	6,0%	8,8%	10,1%
1991	**7,1%**	5,0%	5,9%	8,4%	9,9%
1992	**7,5%**	5,6%	6,4%	8,5%	9,8%
1993	**7,4%**	5,3%	6,5%	8,3%	9,5%
1994	**7,5%**	5,2%	6,6%	8,5%	10,0%
1995	**7,6%**	5,1%	6,5%	8,6%	10,2%
1996	**7,5%**	5,0%	6,4%	8,6%	9,9%
1997	**7,7%**	5,2%	6,6%	8,6%	9,7%
1998	**7,6%**	5,2%	6,4%	8,5%	9,4%
1999	**7,0%**	5,0%	6,1%	7,8%	8,3%
2000	**6,8%**	4,8%	5,8%	7,5%	8,1%
2001	**6,6%**	4,6%	5,5%	7,4%	8,3%
2002	**6,0%**	4,2%	4,9%	6,9%	7,9%
2003	**5,6%**	3,8%	4,5%	6,5%	7,7%
2004	**5,3%**	3,6%	4,1%	6,2%	7,6%
2005	**4,8%**	3,3%	3,6%	5,7%	7,1%
2006	**4,5%**	3,2%	3,4%	5,3%	6,6%
2007	**4,4%**	3,2%	3,2%	5,4%	6,6%
2008	**4,5%**	3,0%	3,2%	5,5%	6,9%
2009	**3,9%**	2,7%	3,0%	4,7%	5,9%
2010	**4,0%**	2,7%	2,9%	4,7%	6,0%
2011	**3,9%**	2,5%	2,8%	4,7%	6,2%
2012	**3,6%**	2,5%	2,7%	4,3%	5,4%
2013	**3,6%**	2,6%	2,8%	4,2%	5,2%
2014	**3,5%**	2,6%	2,8%	4,1%	5,1%

Year	All	Bottom 50%	Middle 40%	Top 10%	Top 1%
1970	**-1,9%**	-6,2%	-0,8%	-2,3%	-4,0%
1971	**-0,2%**	-3,9%	0,6%	0,7%	-0,2%
1972	**-0,2%**	-3,9%	1,1%	0,4%	-0,3%
1973	**-2,6%**	-9,5%	-0,2%	-3,5%	-5,6%
1974	**-3,4%**	-9,8%	-1,7%	-3,4%	-5,1%
1975	**-2,0%**	-7,0%	-0,6%	-1,6%	-2,6%
1976	**-0,9%**	-6,0%	0,4%	-1,1%	-2,3%
1977	**0,3%**	-6,2%	3,4%	1,7%	1,0%
1978	**0,8%**	-5,0%	3,8%	2,0%	1,5%
1979	**-1,0%**	-3,9%	0,6%	-1,1%	-1,4%
1980	**-2,4%**	-5,6%	-0,9%	-3,1%	-3,8%
1981	**-3,7%**	-6,2%	-2,6%	-4,1%	-4,6%
1982	**-1,8%**	-2,9%	-0,9%	-1,3%	-1,2%
1983	**-1,2%**	-1,0%	-0,3%	-0,8%	-0,5%
1984	**-1,4%**	0,1%	-0,3%	-1,2%	-0,8%
1985	**0,7%**	3,3%	2,0%	1,0%	1,9%
1986	**1,8%**	2,2%	3,1%	1,1%	1,0%
1987	**1,4%**	1,7%	2,9%	0,7%	0,5%
1988	**4,3%**	5,9%	5,6%	4,6%	6,1%
1989	**1,0%**	0,0%	1,8%	-0,4%	-1,4%
1990	**-2,5%**	-3,5%	-1,9%	-4,0%	-5,6%
1991	**-2,9%**	-2,0%	-2,5%	-3,4%	-3,6%
1992	**-2,7%**	-1,9%	-2,8%	-2,7%	-2,1%
1993	**-2,3%**	-3,0%	-2,4%	-3,5%	-4,5%
1994	**-3,1%**	-4,0%	-3,1%	-5,0%	-6,8%
1995	**-1,4%**	-1,0%	-1,3%	-0,9%	-0,2%
1996	**0,6%**	1,6%	0,9%	1,9%	3,1%
1997	**1,5%**	2,8%	2,2%	2,8%	3,4%
1998	**6,4%**	9,0%	7,9%	9,0%	9,9%
1999	**5,3%**	7,6%	7,6%	7,1%	6,7%
2000	**0,9%**	1,7%	3,6%	-1,4%	-4,6%
2001	**0,9%**	1,2%	3,8%	-3,1%	-7,4%
2002	**5,3%**	6,2%	8,5%	2,9%	-0,5%
2003	**8,7%**	9,6%	12,5%	7,6%	4,8%
2004	**9,3%**	9,6%	13,0%	8,5%	5,7%
2005	**7,9%**	8,8%	10,4%	8,1%	7,4%
2006	**4,0%**	4,9%	5,6%	4,1%	3,9%
2007	**-4,3%**	-5,3%	-3,6%	-7,0%	-9,4%
2008	**-4,3%**	-5,5%	-4,5%	-6,3%	-7,7%
2009	**1,9%**	3,0%	2,5%	2,6%	3,3%
2010	**2,6%**	4,3%	3,8%	1,5%	0,1%
2011	**-0,4%**	0,0%	-0,2%	-0,4%	-0,4%
2012	**-0,6%**	-0,3%	-1,0%	1,1%	2,9%
2013	**-1,0%**	-1,0%	-1,4%	-0,1%	1,0%

Note: For housing assets, computation is made separatly on gross housing and debts.

Table 7: Savings rates by wealth groups from t to t+1 (gross of all taxes)

Year	All	Bottom 50%	Middle 40%	Top 10%
1970	**16,6%**	9,2%	16,3%	27,1%
1971	**16,8%**	7,6%	13,3%	26,5%
1972	**17,3%**	6,9%	13,1%	28,5%
1973	**17,7%**	9,1%	17,2%	30,3%
1974	**16,7%**	8,6%	15,9%	26,1%
1975	**15,7%**	9,1%	15,1%	21,5%
1976	**14,5%**	9,1%	14,3%	22,7%
1977	**21,8%**	9,5%	17,0%	28,4%
1978	**19,2%**	8,1%	13,5%	26,0%
1979	**10,6%**	4,1%	6,4%	21,3%
1980	**10,2%**	6,0%	8,4%	19,7%
1981	**10,3%**	7,1%	8,2%	17,9%
1982	**9,3%**	4,7%	5,8%	14,7%
1983	**8,0%**	2,7%	3,8%	14,9%
1984	**7,4%**	2,1%	1,1%	16,9%
1985	**7,6%**	0,1%	-0,1%	19,3%
1986	**7,3%**	2,7%	2,0%	18,6%
1987	**7,4%**	2,4%	1,4%	19,8%
1988	**8,4%**	-2,9%	5,9%	15,1%
1989	**8,7%**	0,8%	11,7%	18,0%
1990	**8,7%**	0,3%	5,7%	29,7%
1991	**9,5%**	-10,9%	5,2%	38,5%
1992	**10,5%**	3,0%	7,1%	23,4%
1993	**10,6%**	1,8%	11,5%	28,0%
1994	**16,2%**	7,1%	13,7%	43,3%
1995	**15,7%**	-1,5%	-6,0%	64,0%
1996	**10,4%**	-0,6%	-1,6%	28,4%
1997	**11,0%**	-1,2%	-2,1%	30,3%
1998	**11,6%**	0,6%	2,5%	10,9%
1999	**11,5%**	-1,2%	2,1%	14,4%
2000	**10,2%**	3,2%	5,4%	28,7%
2001	**10,0%**	4,5%	10,0%	32,4%
2002	**10,4%**	1,0%	5,3%	29,4%
2003	**10,5%**	2,0%	3,2%	18,0%
2004	**9,6%**	2,1%	4,0%	11,5%
2005	**9,0%**	-3,3%	-2,7%	20,3%
2006	**9,0%**	-3,4%	-3,0%	25,6%
2007	**8,9%**	4,1%	10,7%	37,2%
2008	**8,8%**	-2,8%	4,8%	51,8%
2009	**9,5%**	-10,8%	-8,4%	45,4%
2010	**9,1%**	6,0%	7,9%	16,1%
2011	**7,6%**	6,5%	9,0%	4,8%
2012	**6,5%**	1,3%	2,9%	0,0%
2013	**6,5%**	0,2%	2,7%	11,0%

	Income shares (in % national income)					Labor income shares (in % labor national income)					Capital income shares (in % capital national income)				
Year	Bottom 50%	Middle 40%	Top 10%	Top 1%	Top 0.1%	Bottom 50%	Middle 40%	Top 10%	Top 1%	Top 0.1%	Bottom 50%	Middle 40%	Top 10%	Top 1%	Top 0.1%
1970	33%	39%	29%	9%	3%	40%	41%	19%	5%	0,8%	4%	28%	68%	29%	12%
1971	33%	39%	28%	9%	3%	40%	41%	19%	4%	0,9%	4%	29%	67%	28%	12%
1972	33%	39%	28%	9%	3%	40%	41%	19%	5%	0,9%	4%	29%	67%	28%	12%
1973	34%	39%	28%	9%	3%	40%	41%	19%	4%	0,9%	5%	28%	68%	28%	12%
1974	34%	39%	27%	9%	3%	41%	41%	18%	4%	0,9%	6%	26%	68%	29%	13%
1975	35%	40%	25%	8%	3%	41%	42%	17%	4%	0,9%	6%	29%	65%	27%	11%
1976	36%	40%	24%	7%	2%	41%	42%	17%	4%	0,8%	7%	29%	64%	26%	11%
1977	35%	40%	24%	7%	2%	41%	43%	17%	4%	0,8%	7%	29%	64%	26%	11%
1978	35%	41%	24%	7%	2%	40%	43%	17%	4%	0,8%	7%	31%	62%	25%	10%
1979	35%	41%	24%	7%	2%	40%	43%	17%	4%	0,8%	7%	31%	62%	25%	10%
1980	35%	42%	24%	7%	2%	40%	44%	17%	4%	0,8%	8%	30%	62%	25%	10%
1981	34%	42%	24%	7%	2%	39%	44%	16%	4%	0,7%	9%	31%	61%	24%	10%
1982	34%	43%	23%	7%	2%	39%	45%	17%	4%	0,7%	9%	31%	60%	23%	9%
1983	33%	43%	24%	7%	2%	38%	45%	17%	4%	0,7%	9%	32%	59%	22%	9%
1984	32%	44%	24%	7%	2%	37%	46%	17%	3%	0,7%	9%	33%	58%	22%	9%
1985	32%	43%	25%	7%	2%	37%	46%	17%	4%	0,7%	9%	33%	58%	22%	9%
1986	31%	43%	26%	8%	3%	37%	45%	18%	4%	0,7%	8%	33%	59%	22%	9%
1987	31%	42%	27%	8%	3%	37%	45%	18%	4%	0,8%	7%	32%	61%	24%	10%
1988	30%	42%	28%	8%	3%	37%	45%	18%	4%	0,8%	7%	33%	60%	23%	10%
1989	30%	42%	29%	9%	3%	37%	45%	18%	4%	0,7%	7%	33%	60%	23%	11%
1990	30%	42%	28%	8%	3%	37%	45%	18%	3%	0,7%	7%	33%	60%	24%	12%
1991	30%	43%	28%	9%	4%	37%	46%	18%	3%	0,7%	7%	33%	60%	25%	13%
1992	30%	43%	27%	8%	3%	37%	46%	17%	3%	0,6%	6%	35%	59%	24%	11%
1993	30%	43%	27%	8%	3%	37%	46%	17%	3%	0,5%	6%	36%	59%	25%	12%
1994	29%	44%	27%	9%	4%	36%	47%	17%	3%	0,5%	6%	35%	59%	26%	13%
1995	29%	44%	28%	9%	4%	36%	47%	17%	3%	0,5%	6%	35%	60%	27%	13%
1996	29%	43%	28%	10%	4%	36%	47%	17%	3%	0,5%	5%	32%	63%	31%	15%
1997	29%	43%	29%	10%	4%	37%	47%	17%	3%	0,5%	5%	31%	64%	33%	16%
1998	29%	42%	29%	11%	4%	37%	46%	17%	3%	0,5%	5%	29%	66%	34%	16%
1999	28%	42%	29%	11%	4%	36%	47%	17%	3%	0,5%	5%	30%	65%	33%	15%
2000	28%	42%	30%	11%	4%	36%	46%	18%	3%	0,5%	5%	29%	66%	34%	16%
2001	29%	42%	30%	11%	4%	36%	46%	18%	3%	0,5%	5%	29%	66%	35%	16%
2002	29%	42%	29%	10%	4%	37%	45%	18%	3%	0,5%	5%	30%	66%	34%	16%
2003	29%	42%	29%	11%	4%	37%	46%	18%	3%	0,5%	5%	30%	66%	34%	16%
2004	29%	42%	29%	11%	4%	37%	46%	18%	3%	0,5%	5%	29%	66%	35%	16%
2005	29%	42%	29%	11%	4%	37%	46%	18%	3%	0,5%	5%	29%	66%	34%	15%
2006	29%	42%	29%	10%	4%	36%	46%	18%	3%	0,6%	5%	29%	66%	33%	15%
2007	29%	41%	30%	11%	4%	36%	46%	18%	3%	0,6%	5%	28%	67%	34%	15%
2008	29%	42%	29%	11%	4%	36%	46%	18%	3%	0,5%	5%	28%	67%	34%	15%
2009	30%	43%	27%	9%	3%	37%	47%	17%	3%	0,5%	5%	29%	66%	33%	14%
2010	30%	42%	28%	10%	4%	37%	46%	17%	3%	0,5%	4%	27%	69%	36%	17%
2011	30%	42%	28%	10%	4%	37%	46%	17%	3%	0,5%	4%	27%	69%	37%	17%
2012	31%	43%	27%	9%	3%	37%	46%	16%	3%	0,5%	5%	28%	67%	35%	15%
2013	30%	43%	27%	9%	3%	37%	46%	16%	3%	0,5%	5%	29%	66%	34%	15%
2014	31%	43%	26%	9%	3%	37%	46%	16%	3%	0,5%	5%	29%	67%	34%	15%

Table 8: Distribution of national income, labor income and capital income ranked by wealth

Wealth group	Wealth shares			Wealth shares		
	Observed	Imputed		Observed	Imputed	
		Simple method	Refined method		Simple method	Refined method
Year 1992				**Year 2004**		
p0-p10	**0,2%**	0,6%	**0,1%**	**0,0%**	0,2%	**0,1%**
p10-p20	**0,5%**	1,0%	**0,5%**	**0,1%**	0,5%	**0,3%**
p20-p30	**1,1%**	1,7%	**1,2%**	**0,5%**	1,0%	**0,9%**
p30-p40	**2,2%**	2,9%	**2,5%**	**1,6%**	2,9%	**2,4%**
p40-p50	**4,2%**	6,2%	**4,5%**	**3,7%**	6,1%	**4,7%**
p50-p60	**6,4%**	8,4%	**6,7%**	**6,2%**	8,0%	**6,9%**
p60-p70	**9,2%**	10,1%	**9,4%**	**9,0%**	9,8%	**9,2%**
p70-p80	**12,7%**	12,6%	**12,8%**	**12,4%**	12,1%	**12,4%**
p80-p90	**18,3%**	17,5%	**18,5%**	**18,4%**	17,1%	**18,2%**
Top10	**45,3%**	39,0%	**43,8%**	**48,0%**	42,4%	**44,9%**
Top5	**31,5%**	26,2%	**29,9%**	**33,5%**	29,5%	**31,0%**
Top1	**13,0%**	9,8%	**11,4%**	**13,6%**	12,4%	**12,7%**
Year 1998				**Year 2010**		
p0-p10	**0,0%**	0,2%	**0,1%**	**0,0%**	0,1%	**0,0%**
p10-p20	**0,2%**	0,6%	**0,4%**	**0,1%**	0,2%	**0,1%**
p20-p30	**0,7%**	1,2%	**1,1%**	**0,3%**	0,5%	**0,4%**
p30-p40	**1,9%**	3,2%	**2,8%**	**1,2%**	2,1%	**1,7%**
p40-p50	**4,3%**	6,3%	**5,0%**	**3,3%**	5,4%	**4,1%**
p50-p60	**6,5%**	8,0%	**7,0%**	**5,9%**	7,4%	**6,3%**
p60-p70	**9,0%**	9,6%	**9,2%**	**8,6%**	9,2%	**8,7%**
p70-p80	**12,1%**	12,1%	**12,3%**	**11,9%**	11,6%	**11,8%**
p80-p90	**17,9%**	17,1%	**17,7%**	**17,6%**	16,4%	**17,3%**
Top10	**47,4%**	41,7%	**44,3%**	**51,1%**	47,1%	**49,4%**
Top5	**33,6%**	29,2%	**31,0%**	**37,5%**	34,7%	**36,2%**
Top1	**14,9%**	12,5%	**13,3%**	**18,8%**	17,4%	**18,0%**

Table 9. Testing the survey-based imputation methods using wealth surveys: results on total wealth

Note: This tables depicts inequality indicators from the wealth surveys using the reported wealth or the imputed wealth implied by our survey-based imputation methods. (see Section 2.2.5 Robutness checks)

	Life insurance			Net housing			Saving accounts		
	Obser-ved	Imputed (simple method)	**Imputed (refined method)**	**Obser-ved**	Imputed (simple method)	**Imputed (refined method)**	**Obser-ved**	Imputed (simple method)	**Imputed (refined method)**
year					**1992**				
p5	**0**	0	**0**	**0**	0	**0**	**172**	4 057	**290**
p10	**0**	0	**0**	**0**	0	**0**	**504**	5 852	**579**
p25	**0**	0	**0**	**0**	0	**0**	**1 665**	7 381	**1 720**
p50	**0**	0	**0**	**0**	0	**0**	**4 537**	9 819	**4 595**
p75	**2 439**	8 869	**2 419**	**67 284**	79 962	**68 610**	**11 537**	14 496	**11 496**
p90	**11 245**	13 337	**11 212**	**128 165**	111 477	**123 885**	**25 382**	20 759	**25 738**
p95	**21 098**	18 717	**21 259**	**175 925**	149 109	**169 215**	**43 242**	24 099	**43 409**
p99	**66 258**	30 113	**66 573**	**361 384**	211 387	**357 673**	**140 261**	64 535	**142 231**
mean	**4 452**	4 452	**4 452**	**45 932**	45 932	**45 932**	**12 342**	12 342	**12 342**
st dev	**17 440**	10 083	**17 414**	**91 961**	56 071	**87 302**	**37 311**	10 020	**35 476**
year					**1998**				
p5	**0**	0	**0**	**0**	0	**0**	**186**	2 060	**207**
p10	**0**	0	**0**	**0**	0	**0**	**378**	2 680	**400**
p25	**0**	0	**0**	**0**	0	**0**	**1 167**	4 325	**1 188**
p50	**0**	0	**0**	**23 665**	54 531	**28 287**	**3 933**	6 788	**3 953**
p75	**2 286**	9 990	**2 283**	**78 880**	85 575	**77 807**	**10 406**	10 042	**10 354**
p90	**15 093**	21 236	**15 174**	**122 941**	110 453	**120 931**	**20 726**	16 725	**20 827**
p95	**32 645**	28 428	**32 874**	**160 843**	142 310	**158 109**	**30 698**	19 922	**30 826**
p99	**100 252**	70 313	**99 484**	**275 683**	189 569	**274 515**	**59 289**	31 352	**58 732**
mean	**6 824**	6 824	**6 824**	**48 105**	48 105	**48 105**	**8 311**	8 311	**8 311**
st dev	**38 253**	25 352	**38 089**	**108 580**	51 216	**83 718**	**12 789**	5 995	**12 674**
year					**2004**				
p5	**0**	0	**0**	**0**	0	**0**	**184**	2 613	**201**
p10	**0**	0	**0**	**0**	0	**0**	**391**	3 041	**409**
p25	**0**	0	**0**	**0**	0	**0**	**1 243**	5 569	**1 259**
p50	**0**	0	**0**	**19 926**	72 465	**38 319**	**3 940**	7 481	**3 950**
p75	**1 188**	7 788	**1 151**	**114 794**	124 013	**111 166**	**11 145**	11 360	**11 192**
p90	**16 802**	25 867	**16 963**	**186 602**	157 865	**178 161**	**22 622**	17 487	**22 646**
p95	**40 313**	42 595	**40 283**	**247 273**	213 898	**237 913**	**34 109**	24 795	**34 000**
p99	**133 671**	89 137	**133 362**	**412 483**	292 466	**407 425**	**68 297**	35 494	**71 047**
mean	**8 200**	8 200	**8 200**	**68 546**	68 546	**68 546**	**9 426**	9 426	**9 426**
st dev	**45 417**	23 012	**45 307**	**99 345**	73 804	**94 211**	**21 989**	6 748	**20 586**
year					**2010**				
p5	**0**	0	**0**	**0**	0	**0**	**162**	1 199	**214**
p10	**0**	0	**0**	**0**	0	**0**	**400**	1 534	**434**
p25	**0**	0	**0**	**0**	0	**0**	**1 338**	3 437	**1 378**
p50	**0**	0	**0**	**39 262**	99 831	**58 573**	**5 198**	7 358	**5 199**
p75	**4 529**	9 914	**4 537**	**166 542**	176 882	**163 429**	**14 824**	19 085	**14 838**
p90	**33 375**	42 760	**33 637**	**270 196**	233 771	**261 017**	**31 969**	30 508	**32 099**
p95	**80 000**	90 279	**79 604**	**358 024**	295 454	**341 262**	**47 862**	39 826	**47 762**
p99	**302 259**	219 852	**303 292**	**616 951**	405 486	**605 861**	**107 319**	73 310	**107 300**
mean	**19 166**	19 166	**19 166**	**101 407**	101 407	**101 407**	**13 145**	13 145	**13 145**
st dev	**173 808**	84 407	**171 160**	**146 202**	108 840	**141 361**	**30 562**	13 557	**29 385**

Table 10. Testing the survey-based imputation methods using wealth surveys : results on imputed assets

year	Group	Wealth share by total income group			Wealth share by labor income group			Total income share by wealth group		
		obser-ved	simple method	refined method	obser-ved	simple method	refined method	obser-ved	simple method	refined method
1992	B50	**27,6%**	29,9%	**29,8%**	**32,2%**	32,8%	**32,8%**	**34,4%**	35,8%	**35,8%**
	M40	**45,4%**	44,3%	**44,3%**	**41,7%**	41,5%	**41,5%**	**43,5%**	42,0%	**43,6%**
	Top10	**27,0%**	25,9%	**25,9%**	**26,1%**	25,8%	**25,8%**	**22,1%**	22,1%	**20,6%**
	Top1	**4,7%**	3,8%	**3,8%**	**4,5%**	3,8%	**3,8%**	**2,9%**	3,1%	**2,7%**
1998	B50	**27,0%**	29,0%	**29,0%**	**32,8%**	33,1%	**33,1%**	**36,5%**	36,6%	**37,4%**
	M40	**42,7%**	42,2%	**42,3%**	**41,8%**	42,1%	**42,1%**	**44,9%**	44,3%	**44,1%**
	Top10	**30,3%**	28,8%	**28,7%**	**25,5%**	24,8%	**24,8%**	**18,6%**	19,1%	**18,5%**
	Top1	**7,4%**	6,0%	**6,0%**	**6,1%**	4,9%	**4,9%**	**3,1%**	2,8%	**2,7%**
2004	B50	**25,6%**	26,7%	**26,7%**	**29,1%**	29,5%	**29,5%**	**33,4%**	34,3%	**34,2%**
	M40	**42,5%**	42,6%	**42,6%**	**42,2%**	42,6%	**42,6%**	**44,7%**	42,7%	**44,4%**
	Top10	**31,9%**	30,6%	**30,7%**	**28,7%**	27,9%	**27,9%**	**21,9%**	22,9%	**21,4%**
	Top1	**5,2%**	4,3%	**4,3%**	**4,2%**	3,5%	**3,4%**	**3,6%**	3,6%	**3,5%**
2010	B50	**20,7%**	21,4%	**21,4%**	**27,5%**	27,5%	**27,5%**	**32,1%**	32,4%	**32,1%**
	M40	**42,1%**	42,4%	**42,4%**	**42,8%**	43,6%	**43,6%**	**43,7%**	42,4%	**43,7%**
	Top10	**37,2%**	36,2%	**36,2%**	**29,7%**	28,9%	**28,9%**	**24,1%**	25,2%	**24,3%**
	Top1	**12,5%**	11,2%	**11,3%**	**8,4%**	7,7%	**7,7%**	**6,1%**	6,3%	**6,0%**

Note : this table depicts wealth shares by income and labor groups and total income shares by wealth groups

year	group	Wealth share by total income group			Wealth share by labor income group			Total income share by wealth group		
		obser-ved	simple method	refined method	obser-ved	simple method	refined method	obser-ved	simple method	refined method
1992	p0-p10	4,9%	4,9%	4,8%	8,5%	6,8%	6,8%	5,2%	4,8%	5,6%
	p10-p20	4,1%	5,3%	5,2%	4,4%	5,6%	5,6%	5,9%	7,6%	6,5%
	p20-p30	4,6%	5,6%	5,6%	5,7%	6,2%	6,2%	7,4%	6,5%	7,5%
	p30-p40	6,7%	6,9%	7,0%	6,3%	6,8%	6,8%	7,8%	9,3%	7,9%
	p40-p50	7,3%	7,2%	7,2%	7,2%	7,4%	7,4%	8,2%	7,6%	8,2%
	p50-p60	8,8%	8,6%	8,6%	8,6%	8,1%	8,1%	9,2%	6,8%	8,9%
	p60-p70	11,2%	10,9%	10,9%	9,1%	9,3%	9,3%	10,5%	9,2%	10,3%
	p70-p80	10,3%	10,1%	10,1%	11,1%	11,1%	11,1%	11,0%	11,9%	11,2%
	p80-p90	15,1%	14,8%	14,7%	13,0%	13,1%	13,0%	12,8%	14,2%	13,2%
	p90-p95	9,6%	9,7%	9,8%	9,6%	10,0%	10,1%	8,8%	8,8%	8,3%
	p95-p99	12,7%	12,3%	12,3%	12,0%	12,0%	11,9%	10,4%	10,2%	9,6%
	p99-p99.5	2,3%	1,9%	1,9%	2,0%	1,7%	1,7%	1,6%	1,6%	1,5%
	p99.5-p99.9	2,0%	1,6%	1,6%	1,9%	1,5%	1,5%	1,2%	1,4%	1,0%
	p99.9-p100	0,4%	0,3%	0,3%	0,6%	0,6%	0,6%	0,2%	0,2%	0,2%
1998	p0-p10	3,6%	4,0%	4,0%	6,8%	6,2%	6,2%	5,0%	4,9%	5,4%
	p10-p20	4,3%	4,9%	4,9%	5,4%	5,8%	5,8%	6,6%	7,1%	7,0%
	p20-p30	5,4%	6,1%	6,1%	7,0%	7,1%	7,1%	7,5%	8,4%	8,1%
	p30-p40	7,0%	7,1%	7,1%	6,4%	6,6%	6,6%	8,6%	9,1%	8,3%
	p40-p50	6,6%	6,9%	6,9%	7,2%	7,4%	7,4%	8,8%	7,2%	8,5%
	p50-p60	8,2%	8,2%	8,2%	8,2%	8,1%	8,1%	9,4%	8,3%	9,3%
	p60-p70	9,1%	8,9%	8,9%	9,1%	8,9%	8,9%	10,7%	10,6%	10,3%
	p70-p80	11,6%	11,3%	11,3%	10,5%	10,7%	10,7%	11,6%	11,3%	11,4%
	p80-p90	13,9%	13,8%	13,8%	13,9%	14,4%	14,4%	13,3%	14,1%	13,2%
	p90-p95	10,1%	10,1%	10,1%	8,1%	8,5%	8,6%	7,7%	8,1%	7,8%
	p95-p99	12,8%	12,6%	12,6%	11,3%	11,4%	11,4%	7,8%	8,2%	8,1%
	p99-p99.5	2,9%	2,5%	2,5%	1,8%	1,6%	1,6%	1,6%	1,3%	1,2%
	p99.5-p99.9	3,1%	2,4%	2,4%	3,1%	2,4%	2,4%	1,1%	1,0%	1,0%
	p99.9-p100	1,4%	1,2%	1,2%	1,2%	0,9%	0,9%	0,4%	0,4%	0,4%

Table 12. Link between wealth and income (detailed groups)

	p0-p10	4,7%	4,4%	4,4%	6,2%	5,6%	5,6%	3,9%	3,5%	4,2%
	p10-p20	4,1%	5,0%	5,0%	4,6%	5,3%	5,3%	5,7%	5,6%	5,9%
	p20-p30	4,8%	4,9%	4,9%	5,6%	5,7%	5,7%	6,9%	8,1%	7,3%
	p30-p40	5,2%	5,7%	5,7%	5,7%	6,0%	6,0%	8,4%	9,1%	8,3%
	p40-p50	6,7%	6,8%	6,8%	6,9%	6,9%	6,9%	8,5%	8,0%	8,5%
	p50-p60	8,3%	8,4%	8,4%	7,9%	7,8%	7,8%	9,1%	7,7%	9,0%
2004	p60-p70	8,8%	9,1%	9,0%	9,2%	9,5%	9,5%	10,0%	9,1%	10,2%
	p70-p80	10,3%	10,1%	10,0%	10,5%	10,5%	10,5%	11,7%	11,6%	11,4%
	p80-p90	15,1%	15,1%	15,1%	14,6%	14,9%	14,9%	13,9%	14,4%	13,8%
	p90-p95	11,3%	11,3%	11,3%	10,1%	10,2%	10,2%	8,5%	9,6%	8,5%
	p95-p99	15,4%	15,0%	15,0%	14,4%	14,2%	14,2%	9,9%	9,7%	9,5%
	p99-p99.5	2,6%	2,2%	2,2%	1,9%	1,6%	1,6%	1,8%	1,9%	1,8%
	p99.5-p99.9	1,8%	1,5%	1,5%	1,5%	1,1%	1,1%	1,3%	1,2%	1,2%
	p99.9-p100	0,8%	0,7%	0,7%	0,8%	0,7%	0,7%	0,5%	0,5%	0,5%
	p0-p10	2,2%	2,3%	2,3%	3,6%	3,6%	3,6%	3,4%	2,9%	3,5%
	p10-p20	3,3%	3,3%	3,3%	5,0%	4,9%	4,9%	5,4%	5,5%	5,5%
	p20-p30	3,8%	4,2%	4,2%	5,5%	5,7%	5,6%	6,5%	7,2%	6,9%
	p30-p40	5,3%	5,4%	5,4%	5,7%	5,8%	5,8%	8,0%	8,8%	7,8%
	p40-p50	6,2%	6,2%	6,2%	7,7%	7,5%	7,5%	8,8%	8,1%	8,4%
	p50-p60	7,4%	7,6%	7,6%	7,6%	7,9%	7,9%	8,9%	8,1%	9,1%
2010	p60-p70	9,2%	9,1%	9,1%	9,9%	10,1%	10,1%	10,0%	9,2%	10,1%
	p70-p80	11,3%	11,4%	11,4%	10,3%	10,6%	10,6%	11,2%	11,1%	11,2%
	p80-p90	14,2%	14,3%	14,3%	15,0%	15,0%	15,0%	13,6%	14,0%	13,3%
	p90-p95	10,2%	10,2%	10,2%	9,8%	9,8%	9,7%	8,3%	8,8%	8,7%
	p95-p99	14,4%	14,8%	14,8%	11,5%	11,4%	11,5%	9,7%	10,1%	9,6%
	p99-p99.5	4,6%	4,5%	4,5%	2,6%	2,4%	2,4%	2,1%	2,3%	2,1%
	p99.5-p99.9	4,2%	3,8%	3,8%	4,4%	4,1%	4,1%	2,6%	2,7%	2,6%
	p99.9-p100	3,8%	2,9%	2,9%	1,5%	1,2%	1,2%	1,5%	1,3%	1,2%

Table 13: Number of imputation groups for housing and wealth surveys

Number of imputation groups for the wealth surveys

	Age groups	Groups of financial income	Groups of labor income	Total number of groups
Owner-occupied housing assets	10 groups: < 25, 25-30, 31-39, 40-49, 50-54, 55-60, 61-65, 66-70, 71-80, > 80	4 groups: P0-50, P50-90, P90-99, P99-100	5 groups: P0-25, P25-50, P50-75, P75-90, P90-100	200 groups=10*4*5
Life insurance assets	8 groups: < 31, 31-39, 40-49, 50-54, 55-60, 61-65, 66-70, > 70	6 groups: P0-50, P50-75,P75-90, P90-95, P95-99, P99-100	6 groups: P0-25, P25-50, P50-75, P75-90, P90-95, P95-100	384 groups=8*6*6
Deposits and saving accounts	8 groups: < 31, 31-39, 40-49, 50-54, 55-60, 61-65, 66-70, > 70	5 groups: P0-50, P50-75,P75-90, P90-95, P95-100	6 groups: P0-25, P25-50, P50-75, P75-90, P90-95, P95-100	240 groups=8*5*6

Number of imputation groups for housing surveys over the 1970-1991 period

	Age groups	Groups of total income	Total number of groups
Owner-occupied housing assets	9 groups: < 25, 25-30, 31-39, 40-49, 50-54, 55-60, 61-65, 66-70, > 70	7 groups: P0-25, P25-50, P50-75, P75-90, P90-95, P95-99, P99-100	63 groups=10*4*5

Note: This tables depicts the number of imputation groups for the wealth surveys

	MICS Method				Wealth surveys			
Table 14. Average wealth by wealth group : Wealth surveys vs MICS method								
	1992	**1998**	**2004**	**2010**	**1992**	**1998**	**2004**	**2010**
P0-50	9 296	10 083	16 795	17 755	6 245	5 878	7 444	12 631
P50-90	71 945	74 403	129 537	172 967	60 039	66 569	93 836	149 158
P90-100	381 573	504 219	775 091	1 079 404	245 667	296 006	399 053	670 030
P99-100	1 316 628	2 340 350	3 361 923	4 479 603	720 439	932 585	1 124 839	2 456 829
P99.9-100	4 910 059	10 335 606	14 059 146	18 056 343	2 032 726	2 577 704	2 602 284	10 252 457

Note : This table depicts the average wealth by wealth group, either computed directly from the wealth surveys or with our MICS method. Unit of analysis is the individual.

Figure 1. Tax-exempt capital income (in % of national income)

Retained earnings

Corporate tax

Life insurance income

Tax-exempt interests from saving accounts

Imputed rents
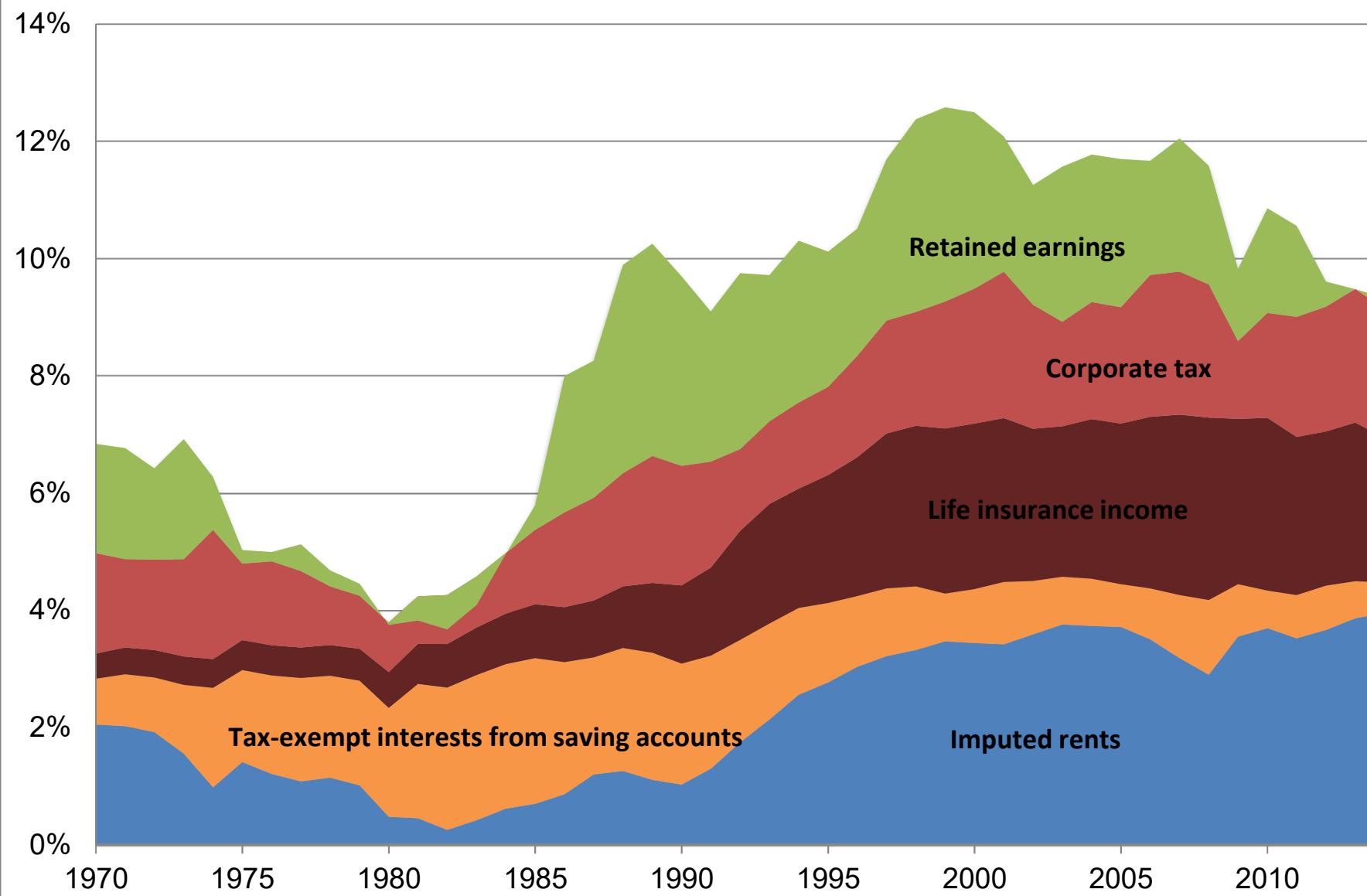
Figure 2. Asset composition by wealth level, France 2012

Deposits

Owner-occupied housing (net of debt)

Assets computed using the capitalization method

Bonds and Equities

Tenant-occupied housing and business assets (net of debt)

Assets imputed based on household surveys

Life insurance assets

P0-10 P10-20 P20-30 P30-40 P40-50 P50-60 P60-70 P70-80 P80-90 P90-95 P95-99 P99-99.5 P99.5-99.9 P99.9-100
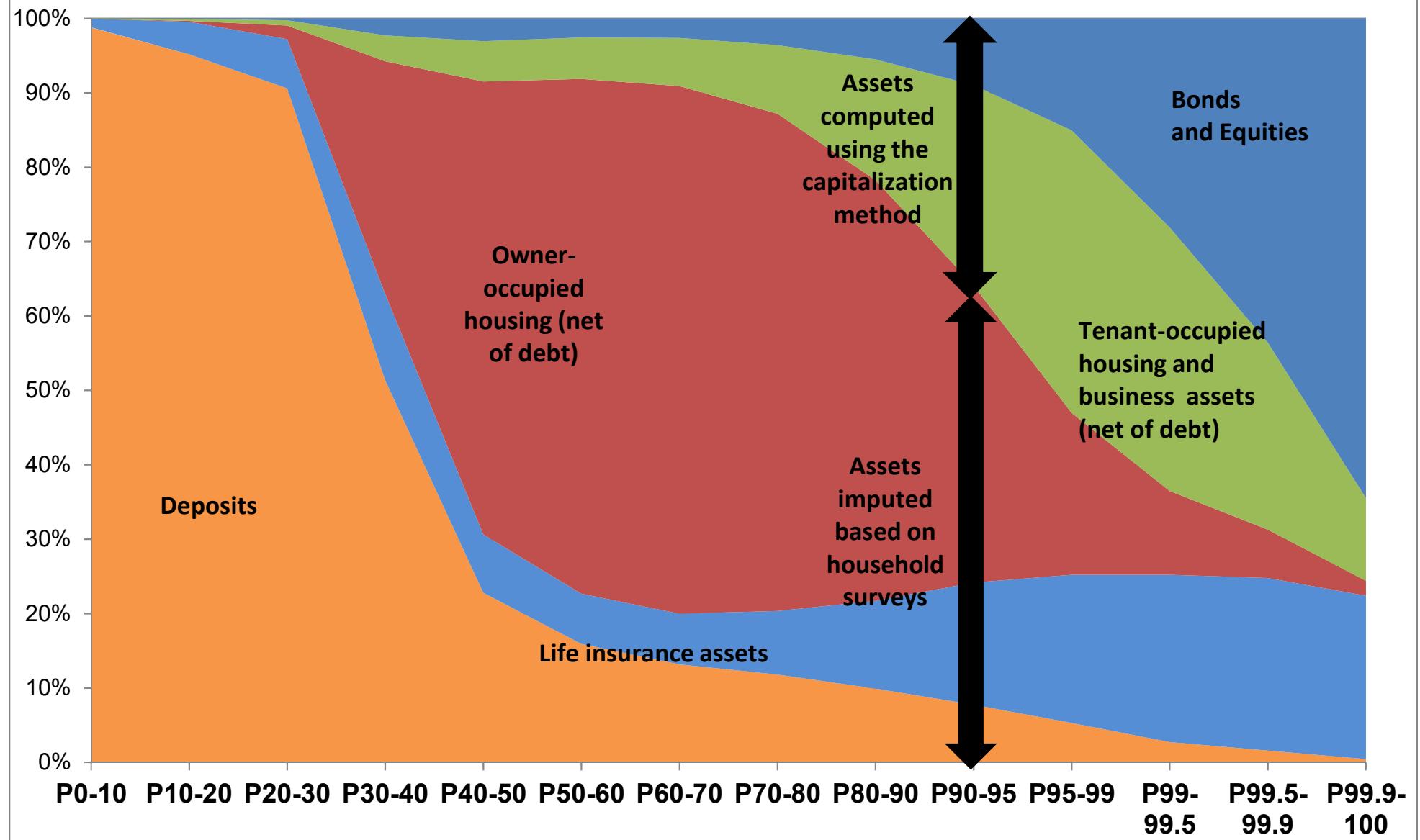
Figure 3. Share of wealth obtained from capitalization method by wealth groups
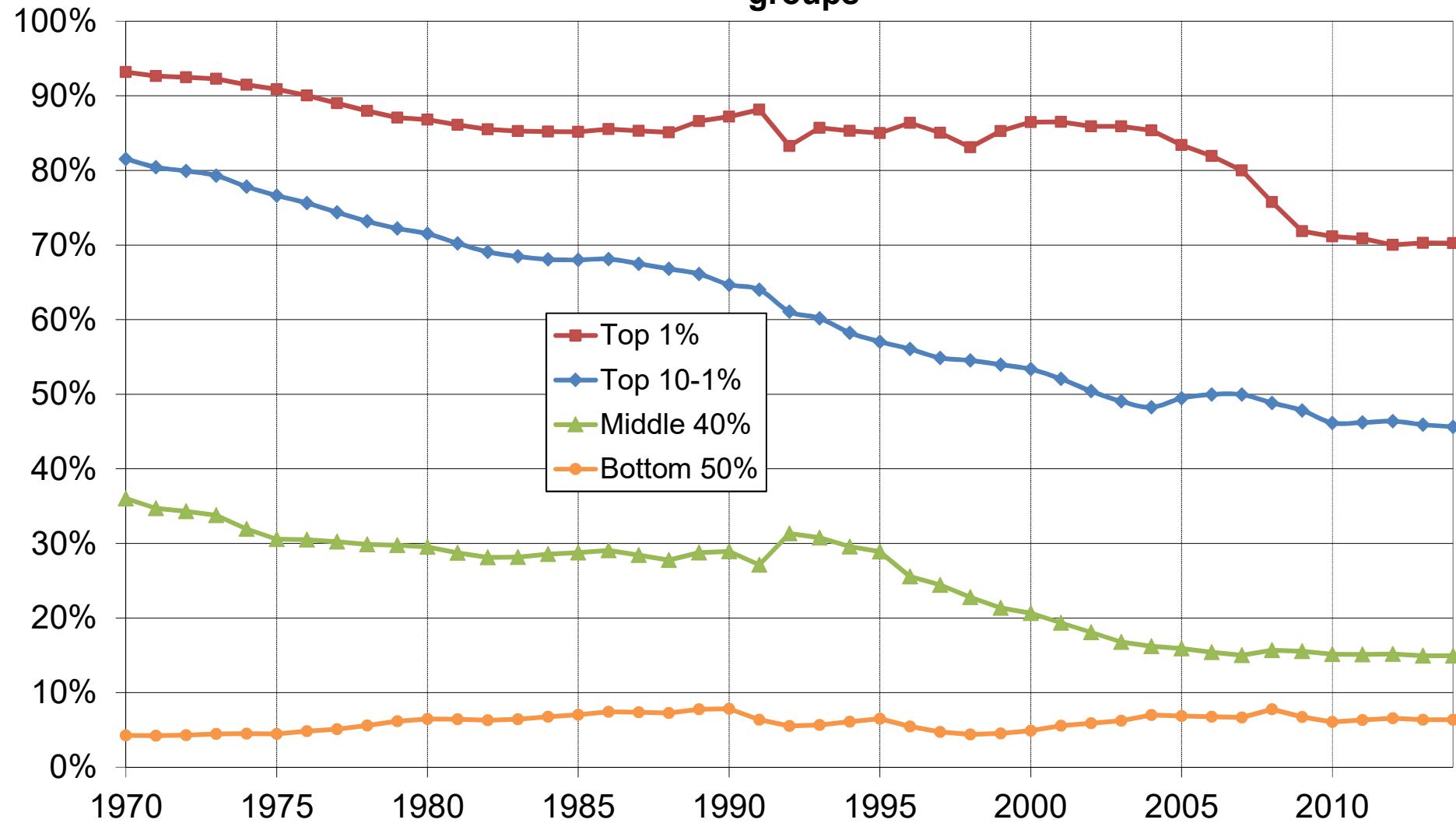
Figure 4. Robustness checks for owner-occupied housing assets: Top 1% wealth share

Legend:
- Baseline (Housing+wealth surveys)
- Housing surveys
- Wealth surveys (simplified imputations)
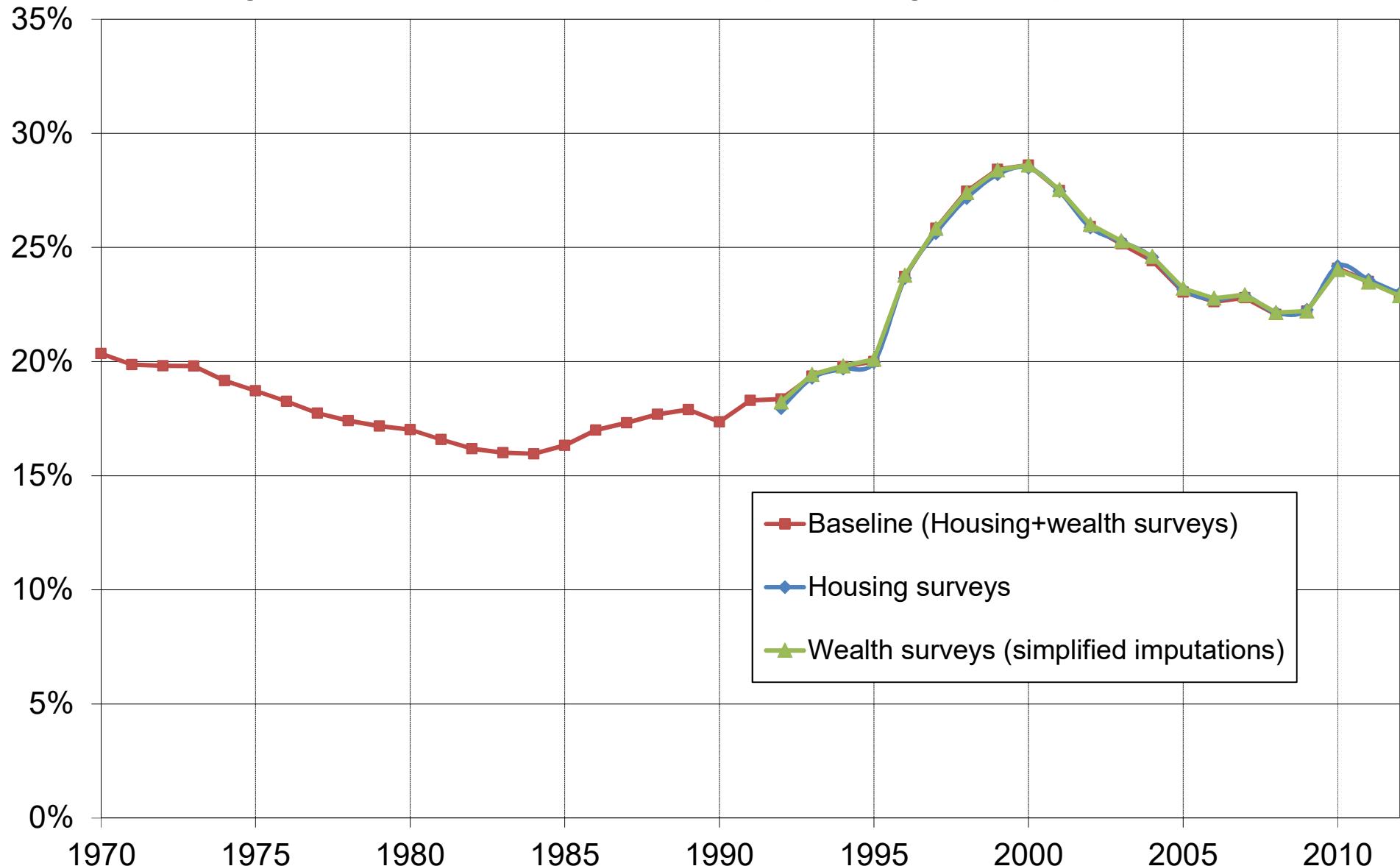
Figure 5. Robustness checks for owner-occupied housing assets: Middle 40% wealth share
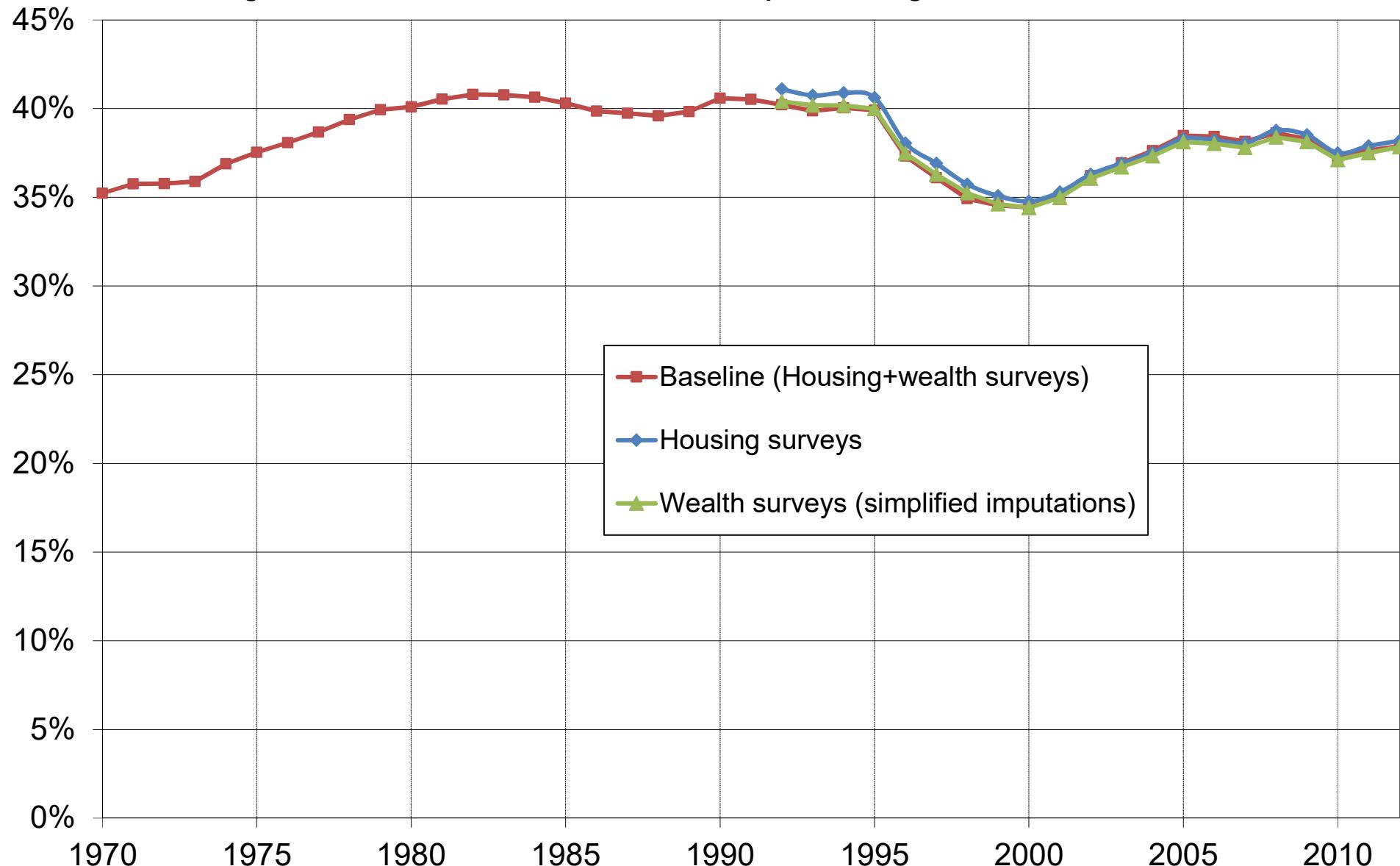
Figure 6. Robustness checks for owner-occupied housing assets: Bottom 50% wealth share

Legend:
- Baseline (Housing+wealth surveys)
- Housing surveys
- Wealth surveys (simplified imputations)
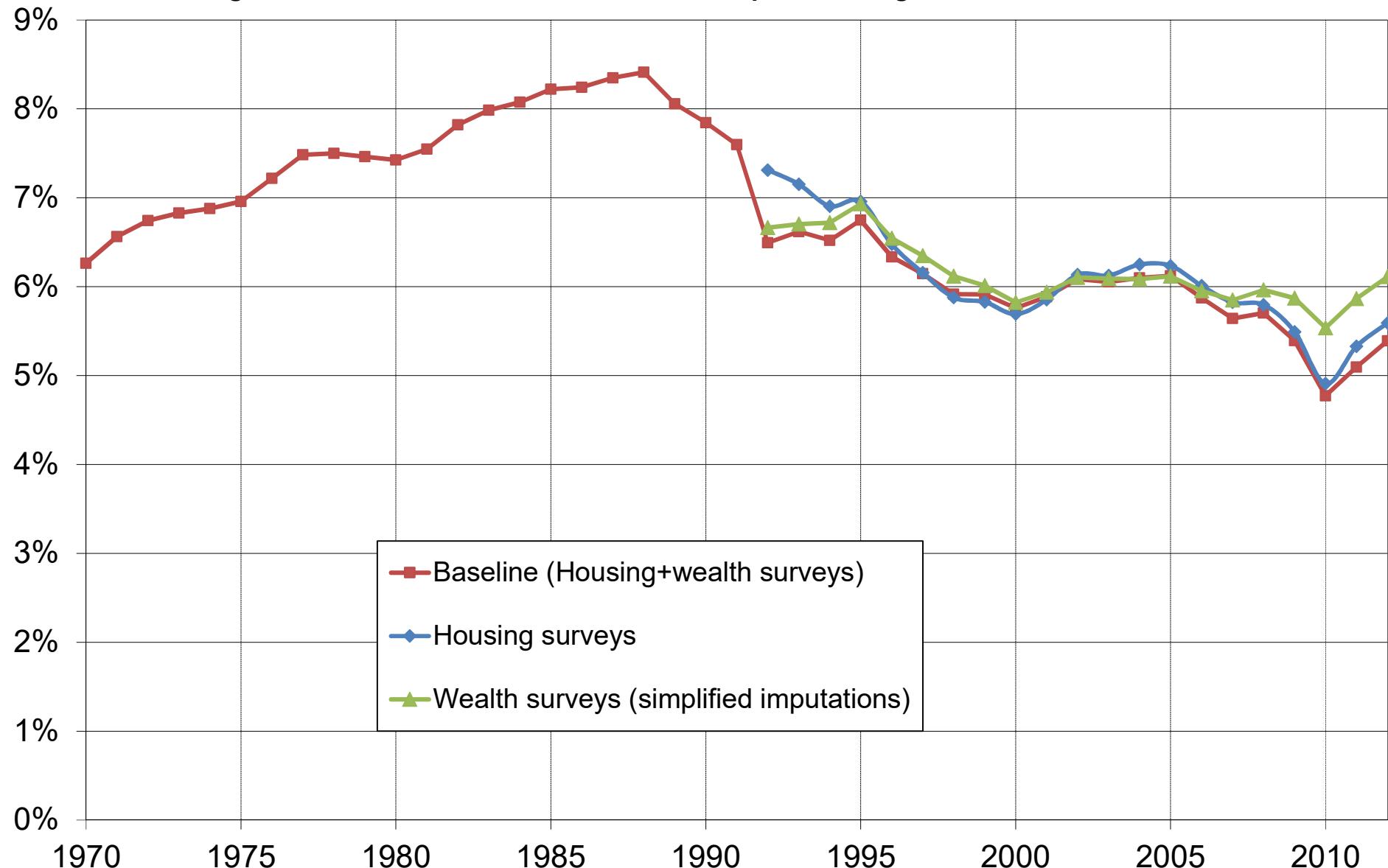
Figure 7. Robustness checks for financial assets: Top 1% wealth share
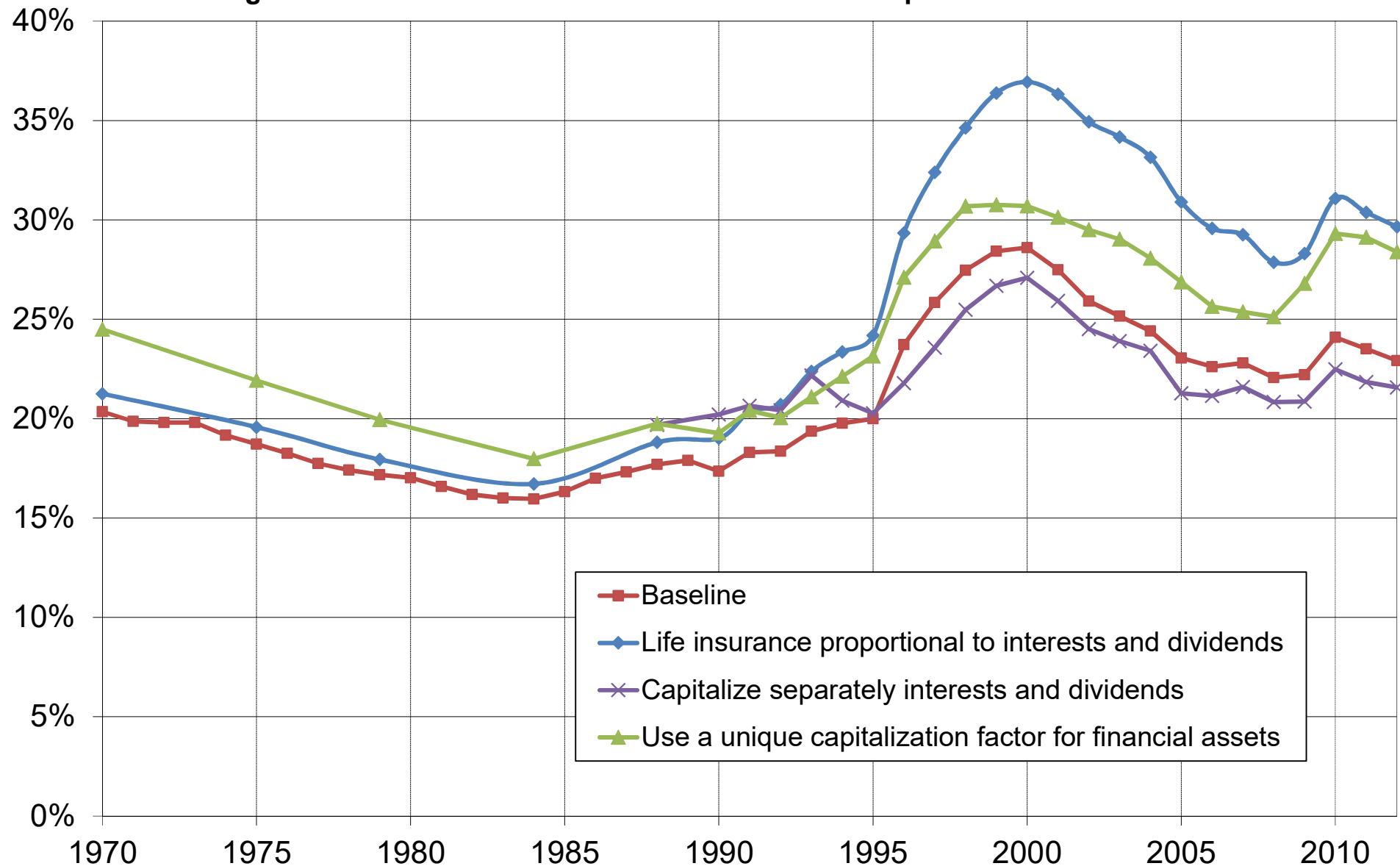
Figure 8. Robustness checks for financial assets: Middle 40% wealth share

Legend:
- Baseline
- Life insurance proportional to interests and dividends
- Capitalize separately interests and dividends
- Use a unique capitalization factor for financial assets
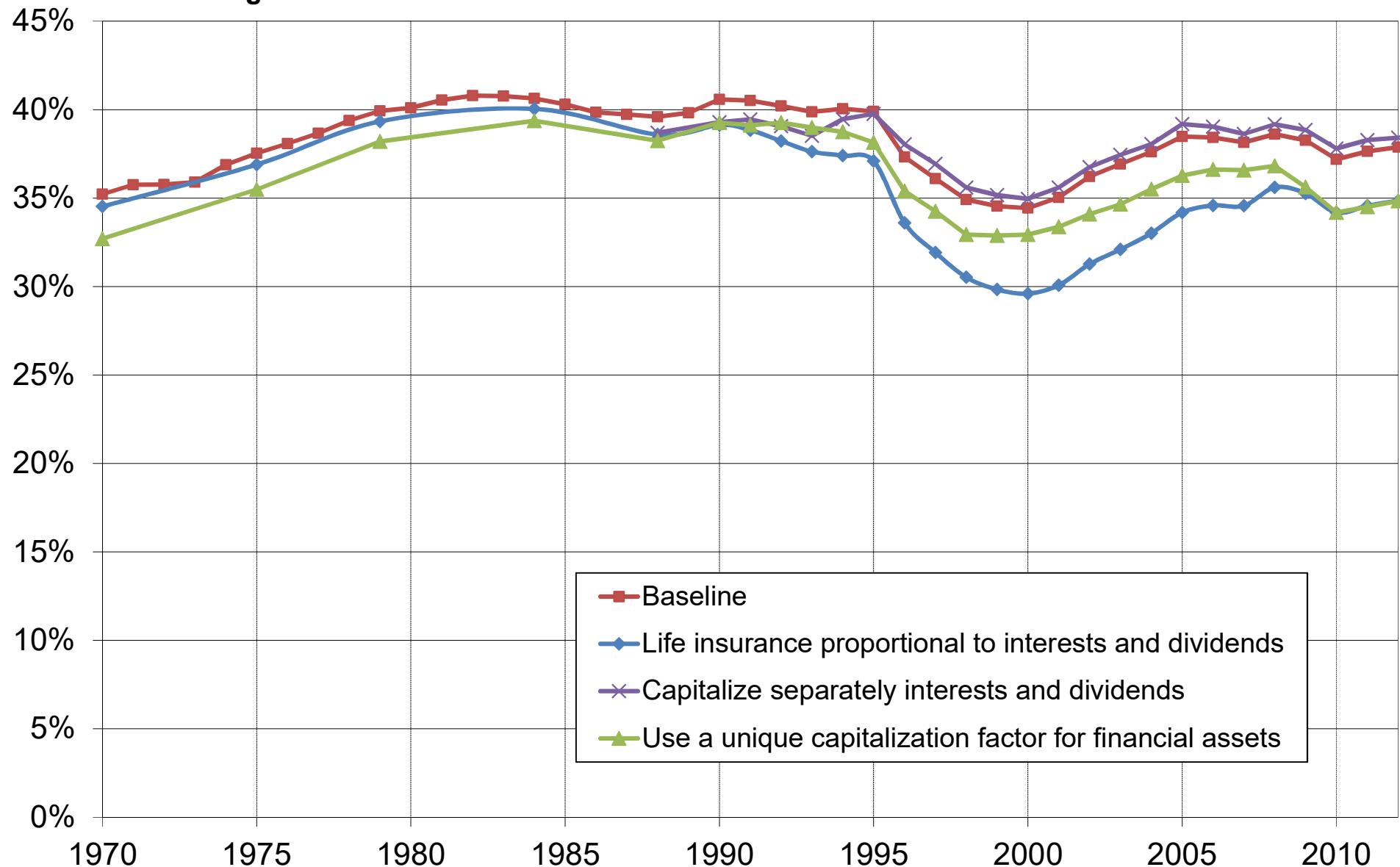
Figure 9. Robustness checks for financial assets: Bottom 50% wealth share
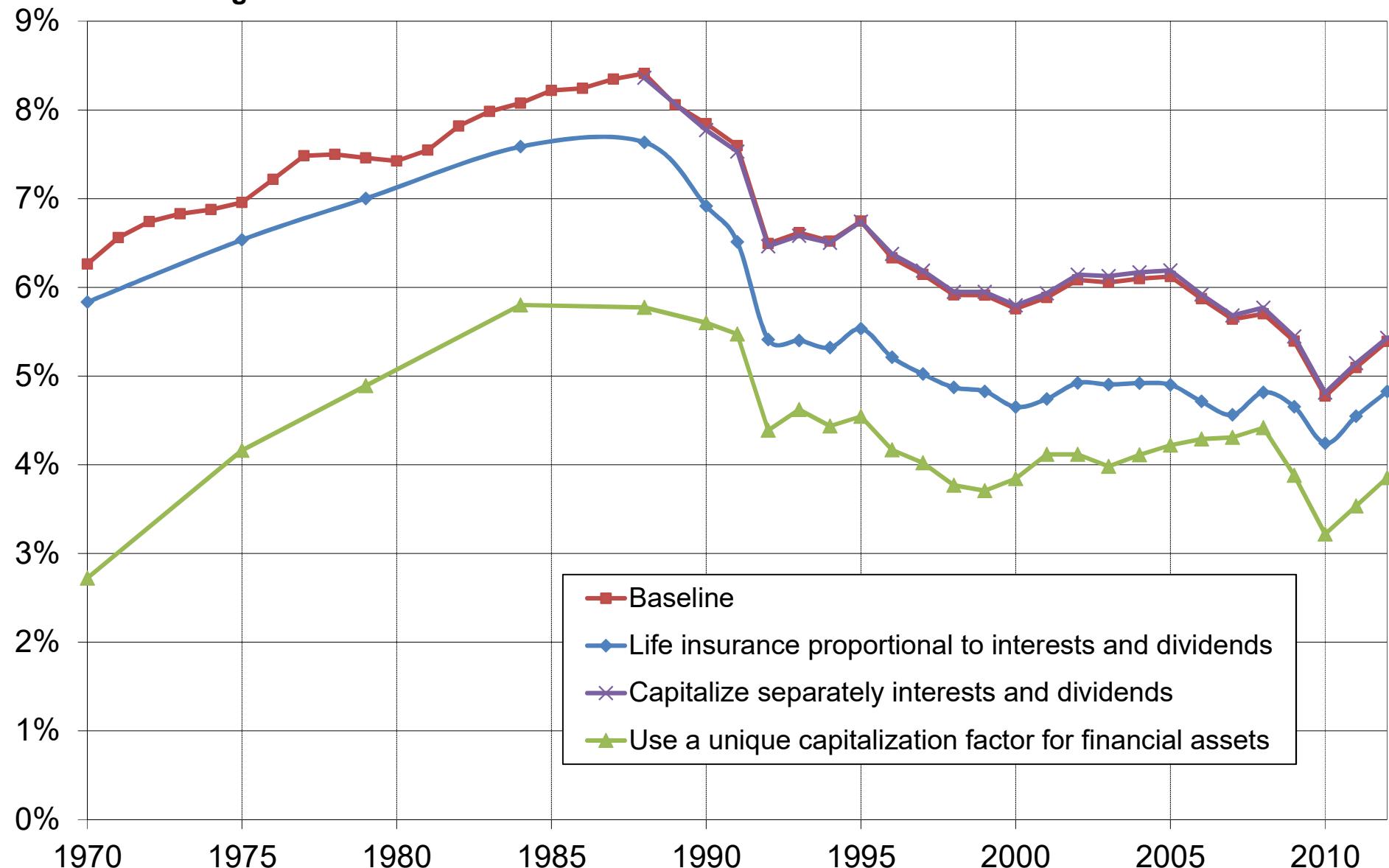
Figure 10. Top wealth shares in France, 1970-2014 (% total wealth)

Average net wealth per adult (2014): 197 000 €

740 000 €

4 740 000 €

Top 1%

Top 10-1%
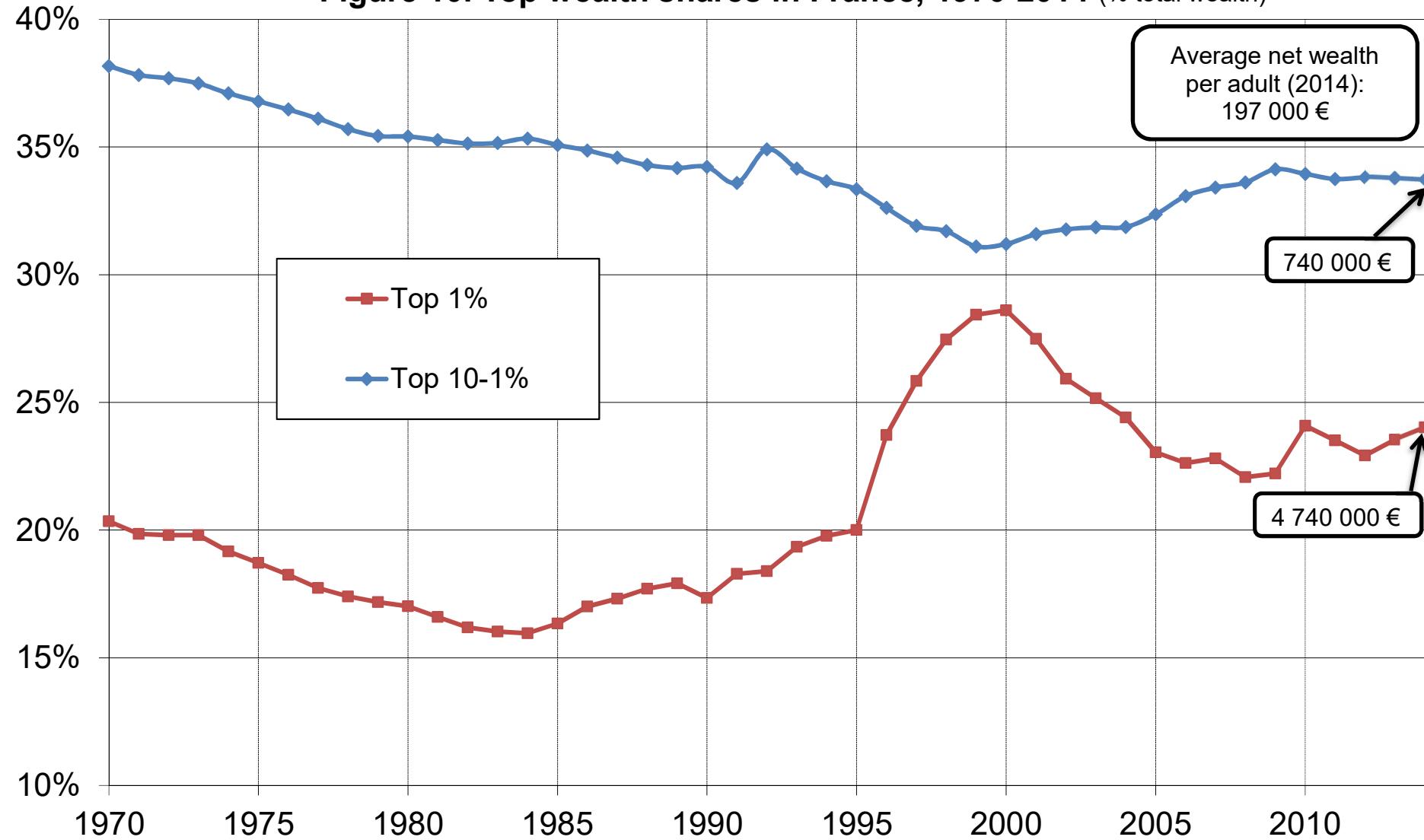
Figure 11. Composition of aggregate personal wealth, France 1970-2014
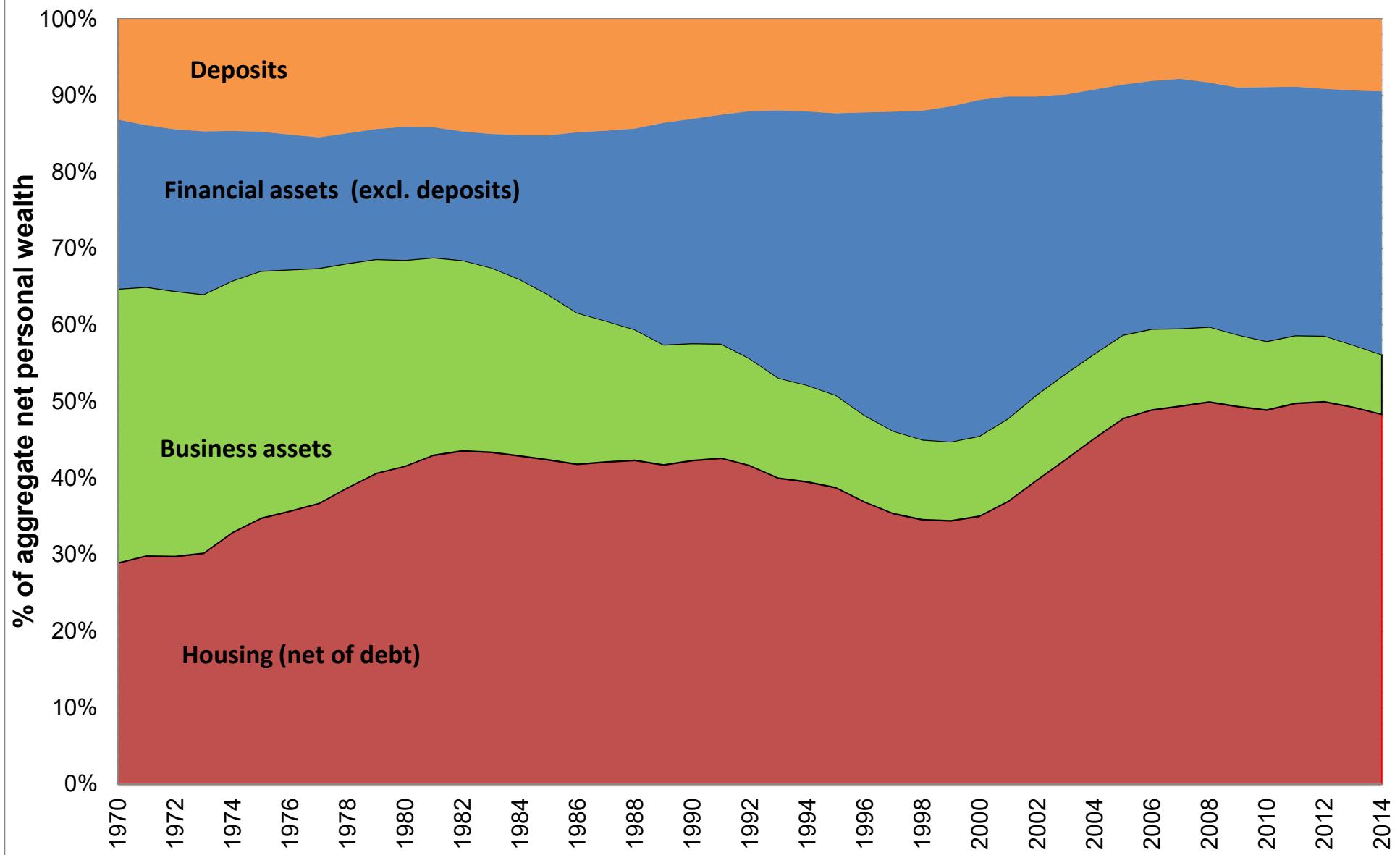
Figure 12. Level and composition of personal wealth, France 1970-2014 (% national income)

Ratio 2014 = 571%
Personal wealth per adult: 197 400 €
National income per adult: 34 600 €

Deposits

Financial assets (excl. deposits)

Business assets

Housing (net of debt)
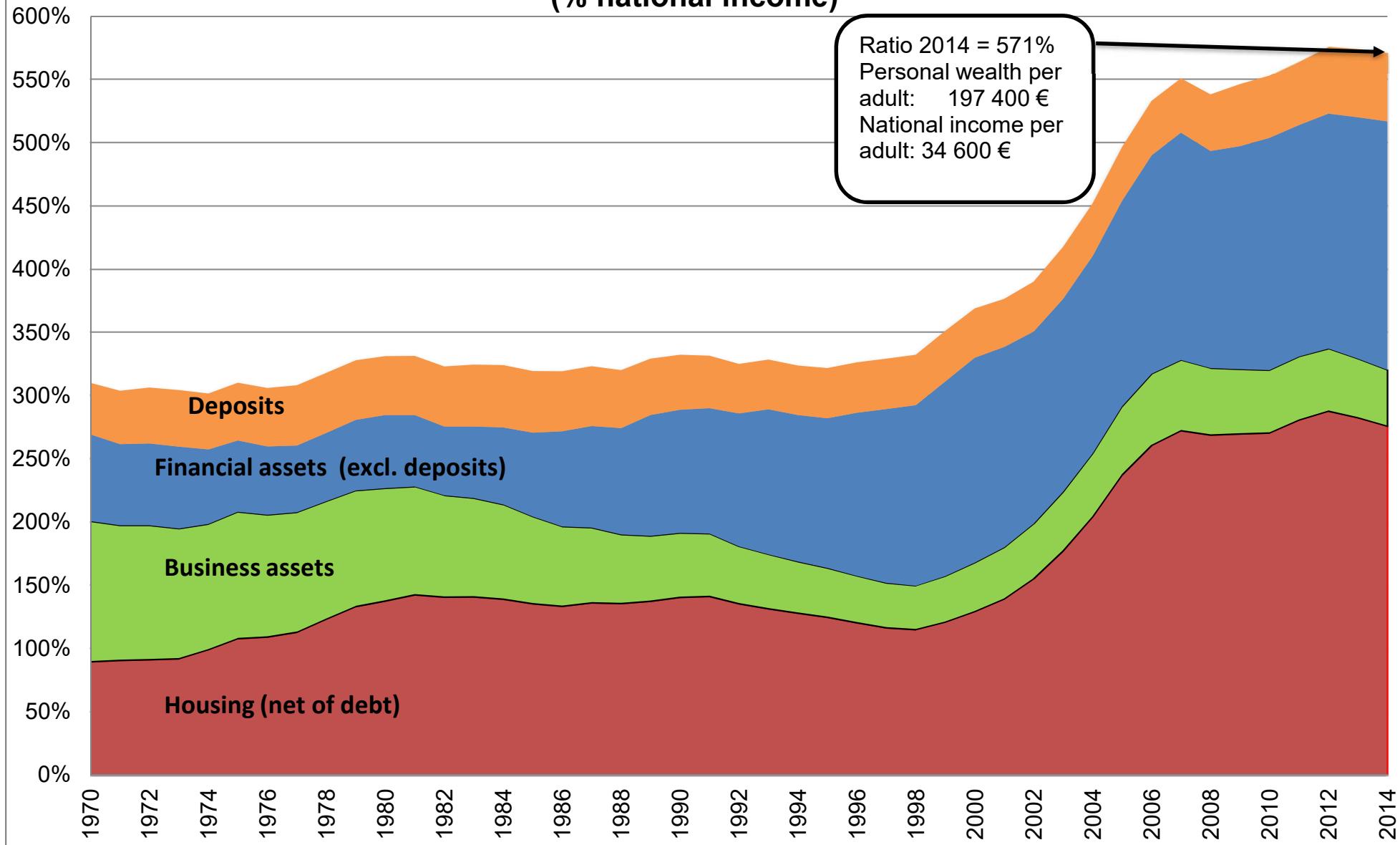
Figure 13. Asset composition by wealth level, France 2012

Deposits

Financial assets (excl. deposits)

Business assets

Housing (net of debt)

4 600 € 27 500 € 99 000 € 198 000 € 517 000 € 2 245 000 € 16 867 000 €

P0-10 P10-20 P20-30 P30-40 P40-50 P50-60 P60-70 P70-80 P80-90 P90-95 P95-99 P99-99.5 P99.5-99.9 P99.9-100
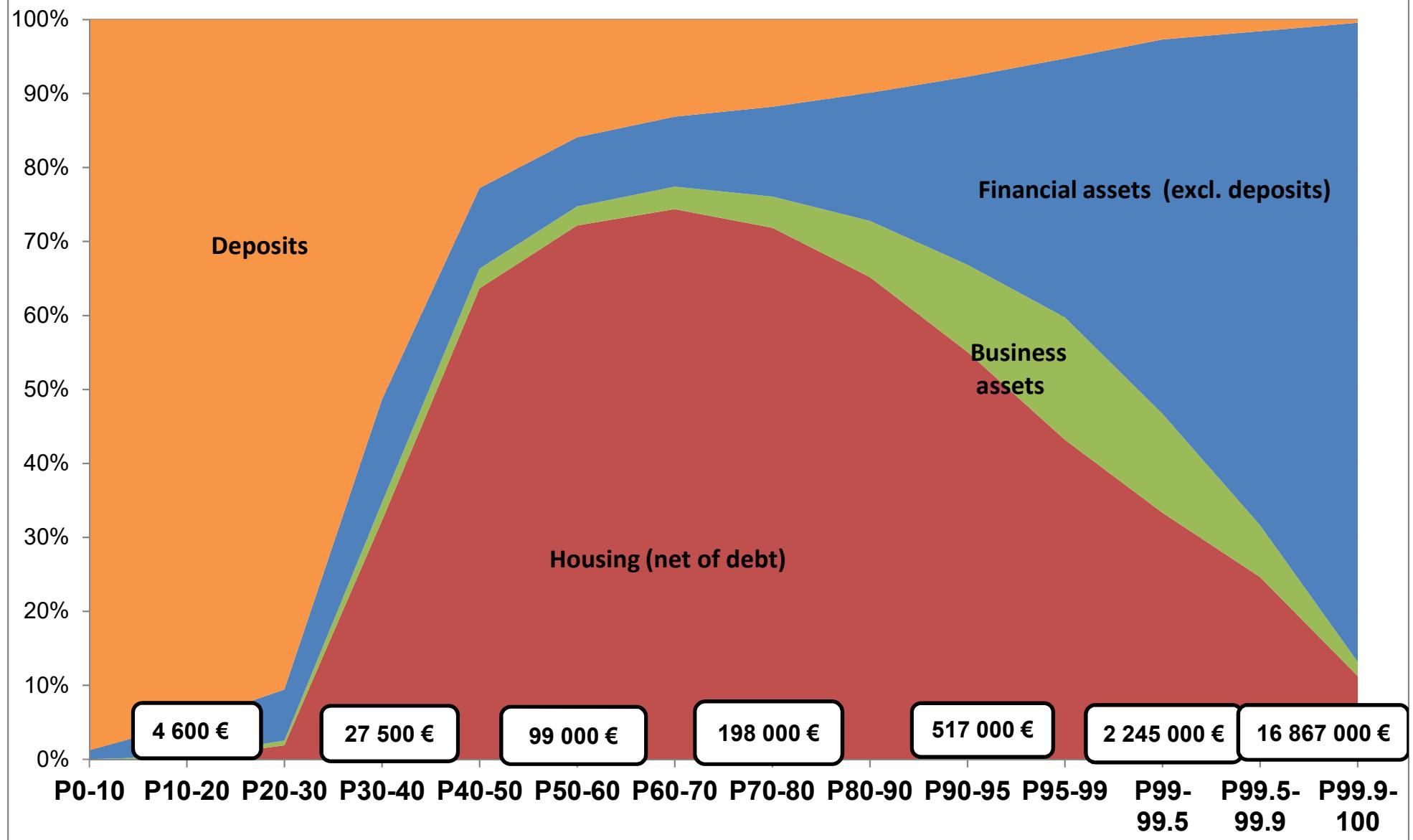
Figure 14. Asset composition by wealth level, France 1970

Deposits

Financial assets (excl. deposits)

Business assets

Housing (net of debt)

P0-10 · P10-20 · P20-30 · P30-40 · P40-50 · P50-60 · P60-70 · P70-80 · P80-90 · P90-95 · P95-99 · P99-99.5 · P99.5-99.9 · P99.9-100
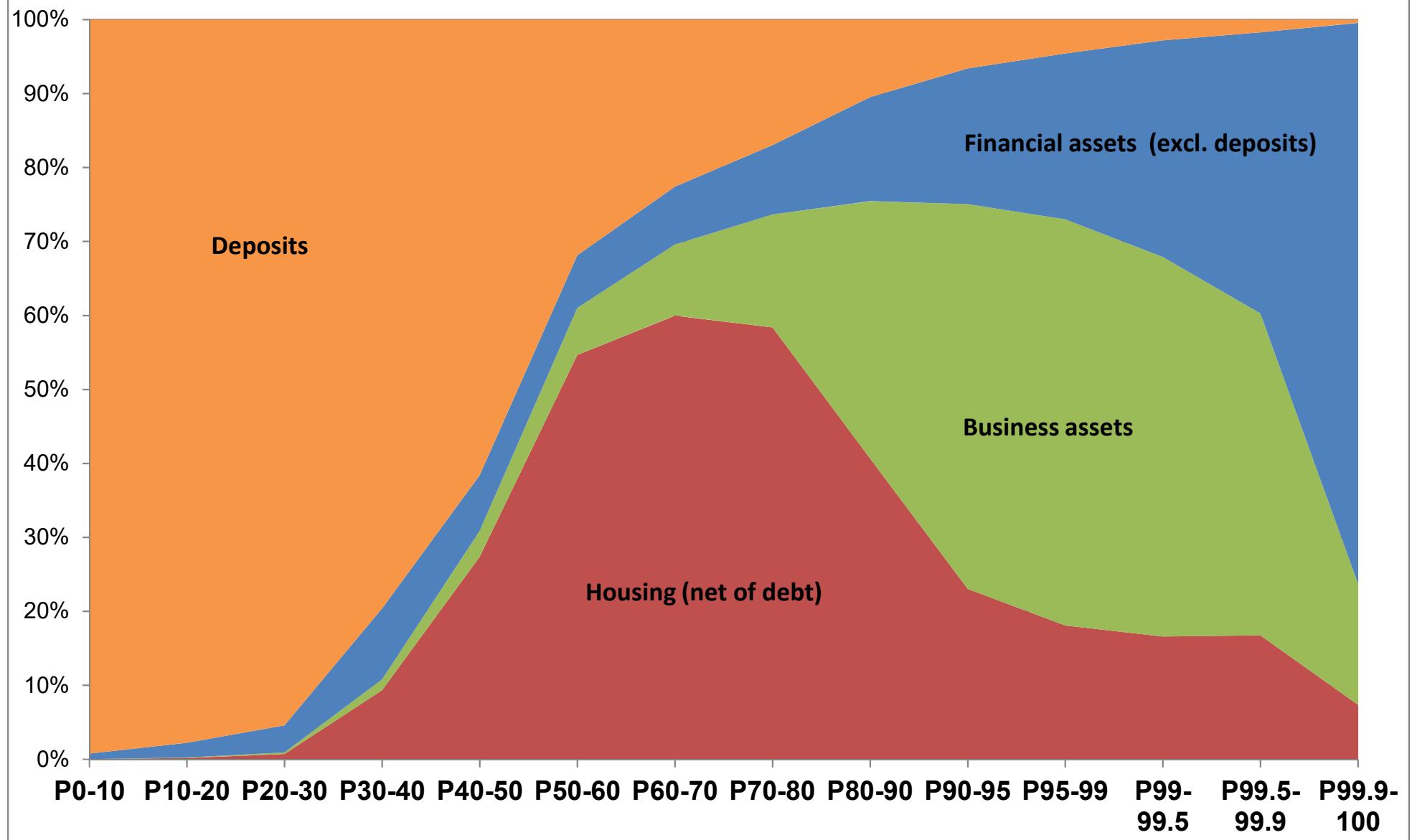
Figure 15. Asset composition by wealth level, France 1984
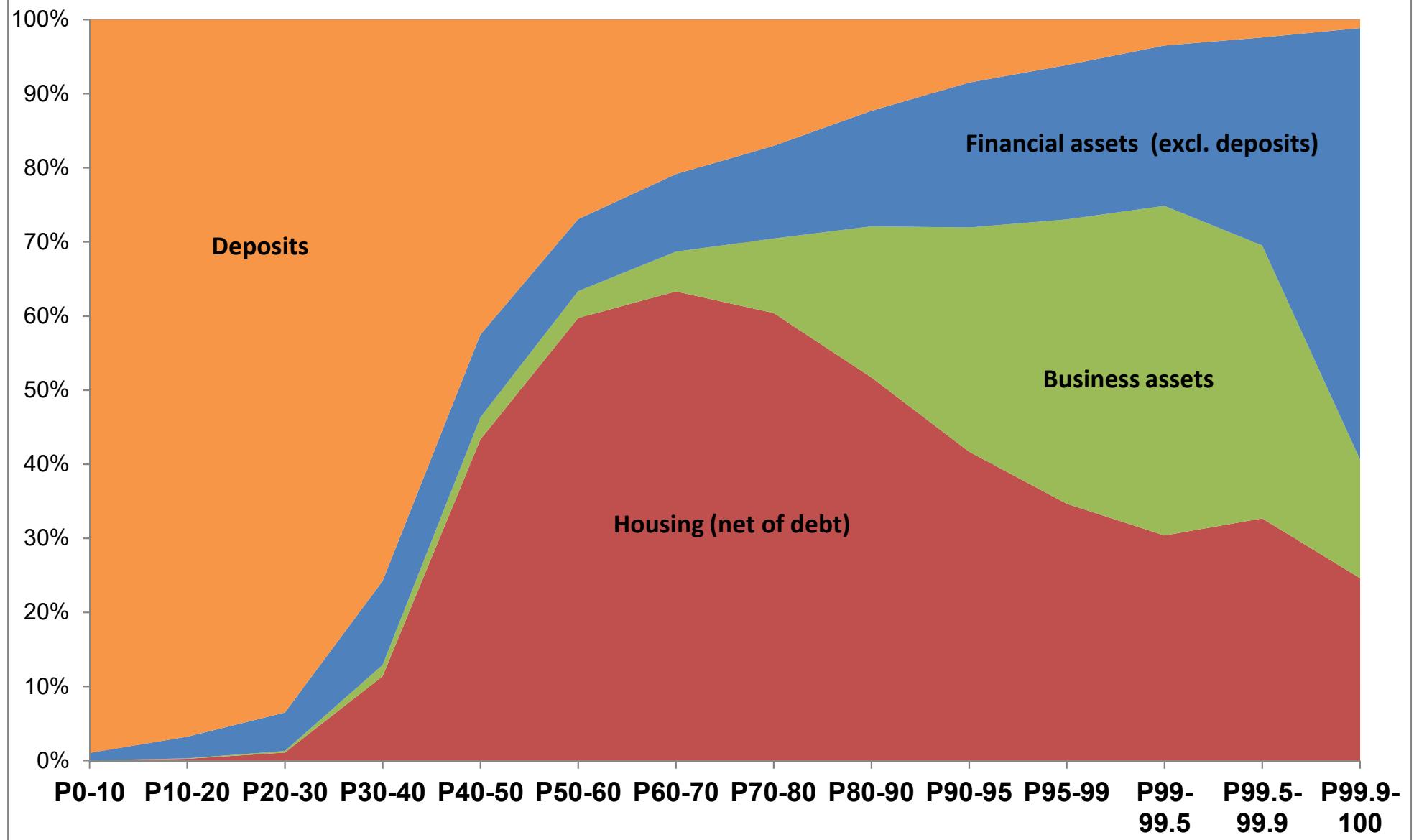
Figure 16. Asset composition by wealth level, France 2000
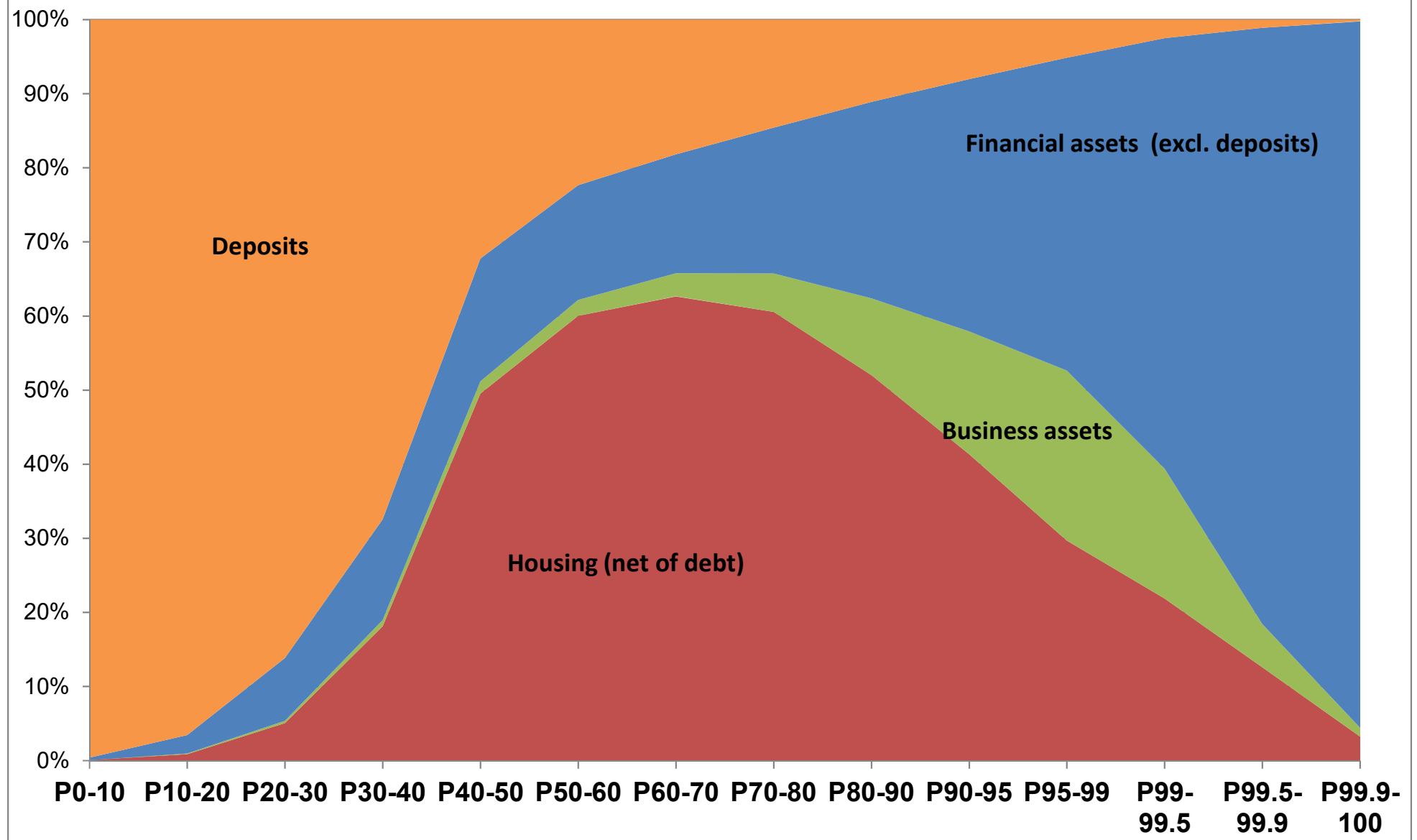
Figure 17. Decomposition of bottom 50% wealth share (% aggregate wealth)

Bottom 50% personal
wealth per adult :
20 160 € (2014)

Deposits

Financial assets (excl. deposits)

Housing (net of debt)
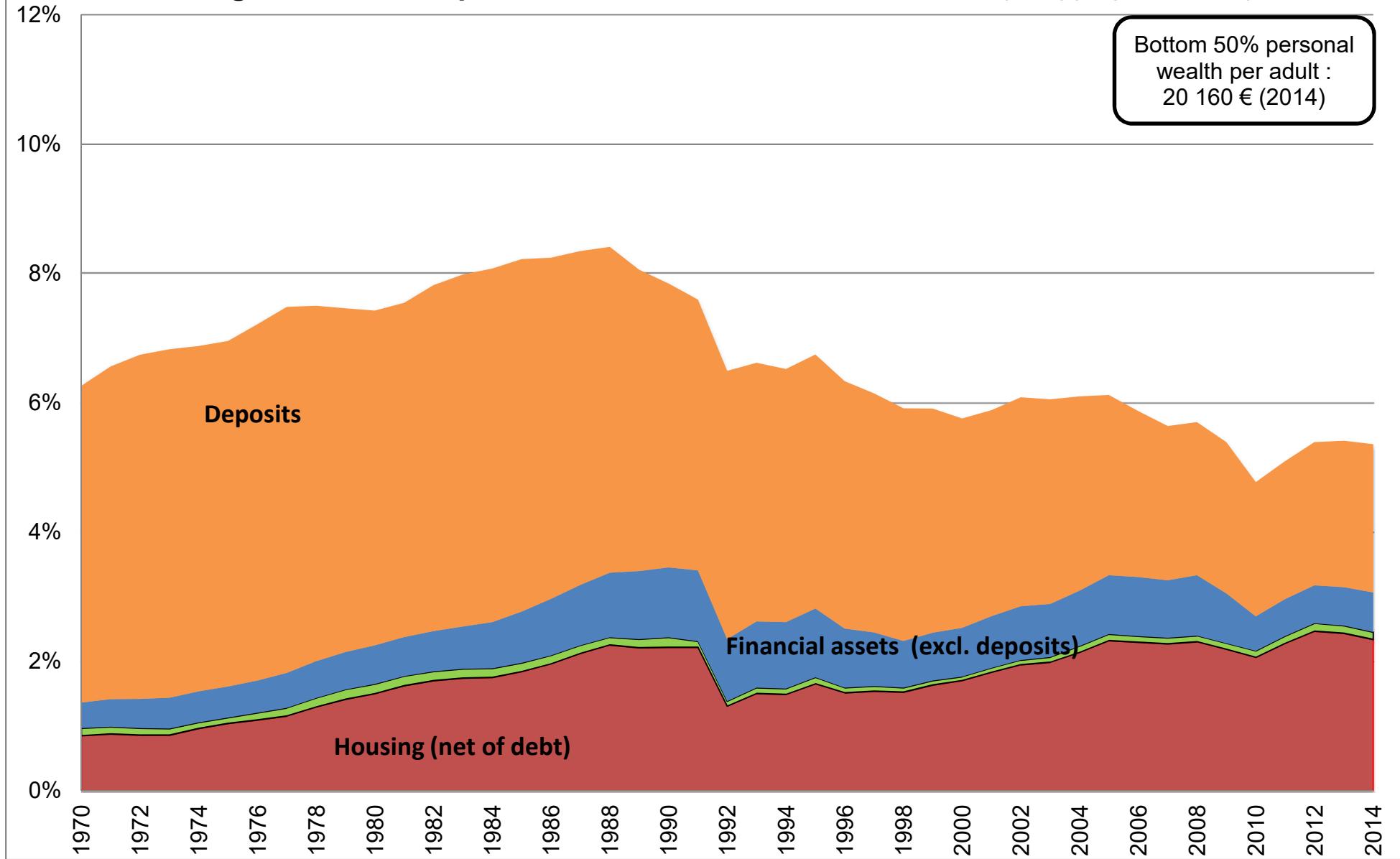
Figure 18. Decomposition of top 10% wealth share (% aggregate wealth)

Top 10% personal wealth per adult : 1 140 000 € (2014)

Deposits

Financial assets (excl. deposits)

Business assets

Housing (net of debt)
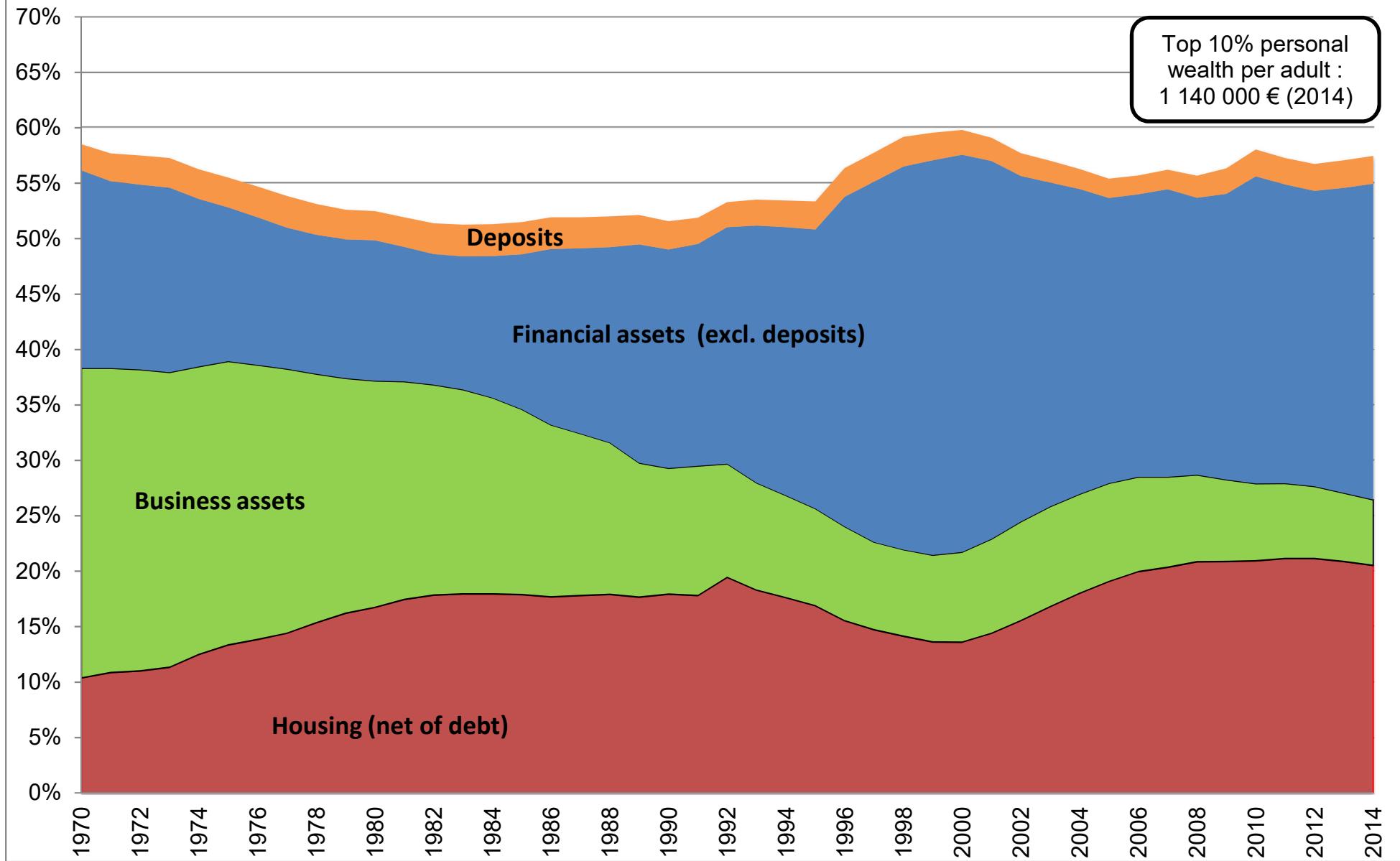
Figure 19. Decomposition of top 10-1% wealth share (% aggregate wealth)

Top 10-1% personal wealth per adult : 74 000 € (2014)

Deposits

Financial assets (excl. deposits)

Business assets

Housing (net of debt)
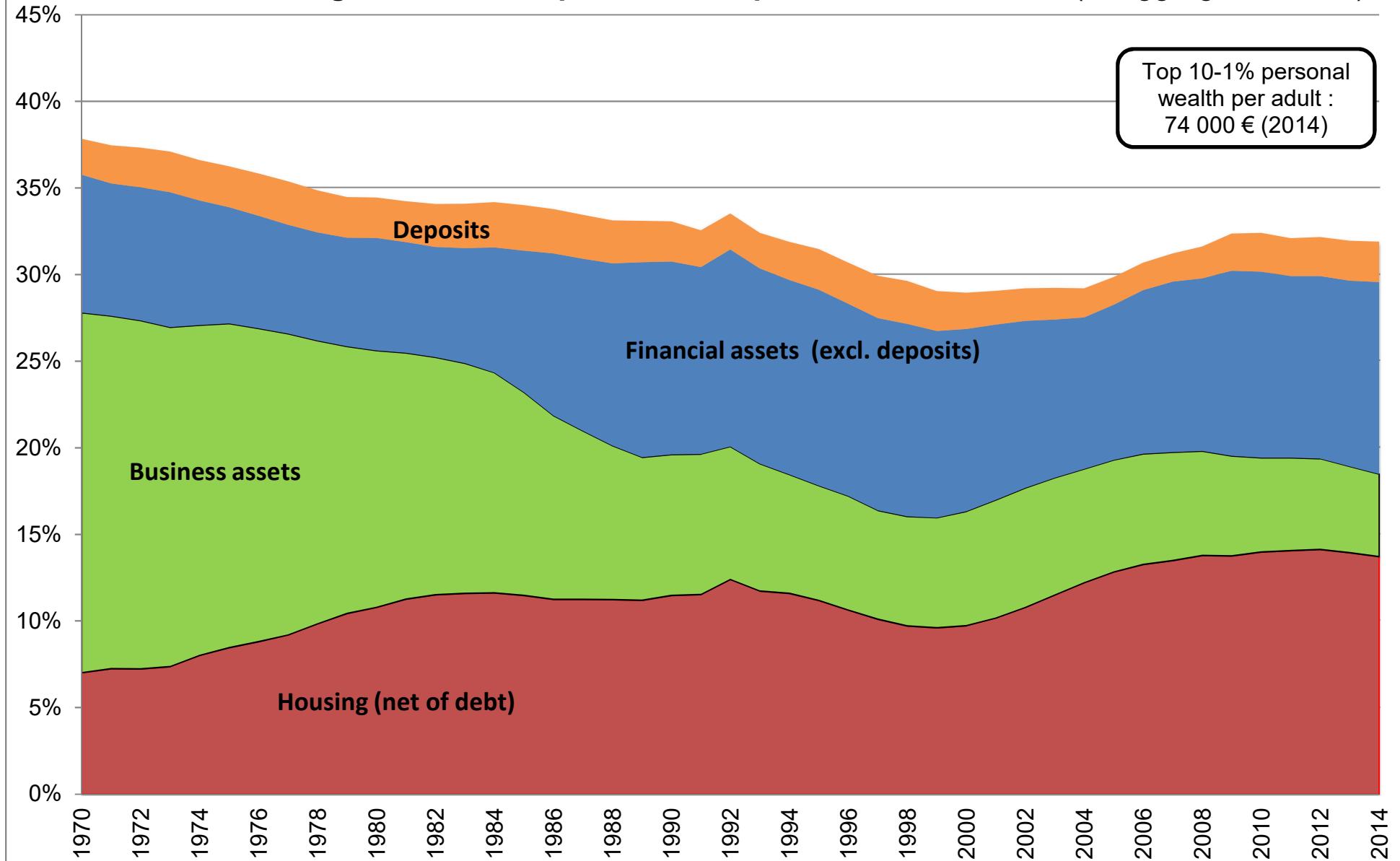
Figure 20. Total income share by wealth group
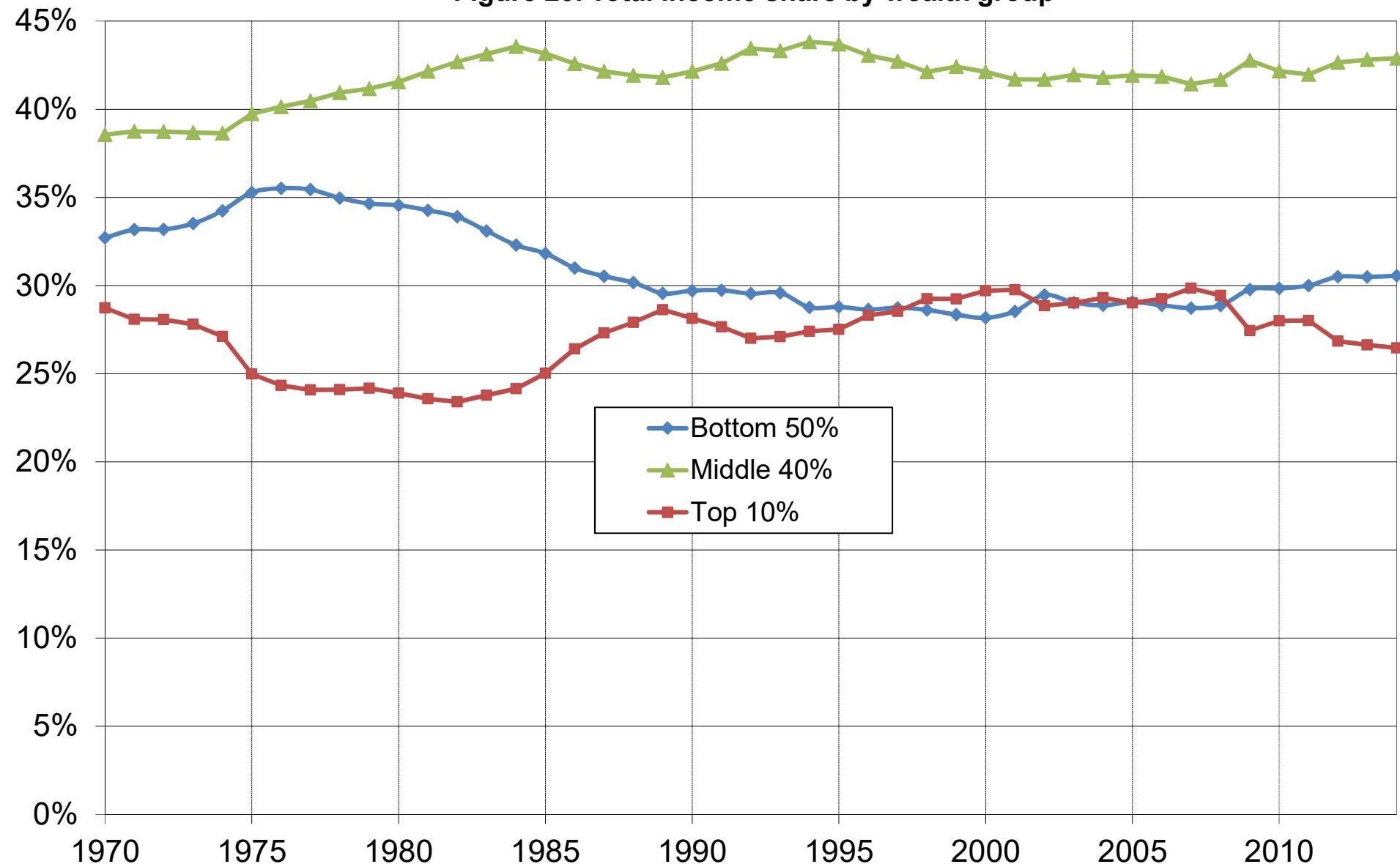
Figure 21. Age-wealth profiles in France, 1970-2012
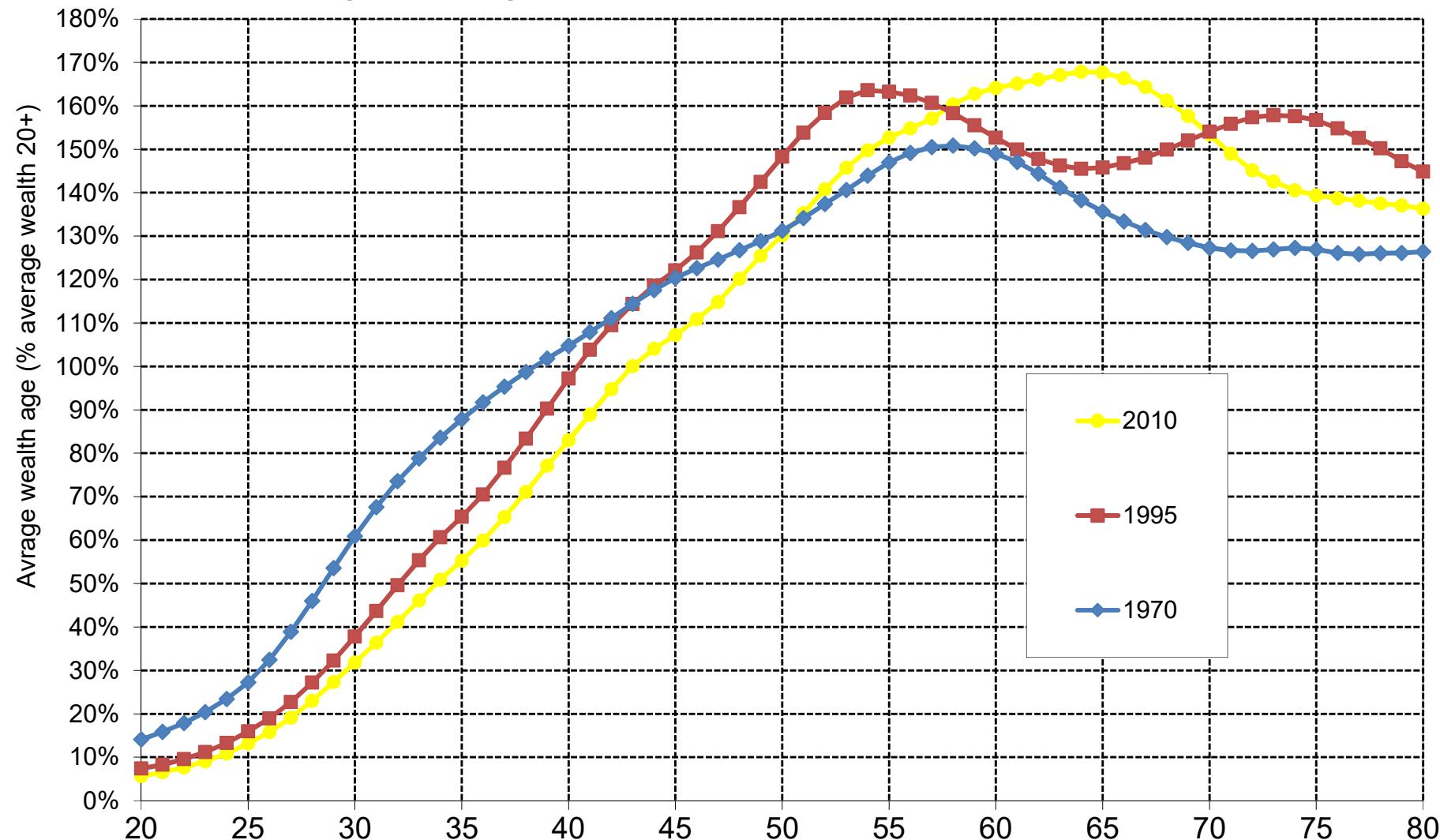
Figure 22. Wealth concentration by age group, France 1970-2012
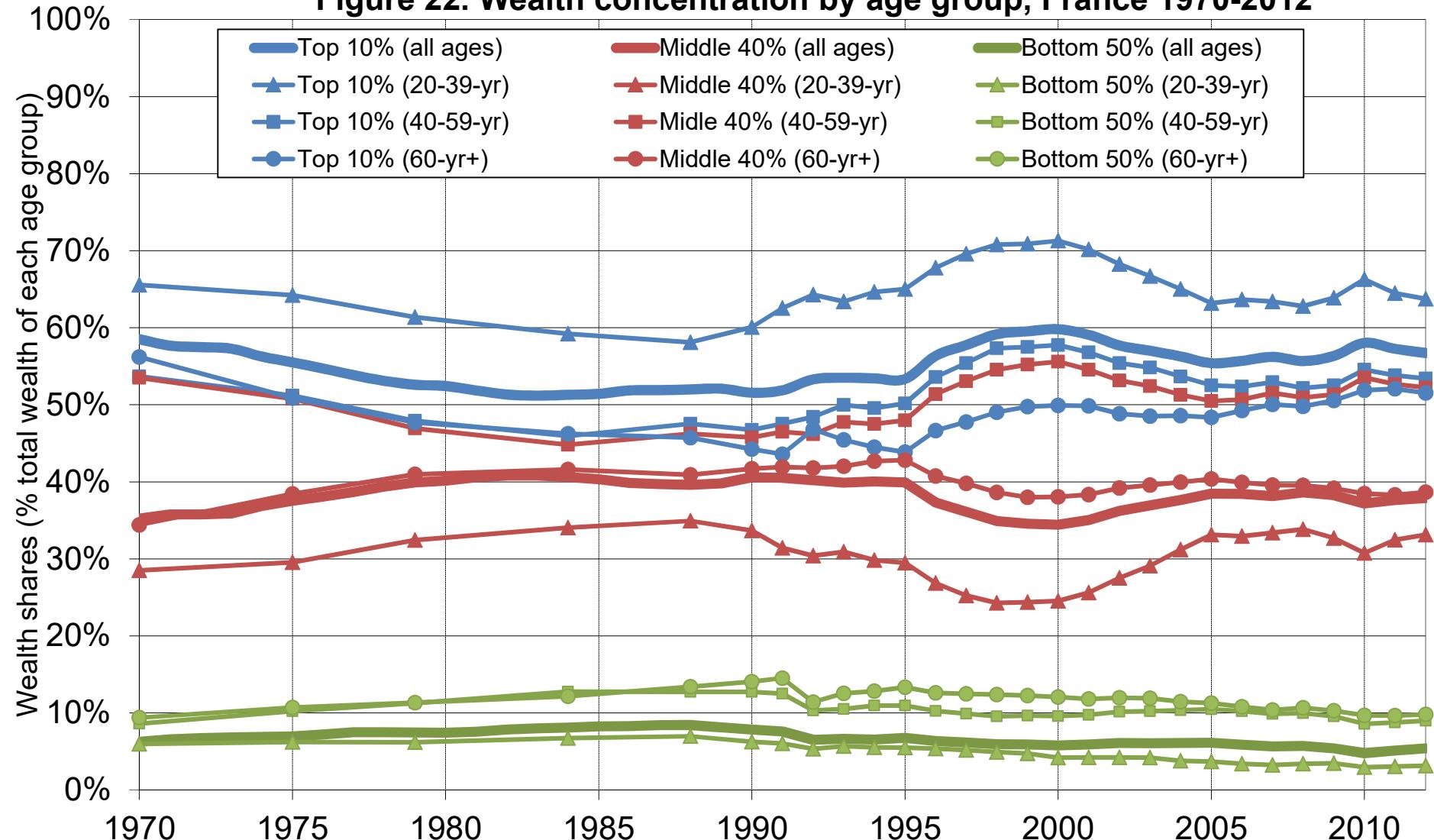
Figure 23a. Capital share
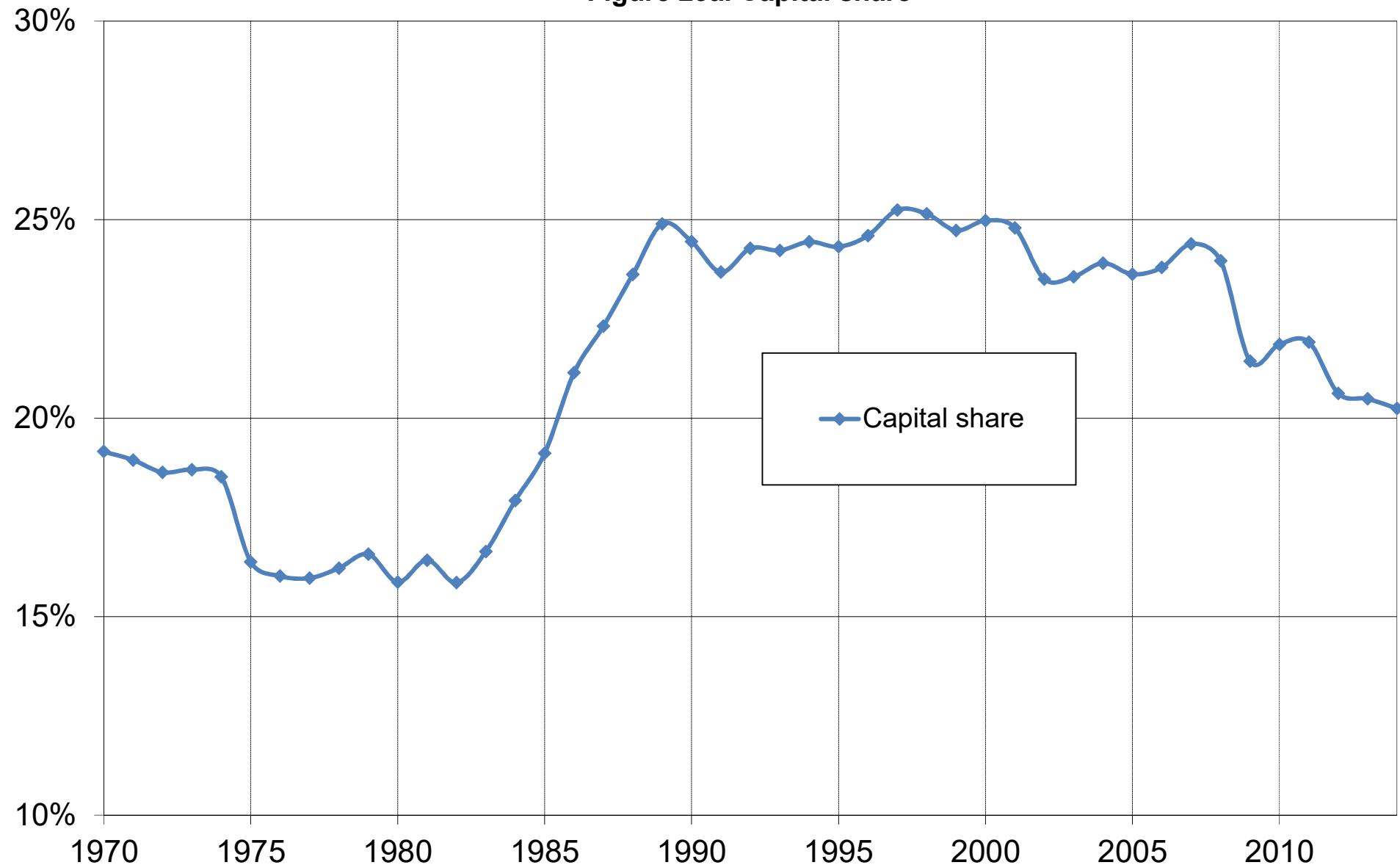
**Figure 23b. Income share accruing to the top 1% wealth group**

Capital income

Labor income
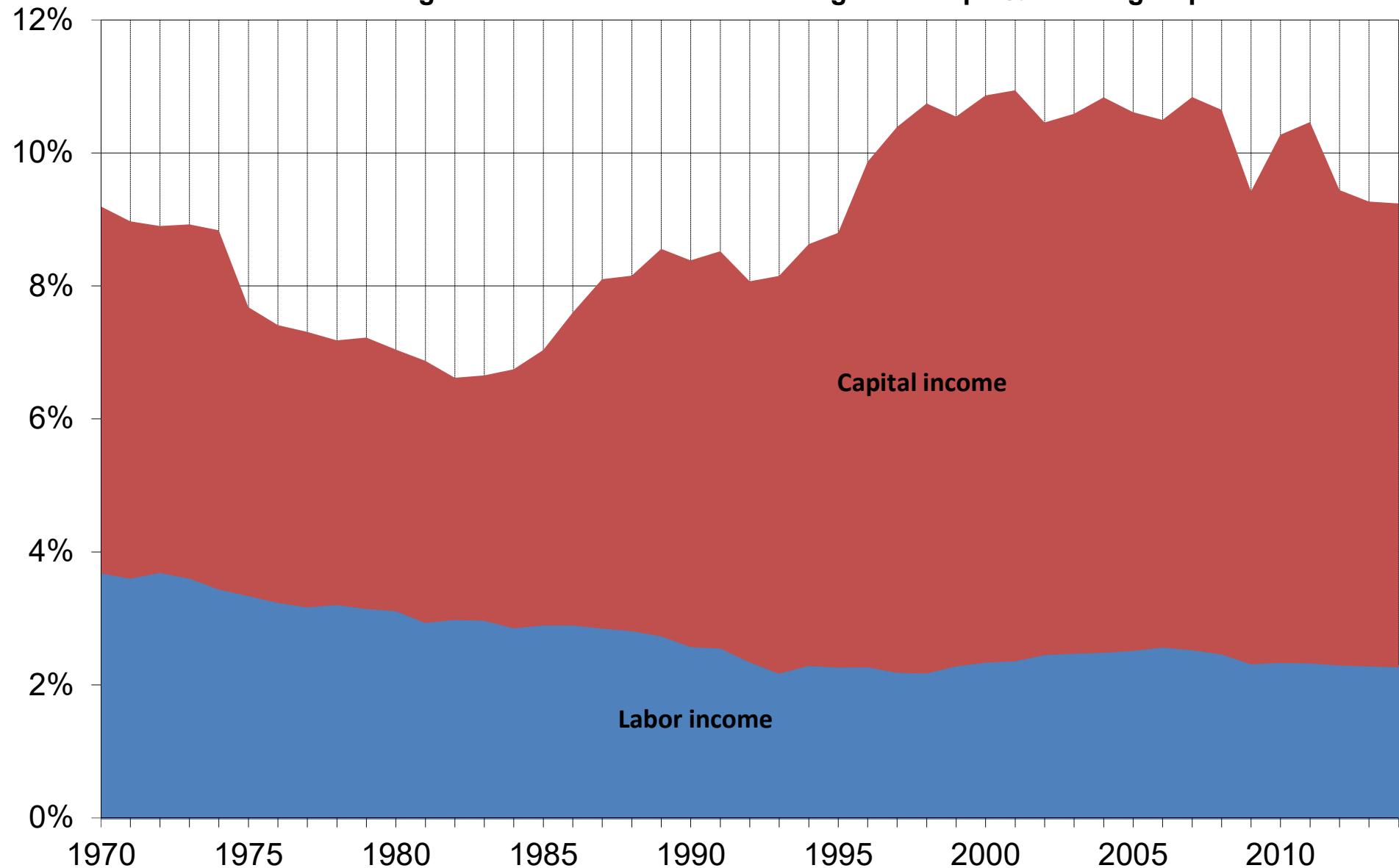
Figure 25. Probability for top labor earners to belong to top 0.5% wealth group

Top 0.5% labor earners have a 31% probability to belong to top 0,5% wealth group

Top 0.5% labor earners have a 15% probability to belong to top 0.5% wealth group

Top 0.5%
Top 1%
Top 10-1%
Middle 40%
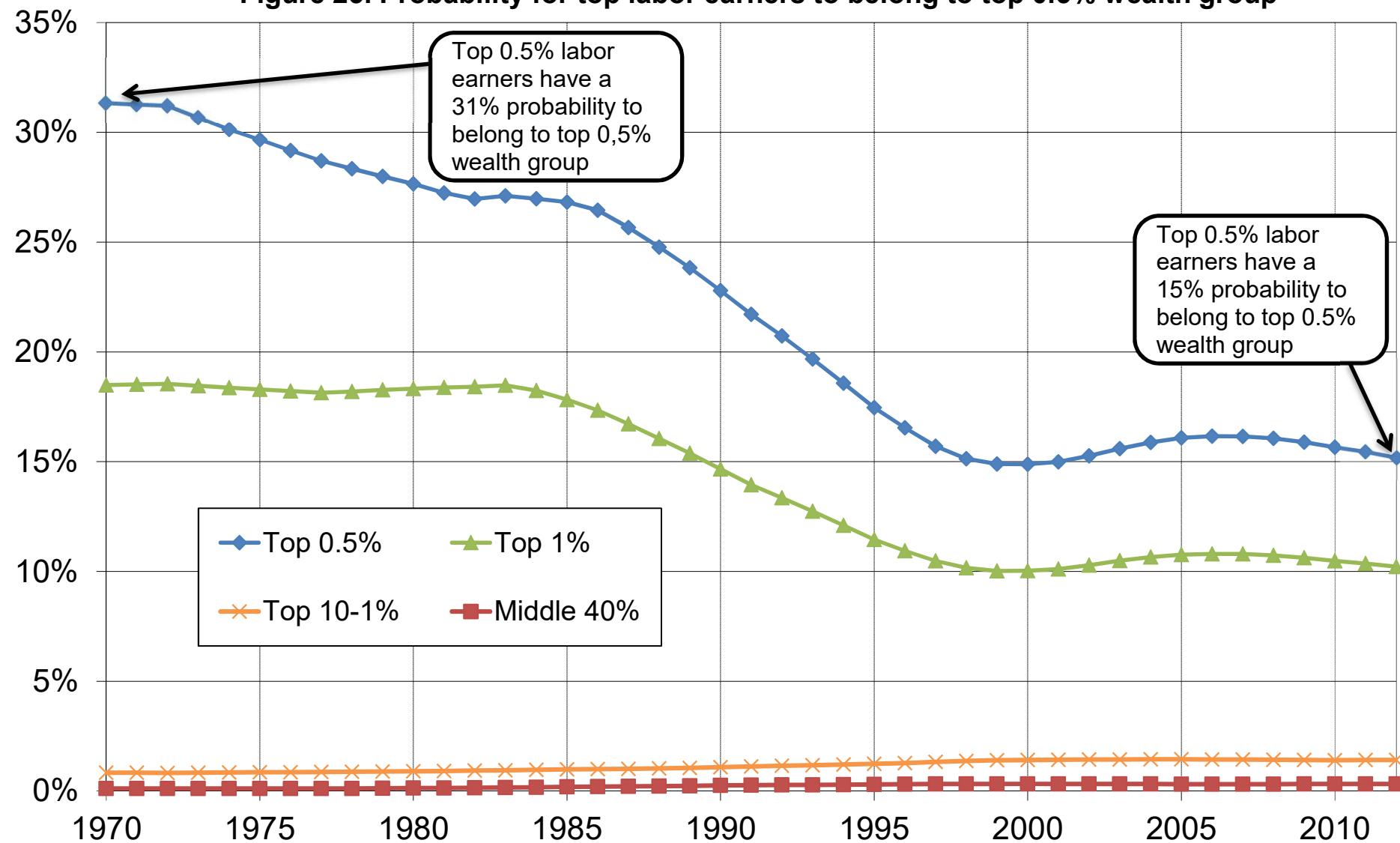
**Figure 28. Composition of aggregate personal wealth** (% gross wealth + debt)**, France 1970-2014**
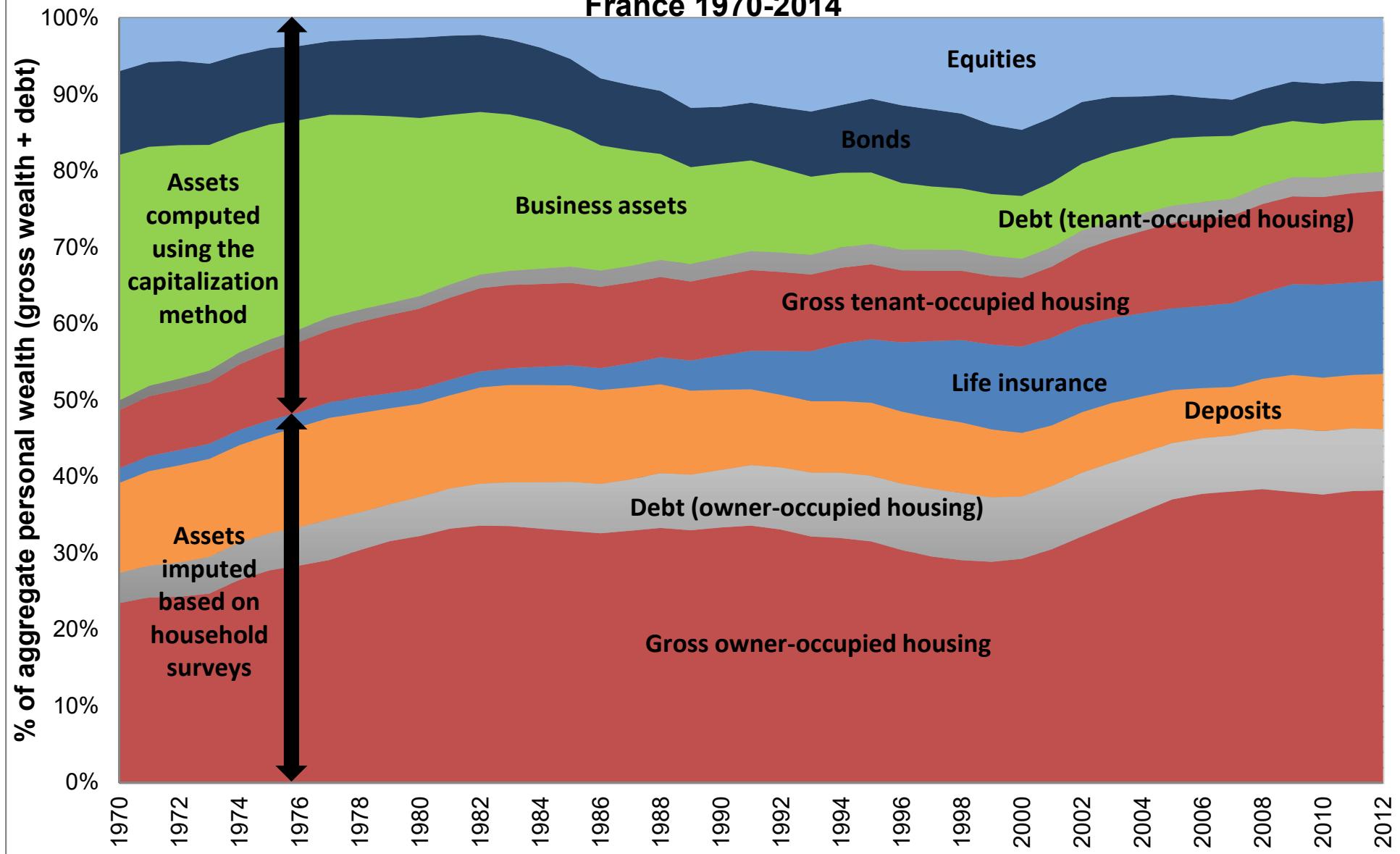
Figure 29. Wealth concentration in France: MICS method vs Wealth Surveys (wealth shares, % total wealth)

Legend:
- Top 1% (MICS)
- Top 1% (Wealth surveys)
- Top 10% (MICS)
- Top 10% (Wealth surveys)
- Middle 40% (MICS)
- Middle 40% (Wealth surveys)
- Bottom 50% (MICS)
- Bottom 50% (Wealth surveys)
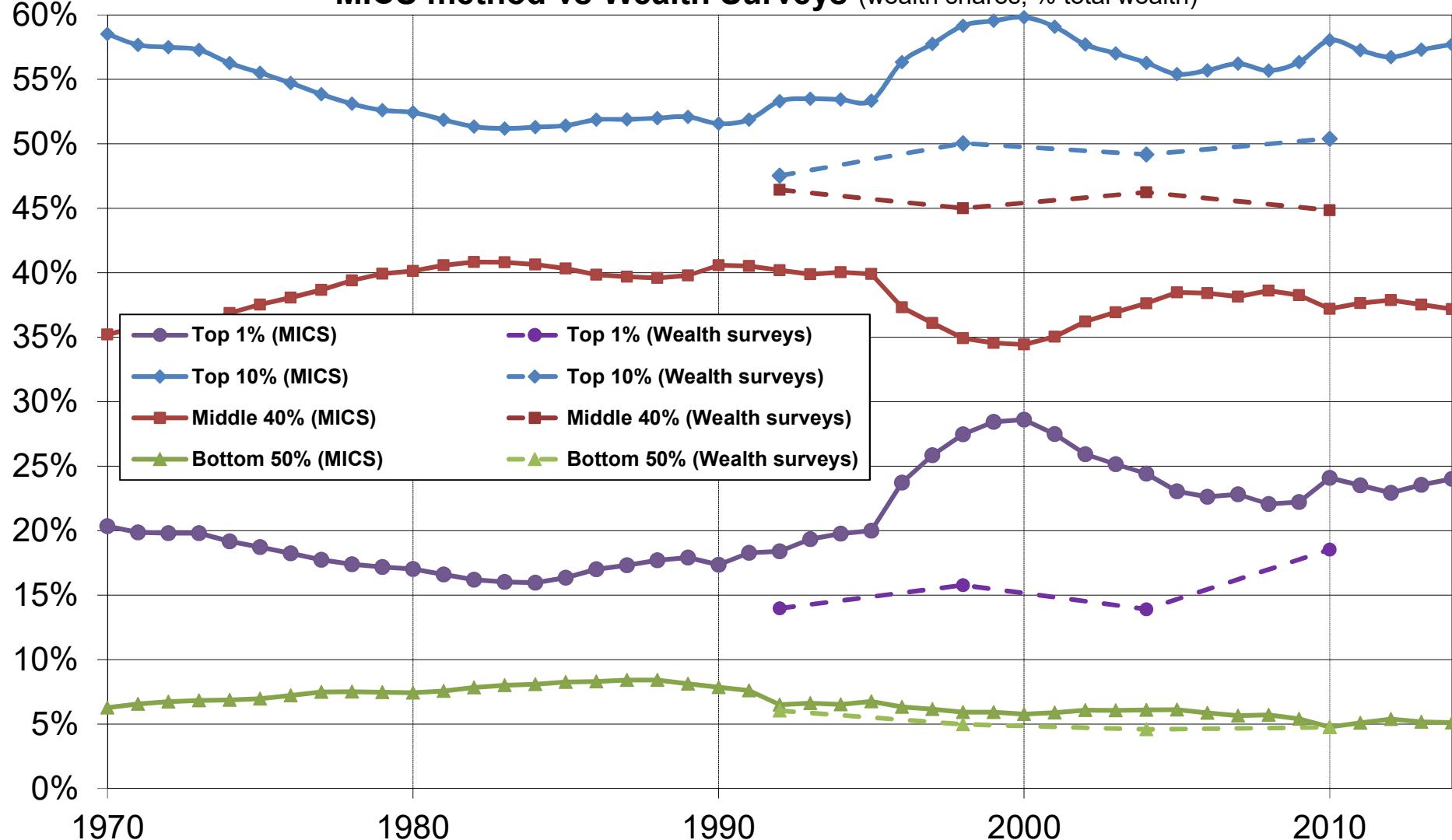
Figure 30. Wealth concentration in France from Wealth Surveys: individual vs household level (wealth shares, % total wealth)
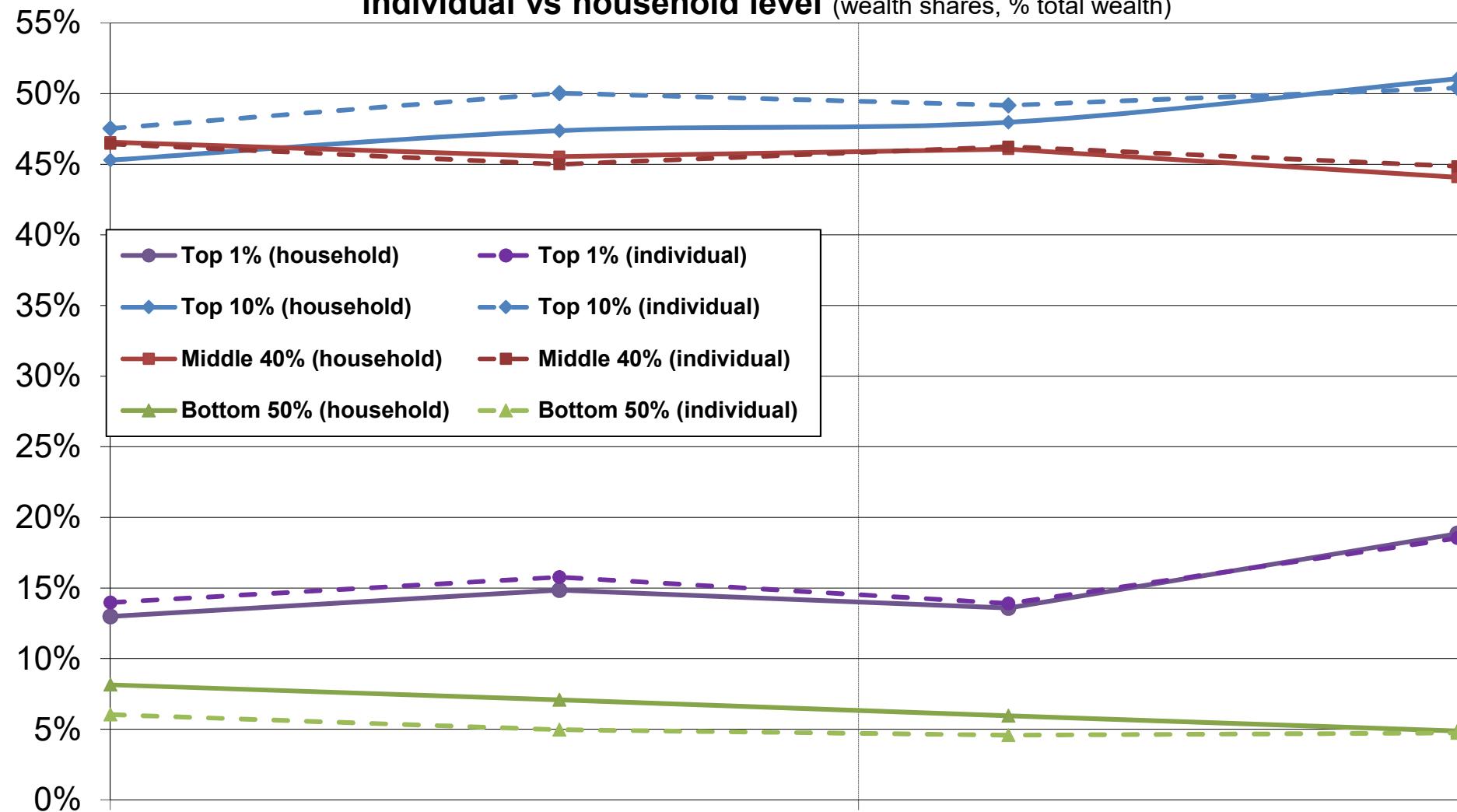
Figure 31. The role of asset price fluctuations on wealth inequality

Legend:
- Middle 40%: Observed
- Middle 40%: Fixed rate of capital gains 1970-2014
- Middle 40%: Fixed rate of capital gains 1970-2000
- Bottom 50%: Observed
- Bottom 50%: Fixed rate of capital gains 1970-2014
- Bottom 50%: Fixed rate of capital gains 1970-2000