

Mortgage Debt and Consumption

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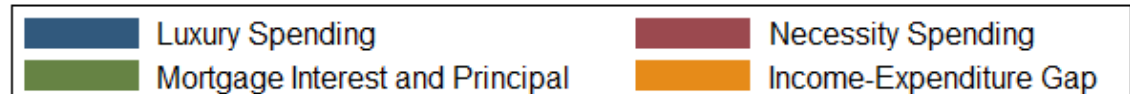
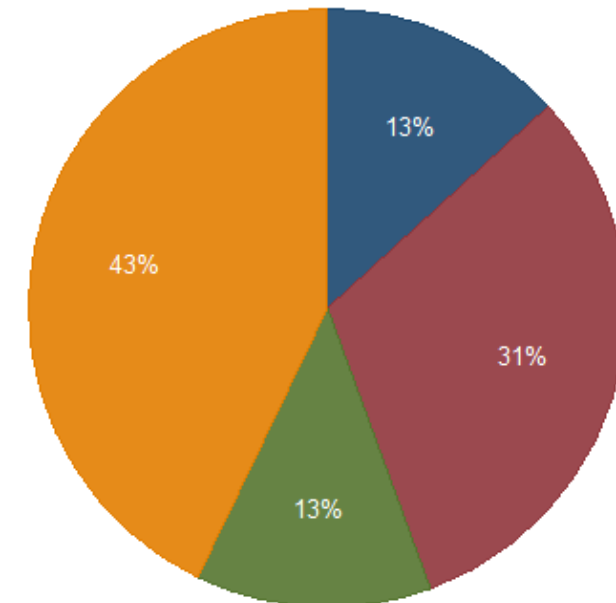
HOW DOES MORTGAGE DEBT INFLUENCE CONSUMER BUDGETING CONSIDERATIONS?



What is the Consumer Budget?

- Consumer Budgets
 - ▶ Mortgage Payments
 - ▶ Other Debt Payments
 - ▶ Other Expenditures
 - ▶ Taxes
 - ▶ Savings
 - ▶ Unreported Expenditures

Percent Share of Income
mortgage holders in 2014



Consumer Budgets

- As a proportion of income, consumer allocations can be distributed into three categories: luxury expenditures, necessity expenditures, mortgage payments.
- An assumption – Any income which does not fall into these categories is represented by the income-expenditure gap.

What is necessity and luxury? Income Elasticity (ξ):

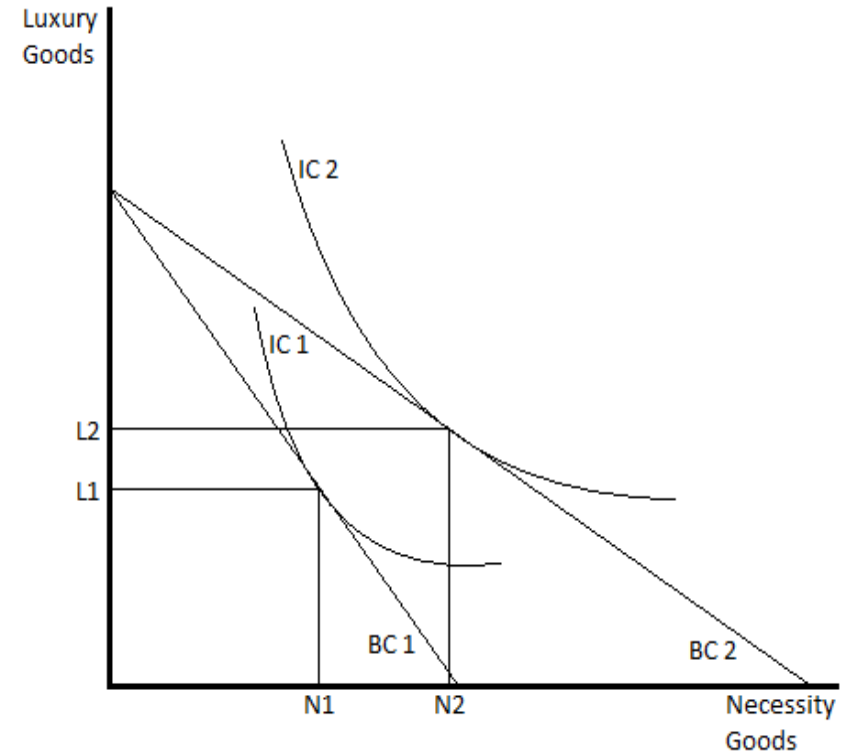
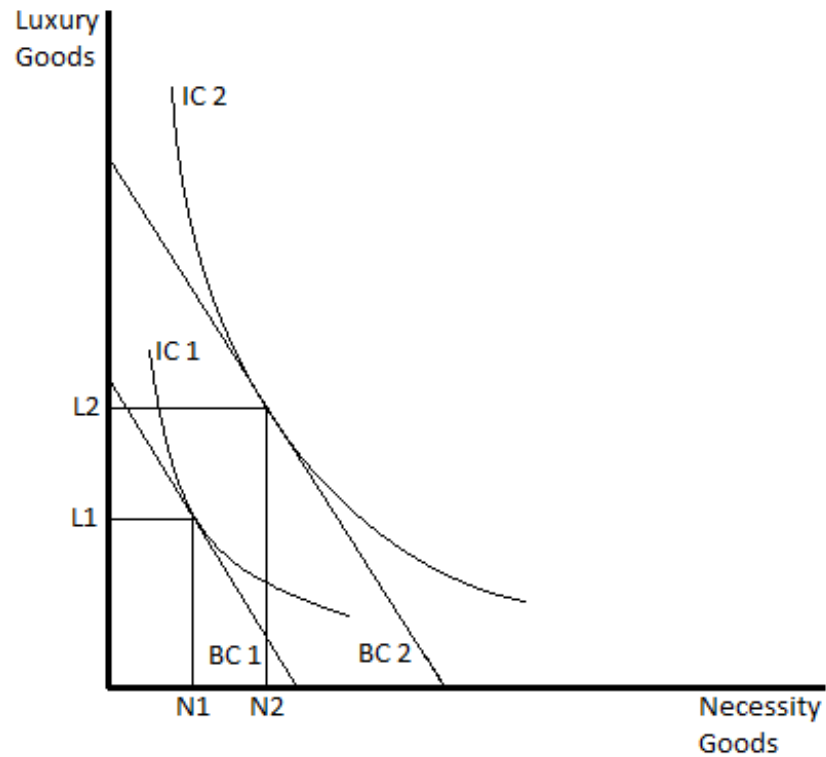
$$\xi < 1$$



$$\xi > 1$$



Consumer Choice Theory



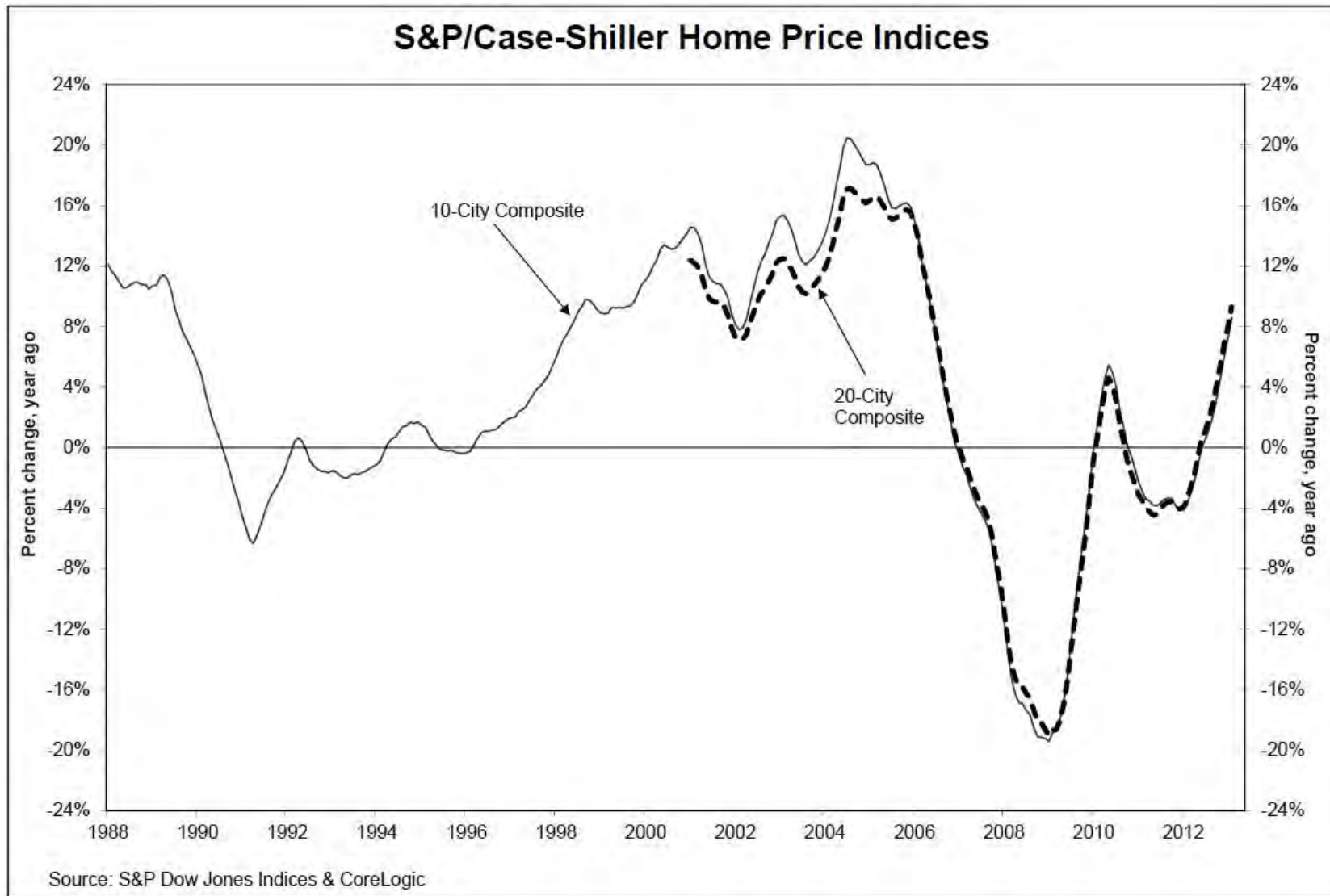
Mortgage Debt

- Properties of Mortgages:
 - ▶ Associate with a payment
 - ▶ Interest and Principal
 - ▶ Contract based expenditure
 - ▶ Necessity for subgroup
 - ▶ Luxury for whole sample
- Mathematically expressed as:

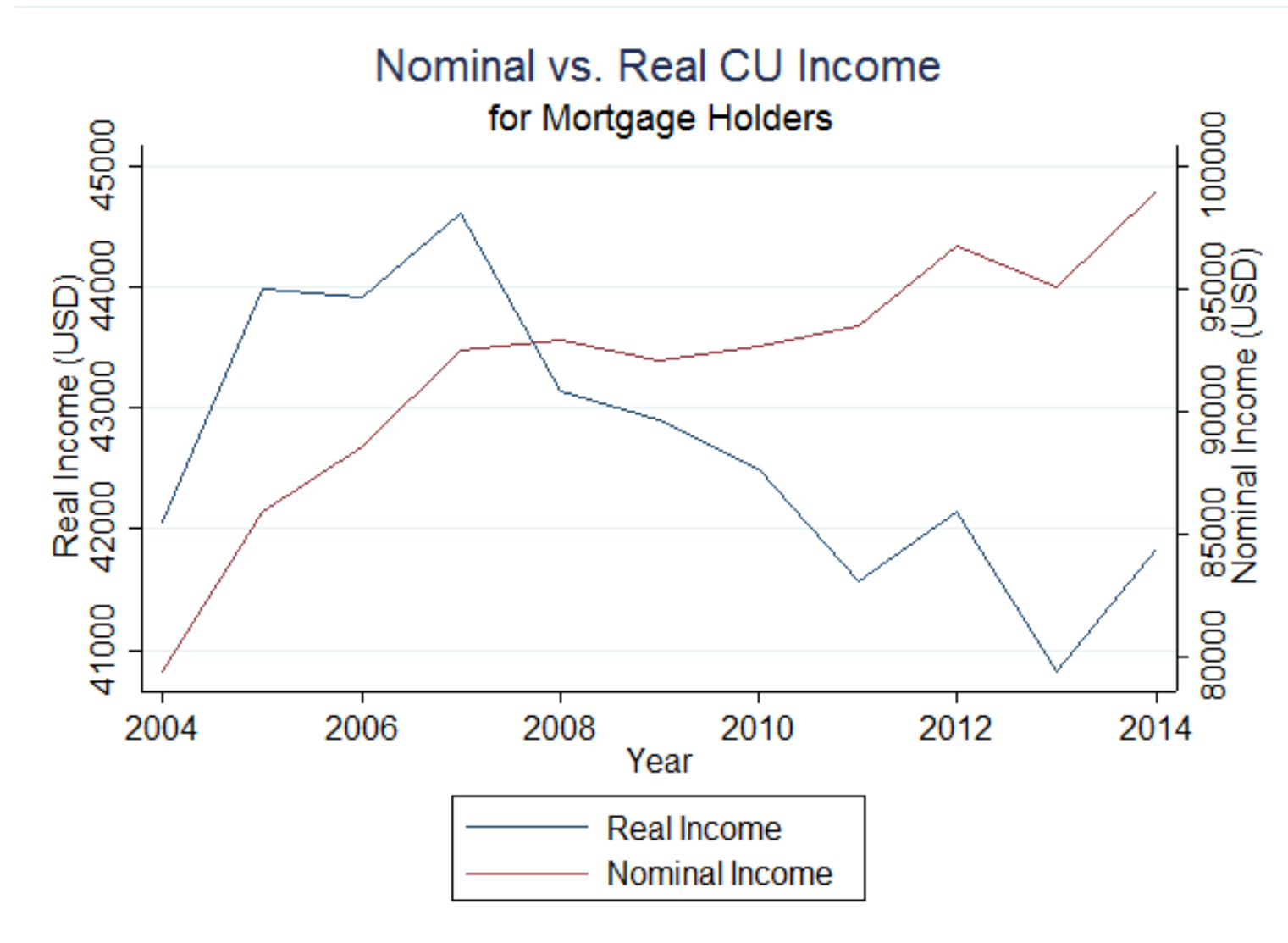
$$M = P \sum_{k=1}^n \frac{1}{(1+i)^k}$$



Price Effect of Housing



Income



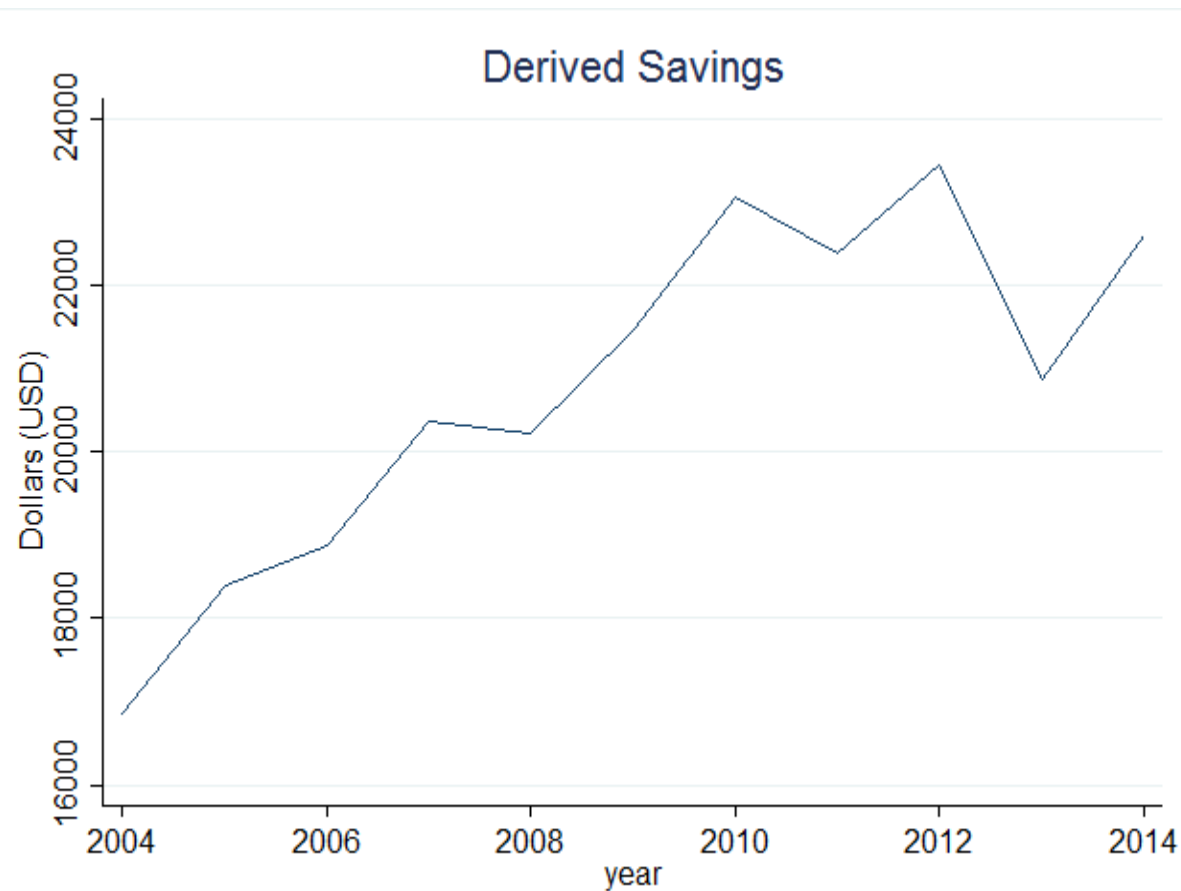
Savings

- What is savings in the context of CE data? How can we talk intelligently about savings?
 - ▶ Income after taxes less expenditures
 - ▶ Income before taxes less expenditures
 - ▶ Carefully define what we mean by savings
- What is it we want to know?
 - ▶ What proportion of income is not going to a recorded expenditure?
 - State Taxes
 - Actual savings
 - Do we include any actual expenditures in this category for the purpose of the analysis?
 - Pensions
 - Social Security

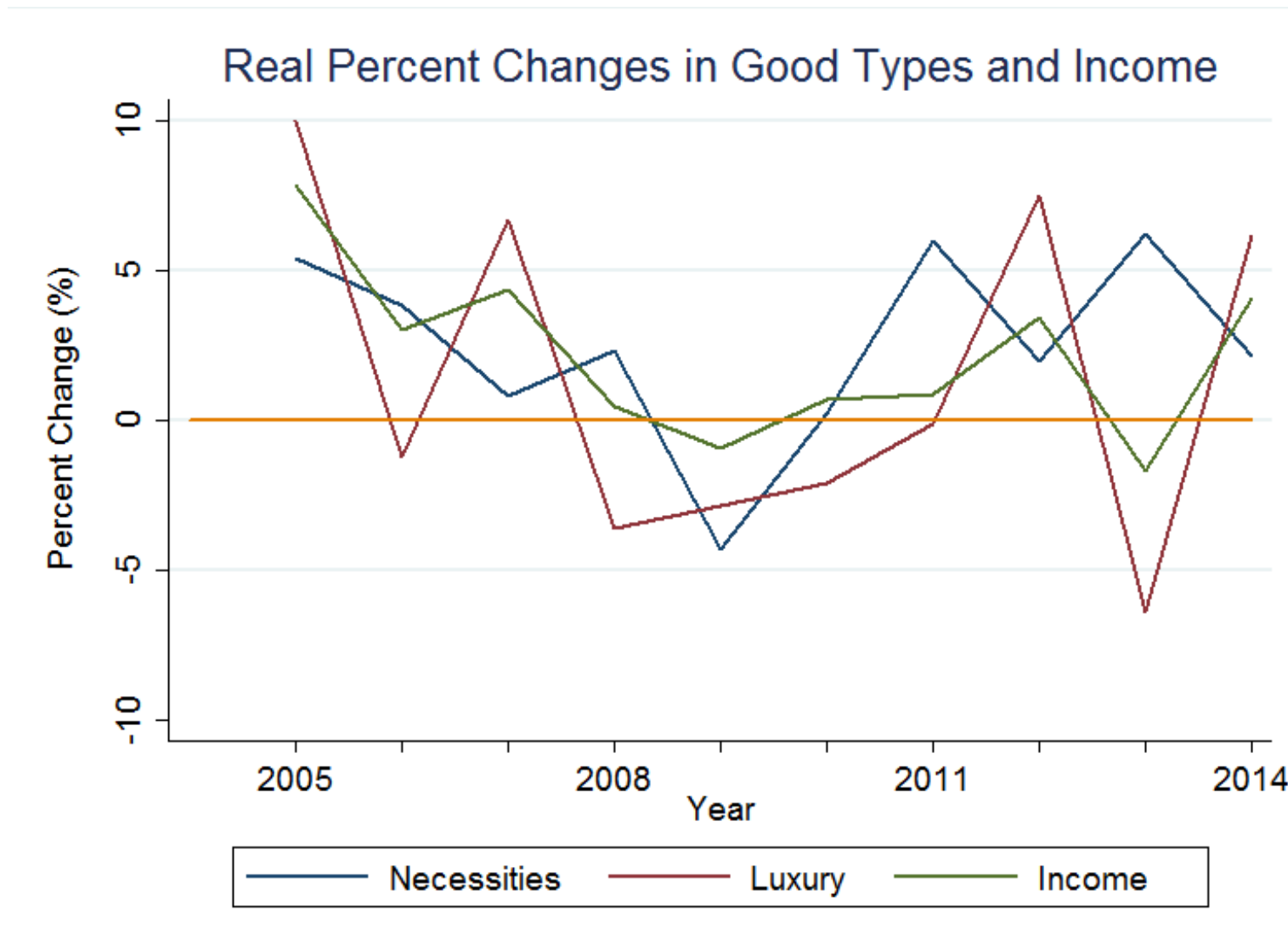


Directionality of Savings

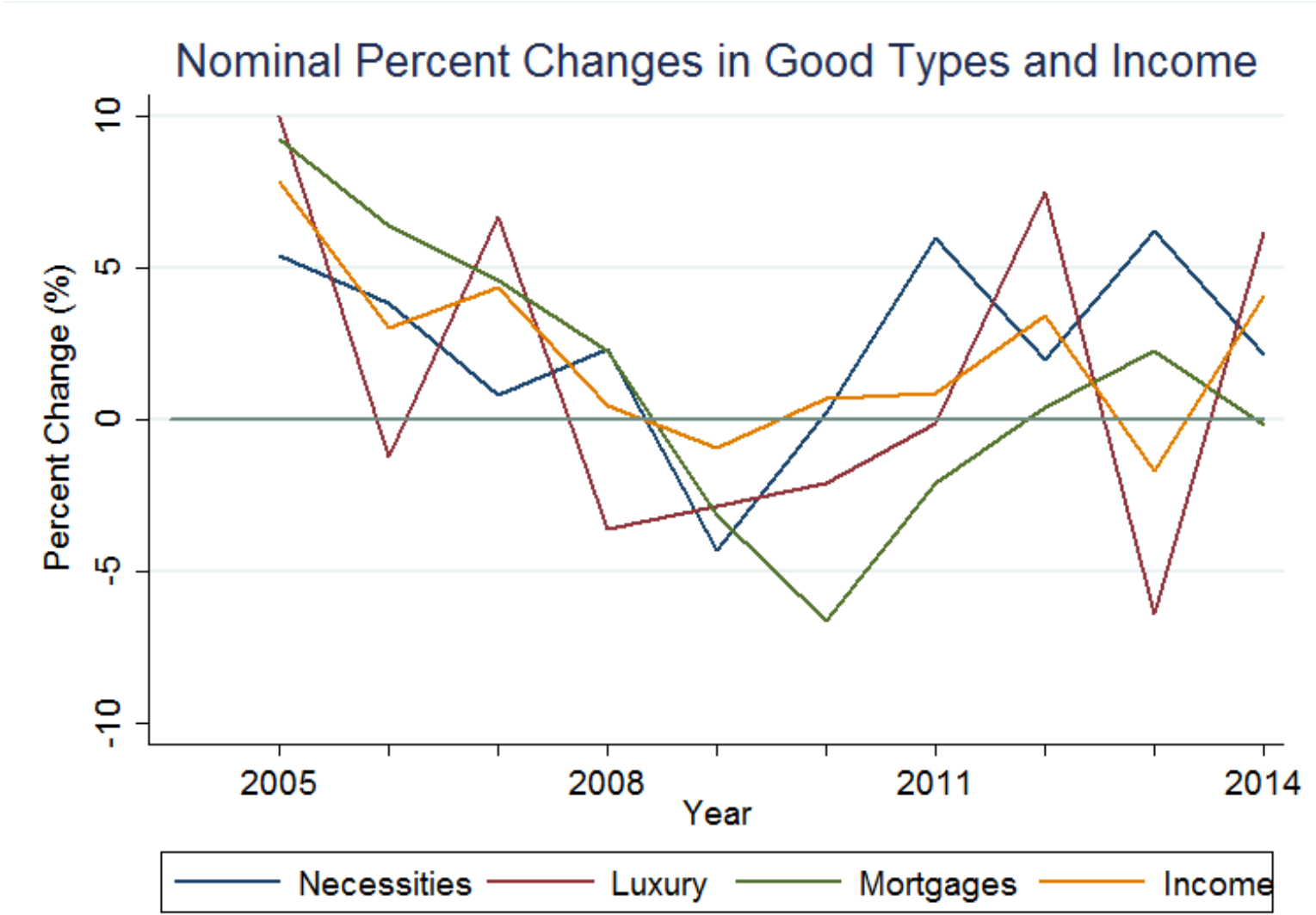
- According to the IRS, the average effective tax rate of incomes in sample is between 15-20 percent, on average and depending on the year.
- Our pool of 'non-expenditure related income' less the effective tax rate for the average income in the cohort gives some idea of how this pool is changing over time.



Elasticity Graphically



Nominal Changes



Case Year: 2008

- First year where income stagnation is observed.
- Stagnating nominal incomes (decreasing real) correlate with a immediate decline in luxury consumption.
- Spending reallocation away from luxury goods to afford necessities and mortgage payments.

Year	Luxury	Necessity	Mortgage	Income
2007	13325.57	26661.91	13640.33	92491.01
2008	12852.98	27291.41	13950.20	92902.10
$\Delta(07-08)$	(472.59)	629.50	309.87	411.09

Case Year: 2010

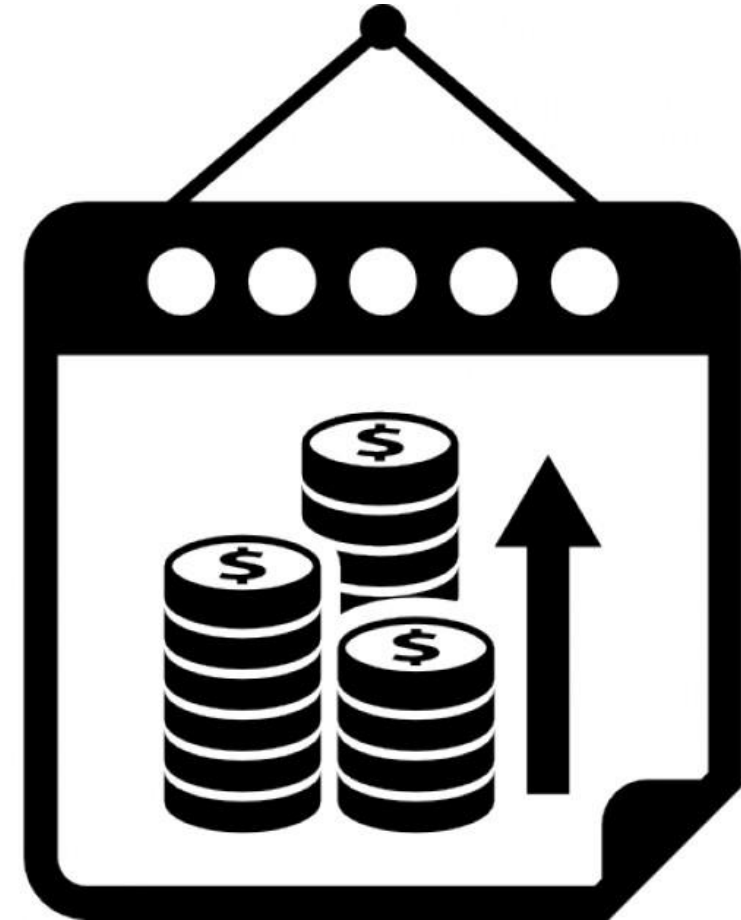
- Year when mortgage payments fell the most. This is mostly due to a collapse in housing prices. Real incomes fell in 2010.
- Dynan, Mian, and Pierce (2012) show that it takes consumers many years to recover to pre-crisis consumption patterns.
- **2010 data seem to suggest that most “new money” was being allocated to non-captured expenditures.**

Year	Luxury	Necessity	Mortgage	Income
2009	12491.88	26142.54	13514.29	92040.70
2010	12233.38	26197.14	12643.48	92682.15
$\Delta(09-10)$	(258.50)	54.60	(870.81)	641.45



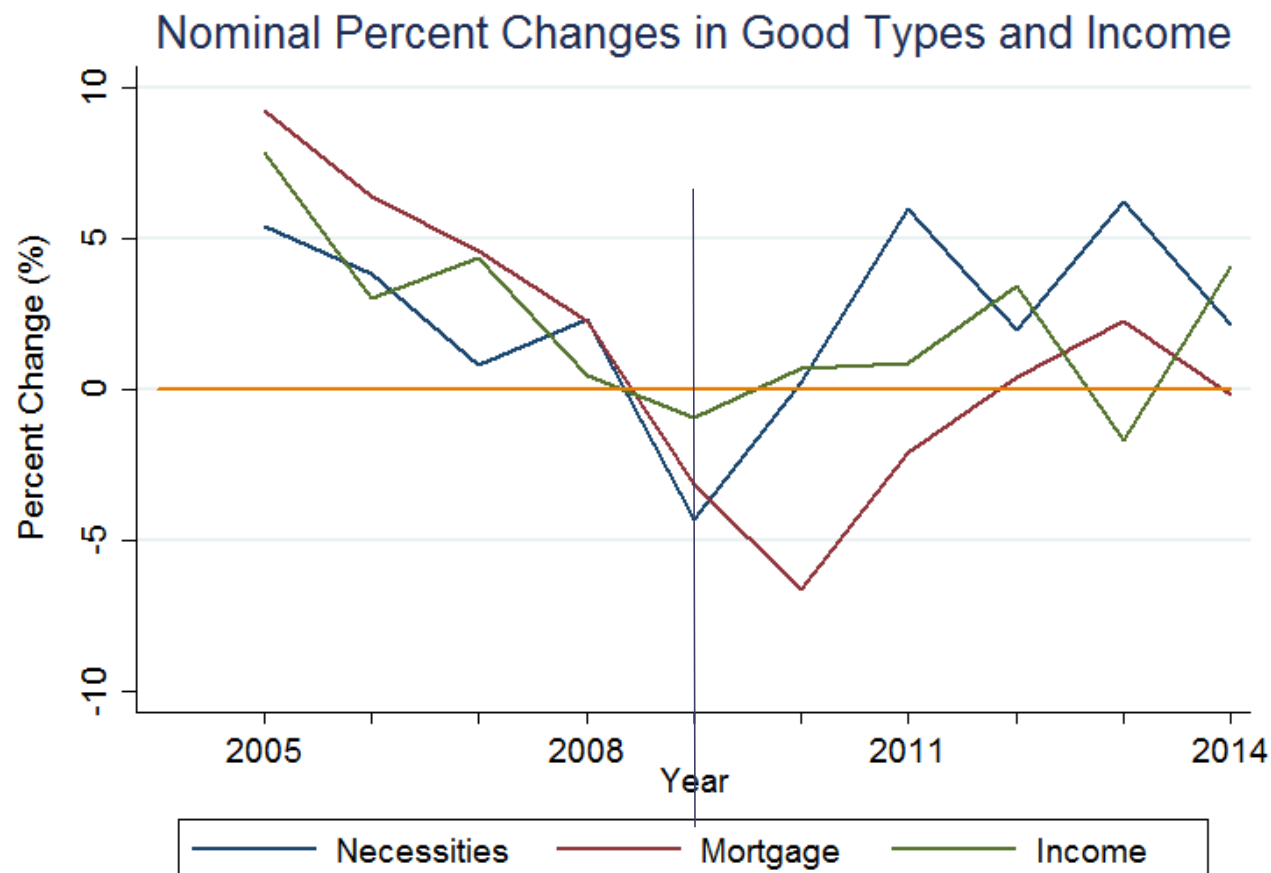
Consumer Budgets and Mortgage Payments

- Given all this information, what can we say about Mortgage Payments?
 - ▶ Intuition is king. They behave like a necessity under ‘normal’ circumstances. That is when income is rising and prices are constant.
 - ▶ Consumers value paying their mortgage more than they value consumption on luxury items.



Predictive Power of Mortgage Payments

- Can mortgage payments predict other consumption patterns?
- Regression Coefficients
- Large exogenous shocks



Questions?

