Cyclical Drivers of Euro Area Consumption: What Can We Learn from Durable Goods?

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Introduction

Why single out durable goods?

- Specific characteristics: Utility over multiple periods & subject to depreciation
- Often financed with credit & may serve as collateral
- Relevant but under-explored, especially in the euro area (data only recently available)
- Bulk of research is on US data: no empirical studies on the euro area

Stylized facts

Durables are volatile & procyclical.

Annual growth rates of GDP, durables and non-durables.

Durables tend to rise more during expansions and contract more during recessions: this makes them relevant for the business cycle. Although they make up a small share of total consumption, they account for a disproportionately large fraction of its overall fluctuations (contrary to services consumption).

Durables demand

Durables supply

Aggregate demand

Aggregate supply

Monetary conditions

Total

Theoretical framework

As in Chih, Ramsey and Starr (1995) and José Luno-Pardo (2006), facing a deterministic income stream \( Y_{t} \), the consumer solves the problem:

\[
\max_{c_{t},D_{t}} \sum_{t=0}^{\infty} \frac{1}{(1 + \rho)^t} U(c_{t}, D_{t})
\]

subject to

\[
A_0 = R_{t} A_{t-1} + Y_{t} - C_{t} - P^{d} D_{t}
\]

\[
D_{t} = d_{t} + (1 - \delta) D_{t-1}
\]

\[
A_{t} + \rho P^{d} D_{t} \geq 0
\]

\[
A_{-1}, D_{-1} \text{ given; } \epsilon = 0, 1, \ldots, \infty.
\]

Assume utility function form: \( U(c_{t}, D_{t}) = \log(c_{t}) + \gamma \log(D_{t}) \).

Simulation exercise

Effects from a temporary increase of \( \gamma \) with different persistence

Empirical

Time Varying Parameters SVAR: model description

- Specification:
- With:
- \( \gamma_{t} \): matrix polynomial in the lag operator \( L \).
- \( \gamma_{t} = \gamma(L) \).
- \( \gamma_{L} \) and \( A_{t} \), time variant.
- Model estimated on quarterly data from 1996Q1 to 2018Q3

\[ X_{t} = A_{t} \cdot (L) X_{t-1} + \epsilon_{t} \] (1)

Notation:

- Durability consumption
- Price of durables
- Price of non-durables
- Interest rate on consumer credit

Identification strategy

Combination of sign and zero restrictions à la Arias et al. (2018).

Results

Take-aways from (time-varying) IRFs

- Some regularities confirmed for the euro area as for the US:
  - The reaction of durables to a monetary condition shock is larger than the one of nondurable consumption, confirming the common wisdom from the literature on US data.
  - Looking at the evolution of IRFs over time:
    - The response of nondurable prices to a durable-specific demand and supply shocks appears to be weaker in the post crisis period for both the US and the euro area.
    - Heterogeneity in spillovers from durable-specific shocks to nondurable consumptions:
      - Countries with a larger share of liquidity constrained households (Italy, Spain) show larger spillover magnitudes from durable-specific shocks to nondurable consumption (in line with theory).

Historical decomposition for total consumption

- Recovery in euro area starting in 2014 boosted by supply-side factors.
- Recessions and subsequent recoveries in Italy and Spain animated by durable-specific factors.

References


Note: Annual growth rate of GDP, durables and non-durables with shaded recessions, sample from 1997Q1 to 2018Q3.