Distributional Consequences
of
Asset Price Inflation in the Euro Area

Klaus Adam

University of Mannheim & CEPR

Panagiota Tzamourani

Deutsche Bundesbank

Workshop on "House price bubbles - how to detect, predict and prevent them?", Danmarks Nationalbank, 20. September 2016 [1]

Motivation

- Large scale CB sovereign debt purchase programs
  $\implies$ broad based asset price increases

- Jan 22, 2015: ECB announcement of PSPP

- +/- 3 months window around announcement date:

EuroStoxx50	+24%
10 yr Benchmark Bund	+6%

  House prices not avail. at high frequency, but likely also supported

Motivation

- How are the capital gains distributed across HH sector?

    - Size distribution of gains
    - Distribution of gains across net wealth distribution
    - Distribution of gains across income distribution

- Can we identify who are the (relative) 'losers'?
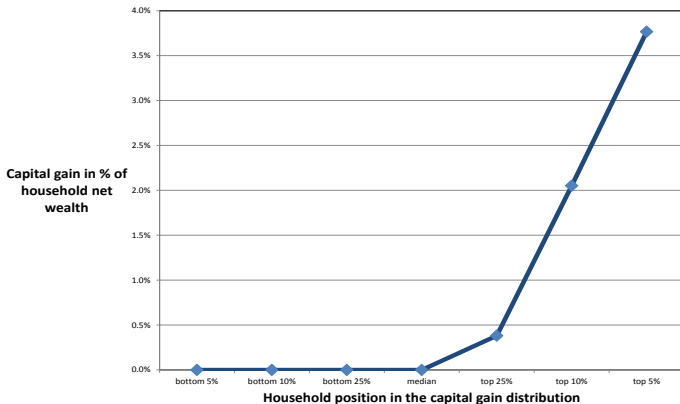
Data Source and Methodology

- Last available HFCS wave: fairly detailed & harmonized HH balance sheet information
- Approx. 62000 HHs, samples representative at country level

- Effects on HHs net wealth of
  - fixed 10% increase in equity/bond/housing prices
  - changes in asset prices after a conventional monetary policy shock (Peersman and Smets, 2003)
  - changes in bond and equity prices after OMT announcements, following Krishnamurthy, Nagel and Vissing-Jorgensen (2014)

- Data
  - Equity: stocks, business wealth, stock mutual funds and 21% of individual account pension wealth
  - Bonds: bonds, bond mutual funds, 79% of individual account pension wealth
  - Housing: houses, housing mutual funds

Data Source and Methodology

- Want to compare gains across HHs with different wealth and across different HH populations (different EA countries)

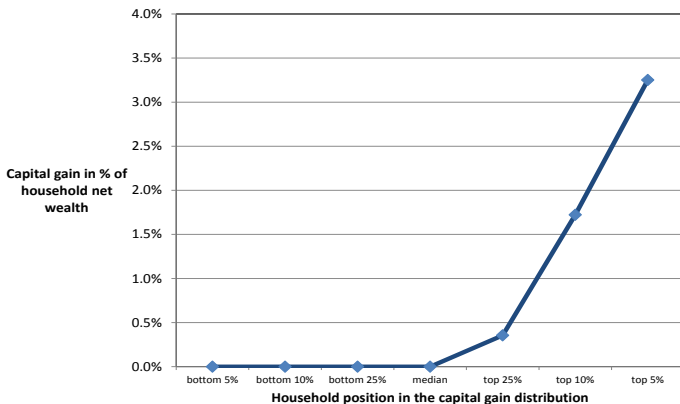- Scale the gains of each HH by its net wealth position:

  "*By how many % does HH net wealth change if stock/bond/housing prices increase by 10%?*"

- Exclude HHs with negative net wealth

1. **The size distribution of gains**

2. Gains across the wealth and income distribution

3. Who are the (relative) losers?
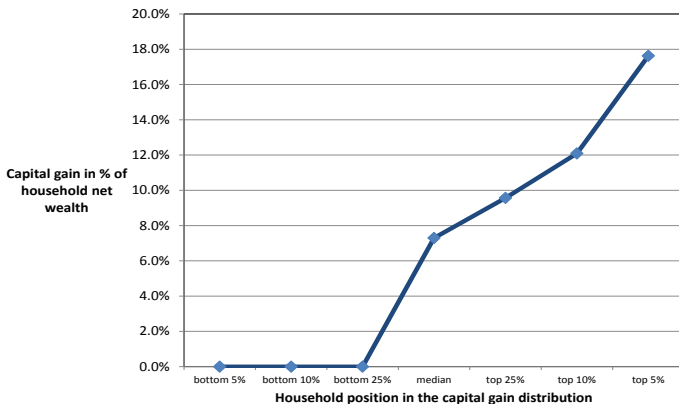
Size Distribution: Bond Price Increases

Capital gain in % of household net wealth (y-axis)

Household position in the capital gain distribution (x-axis: bottom 5%, bottom 10%, bottom 25%, median, top 25%, top 10%, top 5%)

Size Distribution: Equity Price Increases

Capital gain in % of household net wealth (y-axis, 0.0% to 4.0%)

Household position in the capital gain distribution (x-axis: bottom 5%, bottom 10%, bottom 25%, median, top 25%, top 10%, top 5%)

Size Distribution: House Price Increases

Capital gain in % of household net wealth (y-axis)

Household position in the capital gain distribution (x-axis): bottom 5%, bottom 10%, bottom 25%, median, top 25%, top 10%, top 5%

Size Distribution: House Price Increases, EA countries

| Country	bottom 5%	bottom 10%	bottom 25%	median	top 25%	top 10%	top 5%
Euro Area	0.0	0.0	0.0	**7.3**	9.6	12.1	17.6
Austria	0.0	0.0	0.0	1.8	8.6	9.8	11.2
Belgium	0.0	0.0	0.0	7.5	9.6	13.4	17.8
Cyprus	0.0	0.0	5.7	9.3	10.5	14.6	20.1
Finland	0.0	0.0	0.0	8.2	10.0	18.2	31.4
France	0.0	0.0	0.0	6.6	9.4	12.3	17.8
Germany	0.0	0.0	0.0	**0.0**	8.5	11.4	16.6
Greece	0.0	0.0	5.1	9.1	9.9	11.4	15.4
Italy	0.0	0.0	0.0	8.3	9.4	10.0	11.8
Luxemburg	0.0	0.0	0.0	8.9	10.1	16.8	24.7
Malta	0.0	0.0	4.1	7.9	9.2	9.9	11.4
Netherlands	0.0	0.0	0.0	5.5	10.9	20.7	36.0
Portugal	0.0	0.0	0.0	8.5	9.9	14.1	21.0
Slovakia	0.0	1.9	7.3	9.0	9.8	10.0	12.4
Slovenia	0.0	0.0	7.1	9.4	9.9	10.3	12.1
Spain	0.0	0.0	7.1	9.4	10.0	14.2	19.8

- Relatively few HHs benefit from bond and equity price increases

- House Price increases more widely spread and affect median HH (Germany an exception)

1. The size distribution of gains

2. **Gains across the wealth and income distribution**
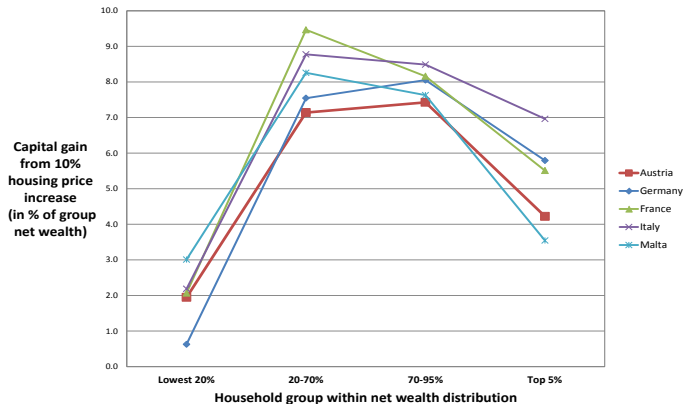
3. Who are the (relative) losers?
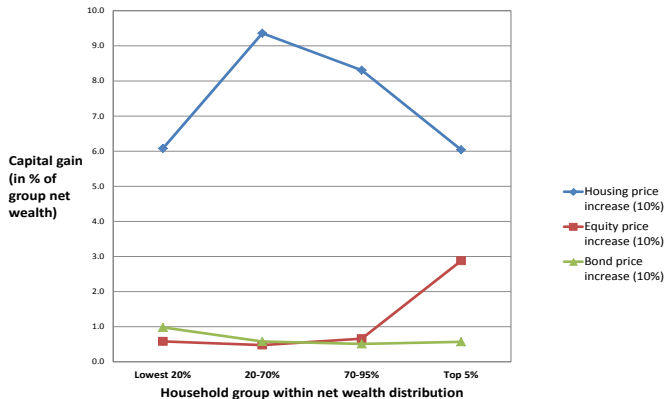
House Price Increases: Heterogeneity across EA countries
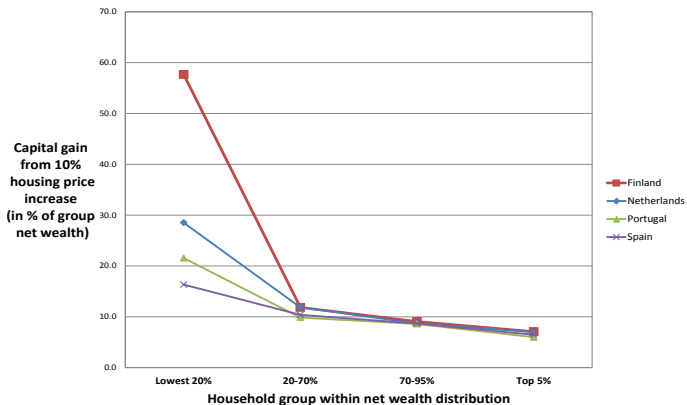
House Price Increases: Heterogeneity across EA countries

Effects on Net Wealth Ginis

Gini	Prior to increase	HP ΔGini (%)	Equity ΔGini (%)	Bond ΔGini (%)
Euro Area	0.651	-0.6	0.5	0.0
Austria	0.735	-0.4	0.7	0.0
Belgium	0.592	-1.2	0.4	0.2
Cyprus	0.676	-1.0	0.8	-0.1
Finland	0.603	-1.2	0.4	0.0
France	0.662	-0.6	0.5	0.1
Germany	0.724	-0.2	0.4	-0.1
Greece	0.531	-0.4	0.2	0.0
Italy	0.598	-0.3	0.4	0.0
Luxemburg	0.644	-0.6	0.2	0.0
Malta	0.593	-1.0	1.4	-0.1
Netherlands	0.546	-1.2	0.0	-0.4
Portugal	0.652	-0.9	0.6	0.0
Spain	0.557	-1.2	0.7	0.0
Slovakia	0.438	-0.7	0.5	0.0
Slovenia	0.512	-0.8	0.7	0.0

Expansionary Conventional Monetary Policy Shock

- Peersman and Smets (2003) estimate impulse responses to a 25 basispoint reduction in EA interest rates

- After 4 quarters:
  - A 1.8% increase in stock prices,
  - No movement in the long-term bond price
  - A **0.025%** increase in housing prices

- Compute the net wealth gains over the wealth distribution arising from the monetary policy shock.

Expansionary Conventional Monetary Policy Shock
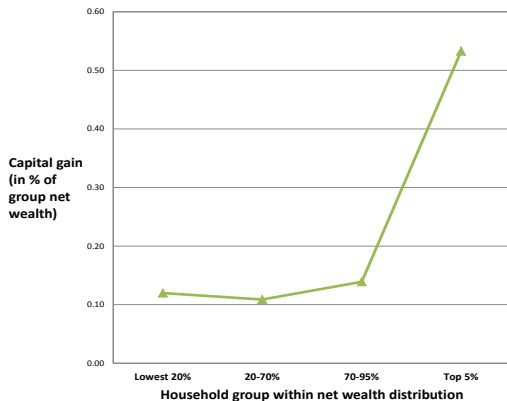
# Gains from an Unconventional Monetary Policy Shock: OMT

- Consider 2 day closing price changes around OMT annoucement days (Krishnamurthy, Nagel & Vissing-Jorgensen (2014))

- The OMT announcement dates are
  - July 26, 2012: Mario Draghi's 'whatever-it-takes' speech
  - August 2, 2012 and September 6, 2012: ECB presser

	Barclays Euro Aggregate Bond Index	EuroStoxx50 Stock Index
July 26, 2012	+0.55%	+6.58%
August 2, 2012	+0.04%	+1.68%
September 6, 2012	+0.38%	+3.96%
Cumulative effects	**+0.97%**	**+12.23%**

Gains from an Unconventional Monetary Policy Shock: OMT
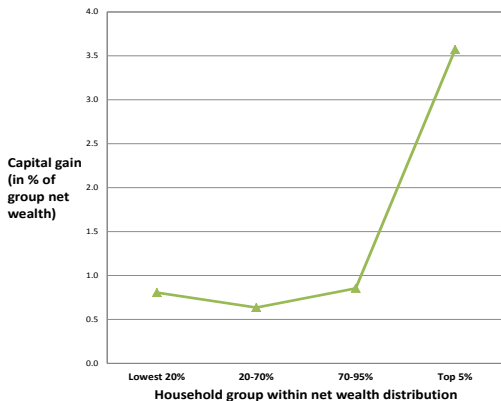
Distribution of Gains Across Income Classes
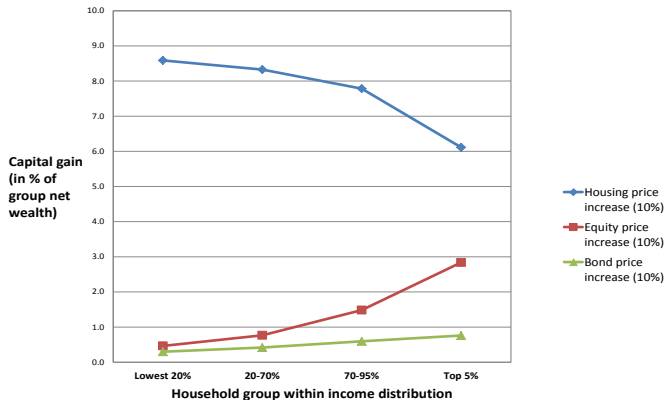
Outline

1. The size distribution of gains

2. Gains across the wealth and income distribution

3. **Who are the (relative) losers?**

- Connection between capital gains & welfare?

Who Are the (Relative) Losers?

- Connection between capital gains & welfare?

- HHs often have long investment horizons on some assets (pension wealth, housing)

Who Are the (Relative) Losers?

- Connection between capital gains & welfare?

- HHs often have long investment horizons on some assets (pension wealth, housing)

- Capital gains $\iff$ low future returns
  > Capital gains may not imply welfare gains!

Who Are the (Relative) Losers?

- Connection between capital gains & welfare?

- HHs often have long investment horizons on some assets (pension wealth, housing)

- Capital gains $\iff$ low future returns

  $>$ Capital gains may not imply welfare gains!

- Seek to identify HHs who have $<10\%$ of net wealth in 'long-dated' assets (equities, bonds, housing)

  $>$ These households fail to benefit from capital gains in noticeable amounts

Who Are the (Relative) Losers?

Euro Area	All HHs	Long assets ≤ 10%	Long assets > 10%
Number of HHs (in mlns)	130.1	28.2	101.9
Household characteristics			
Median HH net wealth (euro)	125,018	5,938	185,233
Median HH income (euro)	29,160	19,131	33,112
Median HH age	52	47	54
Capital gains (in % of net wealth)			
Real estate price increase (10%)	7.68	0.03	7.78
Equity price increase (10%)	1.44	0.04	1.46
Bond price increase (10%)	0.55	0.06	0.55

- About 3/4 of HHs do not benefit from bond price or equity price increases

Summary

- About 3/4 of HHs do not benefit from bond price or equity price increases

- Capital gains from bond price increases do not correlate with wealth or income distribution

Summary

- About 3/4 of HHs do not benefit from bond price or equity price increases

- Capital gains from bond price increases do not correlate with wealth or income distribution

- Capital gains from equity price increases strongly concentrated at top end of wealth & income distribution

Summary

- About 3/4 of HHs do not benefit from bond price or equity price increases

- Capital gains from bond price increases do not correlate with wealth or income distribution

- Capital gains from equity price increases strongly concentrated at top end of wealth & income distribution

- Gains from housing price increases reduce wealth inequality

Summary

- About 3/4 of HHs do not benefit from bond price or equity price increases

- Capital gains from bond price increases do not correlate with wealth or income distribution

- Capital gains from equity price increases strongly concentrated at top end of wealth & income distribution

- Gains from housing price increases reduce wealth inequality
  - there exists considerable heterogeneity across euro area countries

Summary

- About 3/4 of HHs do not benefit from bond price or equity price increases

- Capital gains from bond price increases do not correlate with wealth or income distribution

- Capital gains from equity price increases strongly concentrated at top end of wealth & income distribution

- Gains from housing price increases reduce wealth inequality
  - there exists considerable heterogeneity across euro area countries

- 20% of HHs do not benefit from capital gains: tend to be wealth and income poor HHs