Household Finance and Real Economy Fluctuations: Empirical Findings from the Recent Financial Crisis in Europe

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OUTLINE

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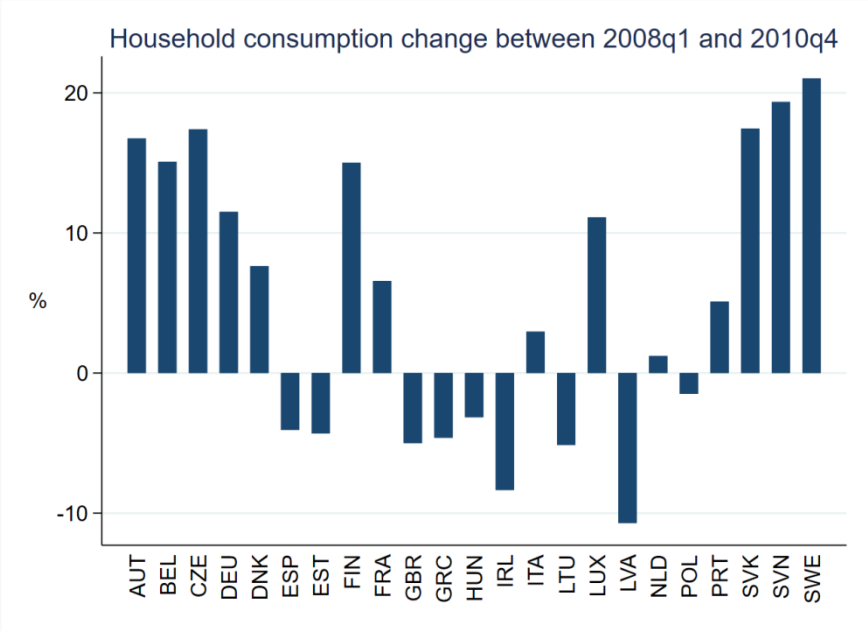
MOTIVATION

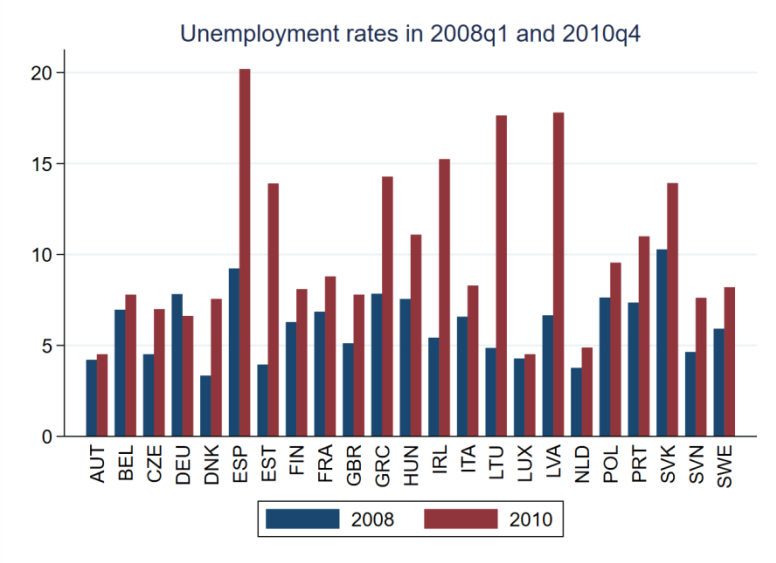
DEMAND SHIFT AFTER THE FINANCIAL CRISIS

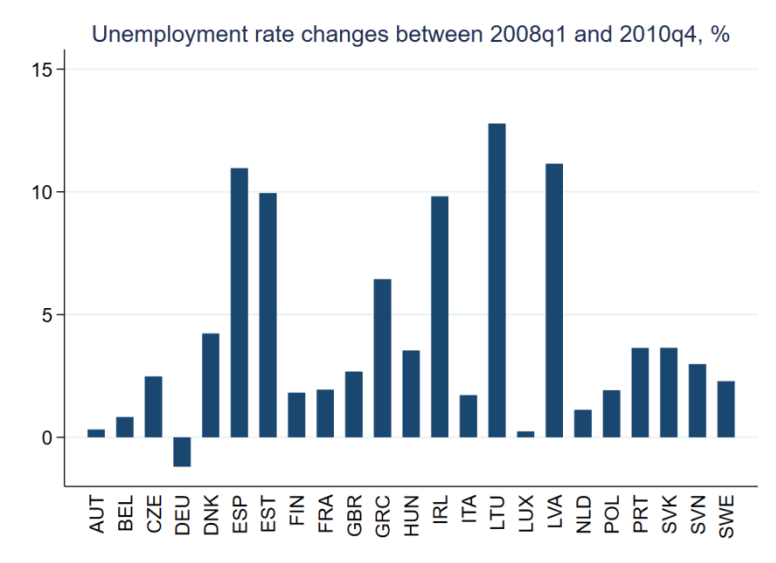
- GDP loses across most of European countries
- Variation in household consumption during the financial crisis



UNEMPLOYMENT DYNAMICS IN EUROPE

- Unemployment rates before and after the financial crisis
- Heterogeneous effects among European countries





RELATED LITERATURE

HOUSEHOLD BALANCE SHEET AND THE REAL ECONOMY

Credit effects for consumption dynamics:

- Amromin and McGranahan (2015) used micro-level credit data to identify a rapid mortgage credit expansion among low-income zip codes in U.S. between 2004 and 2014

Household balance sheet and consumption:

- Kaplan et al. (2017) built the model to identify boom-bust in house prices and its affects for corresponding expenditure swings
- Mian & Sufi (2017a) used detailed household balance sheet data to highlight increased household spending in line with rise in house prices between 2002 and 2006 and the drop in income and consumption after
- IMF WP by Caceres et al. (2019) used U.S. micro data to support idea that housing is the most relevant form of equity which affects household consumption dynamics

Household balance sheet and unemployment:

- Gertler & Gilchrist (2018) found the importance of household balance sheet channel for variation in employment during the recent financial crisis
- Mian & Sufi (2014b) built the model to identify links between housing net worth and unemployment

CONTRIBUTION

- Panel dimension based on European countries
- Detailed sectoral unemployment decomposition
- Empirical evidence on the main household balance sheet drivers in Europe
- New evidence on risk sharing and global vs local factors for the recent financial crisis in Europe
- Regional variable (urban vs rural) as additional factor in this type of analysis

THEORETICAL MOTIVATION

BASELINE MODEL

- Consider an economy made up of S equally sized counties indexed by C and each county produces two types of goods, tradable (T) and non-tradable (N).
- Each county has D_c units of total (nominal) consumer demand, uses Cobb Douglas preferences, and spend consumption shares ${P_c}^N \ {C_c}^N = \alpha \ D_c$ and ${P_c}^T \ {C_c}^T = (1-\alpha) \ D_c$ on the non-tradable and tradable good, respectively.
- Labor (e) is the only factor input and produces output according to ${Y_c}^T = \beta \ {e_c}^T$, and ${Y_c}^N = \beta \ {e_c}^N$.
- Wages are given as following: ${W_c}^N = \alpha \ {P_c}^N$, and ${W_c}^T = \beta \ P^T$.
- Free mobility of labor across sectors makes the non-tradable good price independent of its county: ${P_c}^N = \frac{\beta}{\alpha} P^T$.
- Goods market equilibrium in non-tradable and tradable sectors implies that ${Y_c}^N = {C_c}^N$ in each county and $\sum_{c=1}^{S} {Y_c}^S = \sum_{c=1}^{S} {C_c}^T$.

BASELINE MODEL

- Solving the model under the symmetry assumption that initially all counties have the same nominal demand $D_c = D_0$.

- Therefore, solving for output, unemployment and prices, we obtain the following: ${e_c}^{*N}=\alpha$, ${e_c}^{*T}=(1-\alpha)$, ${P_c}^{*N}=\frac{D_0}{\alpha}$, ${P_c}^{*T}=\frac{D_0}{\beta}$, ${W_c}^{*N} = {W_c}^{*T} = D_0$.

- Moreover, counties are hit with different household expenditure shocks that are introduced as the possibility of negative demand shock (δ_c) that differs across counties such that $D_c = 1 - \delta_c$ and the average of the demand shocks is $\bar{\delta}$.

BASELINE MODEL

- Suppose that prices and wages are fully rigid, fixed at their initial steady state level of P_c^{*N} , P_c^{*T} , W_c^{*N} and W_c^{*T} .
- Output and employment in the non-tradable sector is then governed by the new local demand for non-tradable goods at old steady state prices, giving $e_c{}^N = \alpha (1-\delta_c)$.
- Output and employment in the tradable sector, however, depends on the average demand for tradable goods across all counties, giving $e_c{}^T = (1-\alpha)(1-\bar{\delta})$.
- Let $Y_c{}^N = -\Delta e_c{}^N$ and $Y_c{}^T = -\Delta e_c{}^T$ denote total employment loss in county C in the non-tradable and tradable sectors respectively.
- Then total employment loss, $Y_c = Y_c{}^N + Y_c{}^T$, can be written as: $Y_c = \alpha\delta_c + (1-\alpha)\bar{\delta}$.

DATA

DATA DESCRIPTION

- Paper analyzes sample of European countries
- Data concentrates on the financial crisis period, covering information between 2006 and 2012
- Sectoral employment/unemployment changes are captured by using ILO and EU-Klems databases, also National accounts
- Household consumption is captured through the National accounts, as well as household surveys (EU-SILC)
- For household balance sheet identification, National accounts and household surveys (wealth and consumption surveys across countries) are used

EMPIRICAL DESIGN AND EARLY RESULTS

EMPIRICAL DESIGN

- First level of results will be based on publicly open and easy to access macro-level data
- Household balance sheet is understand in the following manner: *Net value of household portfolio = Housing based personal wealth + Financial assets – Household debt*.
- Highly detailed sectoral employment data is analyzed to identify channels, through which recent financial crisis materialized and affected real business cycles in Europe.
- Then, detailed micro-level dataset about household net wealth is introduced by merging answers from different country-by-country surveys.
- Rural vs urban dimension is introduced if country-by-country surveys give enough information on it and variable is consistent among different surveys.

EARLY RESULTS FROM MACRO-LEVEL DATA

	D_employment				D_consumption_total			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
D_house_price	0.223*** (0.021)			0.231*** (0.024)	0.381*** (0.021)			0.370*** (0.026)
D_financial_assets		0.117*** (0.031)		-0.025 (0.03)		0.237*** (0.042)		0.02 (0.032)
D_debt_to_GDP			-0.018 (0.03)	-0.084*** (0.027)			0.039 (0.046)	-0.052* (0.029)
Const.	0.003 (0.002)	-0.008*** (0.003)	-0.002 (0.002)	0.006*** (0.002)	0.012*** (0.002)	-0.006 (0.004)	0.004 (0.004)	0.012*** (0.002)
Method	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
N	123	143	150	123	129	143	150	123
R^2	0.546	0.095	0	0.586	0.711	0.218	0.02	0.724

EARLY RESULTS FROM MACRO-LEVEL DATA

	D_consumption_durables				D_consumption_non-durables			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
D_house_price	0.958*** (0.095)			0.963*** (0.11)	0.349*** (0.019)			0.337*** (0.023)
D_financial_assets		0.429*** (0.143)		-0.089 (0.136)		0.227*** (0.038)		0.029 (0.028)
D_debt_to_GDP			-0.214 (0.138)	-0.464*** (0.123)			0.053 (0.041)	-0.029 (0.026)
Const.	0.02** (0.008)	-0.021* (0.012)	0.004 (0.011)	0.033*** (0.01)	0.012*** (0.002)	-0.005 (0.003)	0.004 (0.003)	0.011*** (0.002)
Method	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
N	129	143	150	123	129	143	150	123
R^2	0.462	0.096	0.003	0.49	0.716	0.237	0.031	0.732

CONCLUSIONS AND FURTHER IDEAS

CONCLUSIONS

- Main purpose of this project is to capture effects between household finance and sectoral unemployment, which could explain macroeconomic dynamics across European countries during the financial crisis.
- Higher level sectoral unemployment decomposition and panel dimension as a key points of this analysis.
- New evidence on the main drivers of the reduction in household expenditure during the recent financial crisis.
- Evidences on economic risk-sharing across European countries.
- Introducing new dimension by analyzing rural vs urban differences on balance sheet and their possible spillovers to unemployment dynamics.

THANK YOU SLIDE!

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