Residential versus Financial Wealth Effects on Consumption from a Shock in Interest Rates

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Introduction

- **Classic Literature of Wealth effect**
  - Effects of a shock in wealth to consumption

- **What type of Wealth is more important?**
  - Specific shock en every wealth.
  - Barata and Pacheco (2003), Pichette and Tremblay (2003), Catte et al. (2004), Carroll (2004), Case, Quigley and Shiller (2005), Rapach y Strauss (2006) and Carroll et al. (2006)).
  - Common result: Residential Wealth is a major determinant of consumption behavior

- **Comparing Wealth Effect with a specific shock - Incomplete in two respects**
  1. Only over long term
  2. NOT common shock in both type of wealth.
This Paper

1. There is a common shock: the interest rate
3. Wealth effect: Combination of two effects (interest to wealth and wealth to consumption)
4. Wealth effect a long the time (short, medium and long term)
5. Different effects of housing price and stock of houses
6. Attention to feedback effects due to reaction of Central Bank
Methodology Used - León and Flores (2012)

**Theoretical side**
Two types of agents: private sector and central bank

\[
\begin{align*}
  z_t &= \nu_z(B) r_t + \epsilon_{zt} \\
  \pi_z(B) \epsilon_{zt} &= \alpha_{zt}
\end{align*}
\]

\[
\begin{align*}
  r_t &= \nu_r(B) z_t + \epsilon_{rt} \\
  \pi_r(B) \epsilon_{rt} &= \alpha_{rt}
\end{align*}
\]

**Empirical side**

- VAR representation \((c_t, \nabla w_t, \nabla p v_t, f_t \text{ and } r_t)\)
- no restrictions statistical properties (integration order, cointegration)
- Covariance (Correlation) residual matrix

**Identification problem**

Two assumption (1) Independence shocks and (2) Information set of agents

**Response Function**

\[
\begin{align*}
  z_t &= \Psi_r(B) \alpha_{rt} + \Psi_z(B) \alpha_{zt} \\
  \Psi_r(B) &= \begin{pmatrix} \Psi_{rc}(B), \Psi_{rw}(B), \Psi_{r p v}(B), \Psi_{rf}(B) \end{pmatrix}^t
\end{align*}
\]
Breakdown of the effects

\[ \psi_{rc}(B) = \Gamma_c(B) + \Theta_w(B) + \Theta_{pv}(B) + \Theta_f(B) + \gamma_{cw}(B) + \gamma_{cpv}(B) + \gamma_{cf}(B) \]

\[ \Gamma_c(B) = A \text{ direct effect of interest rate} \]
\[ \Theta_w(B) = \text{Housing wealth effect} \]
\[ \Theta_{pv}(B) = \text{Price of housing effect} \]
\[ \Theta_f(B) = \text{Financial wealth effect} \]
\[ \gamma_{cw}(B) = \text{Feedback effect - CB reaction - residential Wealth} \]
\[ \gamma_{cpv}(B) = \text{Feedback effect - CB reaction - housing price} \]
\[ \gamma_{cf}(B) = \text{Feedback effect - CB reaction - financial Wealth} \]
Effects of interest rate

Table: Step Response Function of $r_t$

<table>
<thead>
<tr>
<th>years</th>
<th>$c_t$</th>
<th>$\nabla w_t$</th>
<th>$\nabla pv_t$</th>
<th>$f_t$</th>
<th>$r_t$</th>
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<td>-0.04</td>
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</tr>
<tr>
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<td>-0.17</td>
<td>-0.51</td>
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<tr>
<td>20</td>
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<td>-0.14</td>
<td>-0.44</td>
<td>-11.28</td>
<td>0.84</td>
</tr>
</tbody>
</table>

- Permanent fall in $c_t$, $\nabla w_t$, $\nabla pv_t$ and $f_t$
- Short term 0.50 points vs Long term 1.88 points
Decomposition of effect over consumption

Table: Consumption Break Down (percent points)

<table>
<thead>
<tr>
<th>years</th>
<th>$\Psi_{rc}(B)$</th>
<th>$\Gamma_c(B)$</th>
<th>$\Theta_w(B)$</th>
<th>$\Theta_p(B)$</th>
<th>$\Theta_f(B)$</th>
<th>$\Upsilon_{cp}(B)$</th>
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<tbody>
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<td>-0.08</td>
<td>0.00</td>
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<tr>
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<td>-0.45</td>
<td>-0.08</td>
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<tr>
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<td>-0.25</td>
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<tr>
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<td>-0.96</td>
<td>-0.24</td>
<td>-0.76</td>
<td>0.42</td>
</tr>
<tr>
<td>20</td>
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<td>-0.45</td>
<td>-0.83</td>
<td>-0.22</td>
<td>-0.72</td>
<td>0.34</td>
</tr>
</tbody>
</table>

- **short run**: Direct effect or cost of credit
- **Two years**: The residential and financial wealth
- **Long term**: residential and financial wealth (similar)
Concluding remarks

1. Comparing Wealth effect is important to specify a common shock (interest rate)
2. Increase the importance of financial wealth (Similar to residential wealth)
3. The effects of the variables are different depending on the period considered
4. Short run: the cost of credit
5. Long Run: the effect of both types of wealth
6. The Effect of housing price less than residential wealth
7. Monetary Policy: effects over long term