

## CREDIT DEMAND AT THE HOUSEHOLD LEVEL: RCC MEETS ENAHO

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**These views are the author’ ones and do not represent those of Banco de España or the Eurosystem**



- Estimates the **elasticity of demand** of Peruvian households for different segments of credit (2008-2014) based on a Heckman model:
  - **Total credit (-0.29)**
  - **Consumer credit (-0.4)**
  - **Micro-firms (-0.1)**
  - **Mortgages (~0).**
- Elasticity also varies by **(i) currency, (ii) region, (iii) type of employment.**
- This elasticity is lower than the one obtained in previous literature.
- This low elasticity could be due to (i) low competence (ii) high economic growth, (iii) enhancement of financial inclusion.



- **Relevant research question**
- **Good dataset**
  - **Credit register (RCC) + household survey (ENAH0): 95,037 households with info in both dataset (more than 500,000 individuals from ENAH0).**
- **Potential for important contribution**
- **Methodology and identification could be improved to enhance the results and their interpretation**



- It is not obvious what the **non-participation** in credit markets collects.

Households with no credit at that time but because:

(i) they do not apply

(ii) they applied but the application was rejected.

- In Jiménez et al (2014) the first stage refers to whether the credit is granted or not and they rely on **credit applications**.

- What about considering participation separately for different **segments of credit?**



- Observed interest rates may correlate with individual-specific investment opportunities or financing alternatives.
- Potential **endogeneity** concerns when regressing loan balance on interest rates.
  - Solution (see for instance Alessie et al, 2005)
    - Changes in usury laws as an instrument
  - Potential changes in regulation to deal with this?



- Attanasio, Goldberg, and Kyriazidou (2004) show that the elasticity of demand for credit with respect to **loan maturity** is an important parameter as well.
- Households that are credit constrained value more mortgages with higher **loan-to-value** ratios.
  - Different sensitivity in terms of LTV (especially for mortgages)
  - Different sensitivity in terms of households credit constraints?
    - Wealth constraint (downpayment)
    - Income (monthly payments over total income).

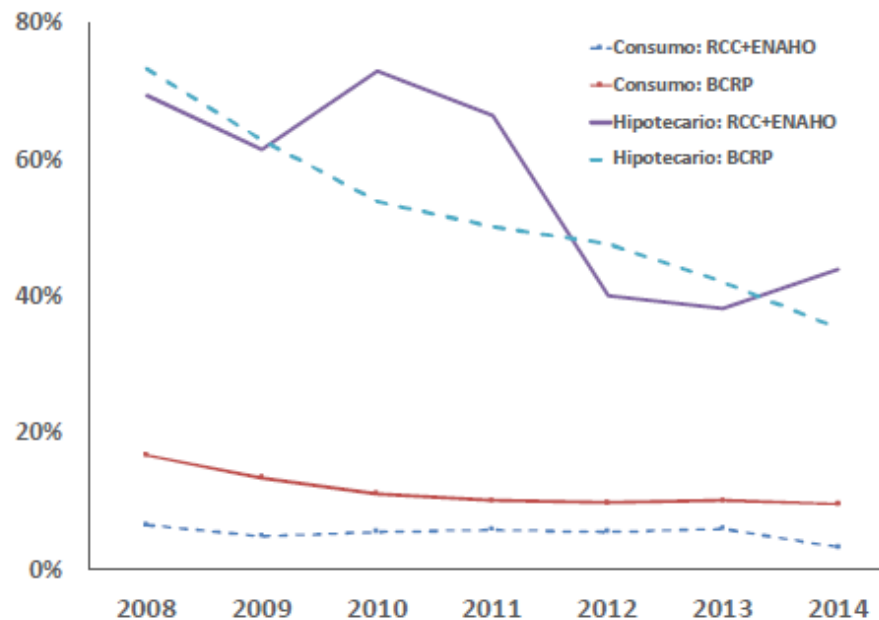


- Dealing with supply of credit:
  - **Bank-time-currency FE.**
    - 26 dummy variables for banks: 25 for the largest and the rest are included in the remaining one.
    - Why not using one for each bank?
    - How many banks are there in the sample?
  - What about **bank-time-currency-product type FE**?

## DATA (I). SAMPLE REPRESENTATIVENESS

- Are the households **representative of the population**:
  - The authors compare their sample of households with the population based on the share of credit in dollars.

Gráfico 2: Dolarización de créditos según datos de BCRP y de RCC-ENAH



- Income, wealth, ... of the households used in the analysis vs the population?





- The authors explain the results in terms of: (i) low competence (ii) high economic growth, (iii) enhancement of financial inclusion.
- What about using regional heterogeneity to check these statements.
- **Growth**: regional differences in growth or natural disasters affecting growth:
  - Carhuaz flood (April 2010) or Loreto flood (January 2012)
  - Earthquakes (2011, 2013)
  - El niño (2016-2017)
- **Concentration and financial inclusion**: Banking structure in specific areas.
- However, what explains the differences in the different segments of credit?

# RESULTS (II). SEGMENTS OF CREDIT

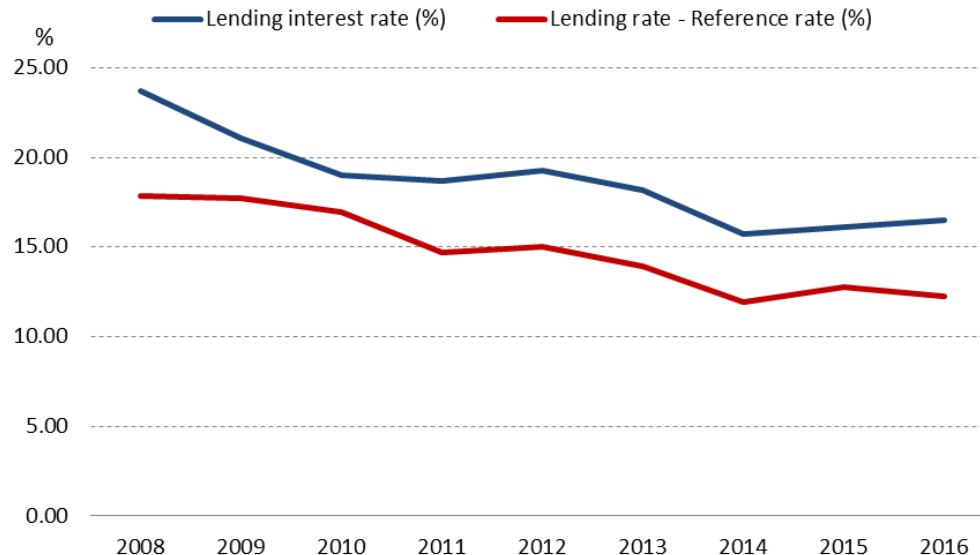


- It could be more informative to present the analyses for the **three segments of credit and the two currencies separately** (both for the first and second stage)...
- ... or given that housing credit is much less relevant, focus just on consumer and credit to micro firms separately.

	Micro Firms	Mortgages	Consumer credit
Local currency			
Foreign currency			

## RESULTS (III). INTEREST RATES

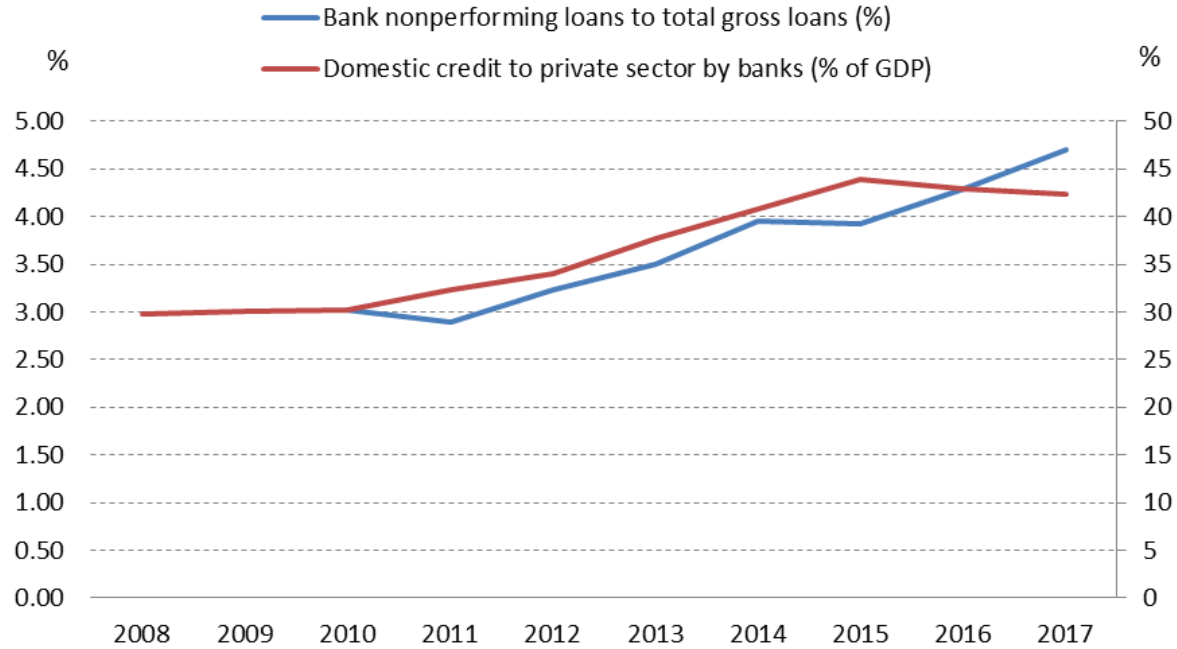
- The **interest rate** is not directly observed. The author infers it from the monthly interest income of each loan.
- The relevant interest rate to estimate elasticity should be that at origination but some interest rates are imputed after origination. Are they floating/fixed rates?
- “Banks keep interest high because lower rates would not increase demand significantly”.



Source: World Bank

## RESULTS (IV). INTEREST RATES (CONT'D)

- Could the lower **payment of interests** be due to loans in arrears?



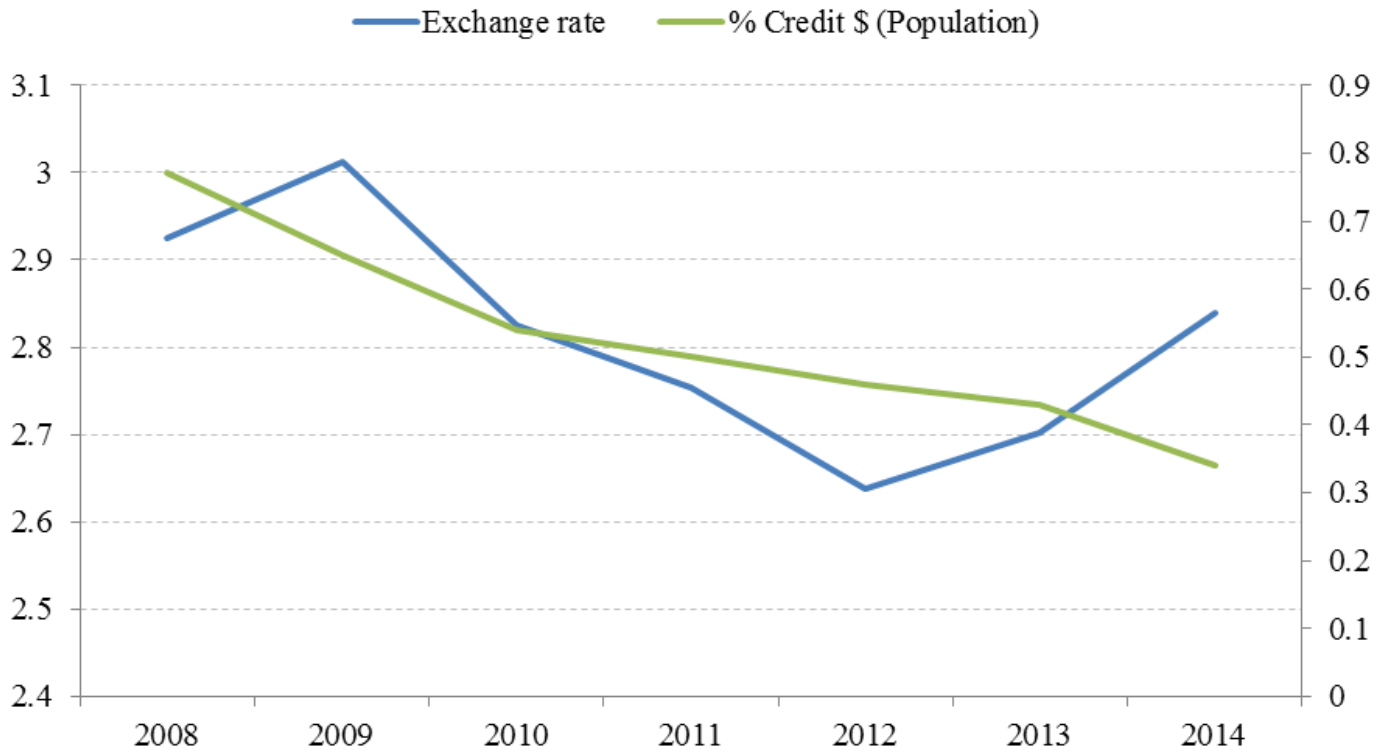
Source: World Bank

- What about focusing on **new loans**?
- However, when using new loans elasticity is even lower (section 5.4)...

# RESULTS (VI). HOUSEHOLDS AS CARRY TRADERS



- Are Peruvian households **carry traders**?





- Use interest rates to obtain a synthetic spread between interest rates in local and foreign currencies and study **carry trades** based on this spread.
  - See Liao (2018) for the case of corporate interest rates.
  - The results on different segments of credit and type of households could:
    - Help to understand the type of households more sensitive to this interest rates differential.
    - Infer policy implications about household default risk on foreign currency loans.



- First stage of Heckman analysis:
  - Category of reference when dummy variables are used?
- Second stage:
  - If the interaction of FE is used, then why are the FE also reported individually in the corresponding table?
- Column 2 Table 4 (OLS) is equal to column 4 (second stage Heckman).  
Selection bias is not so relevant or not properly captured in the first stage.
- Use households **shocks** (labour, demographics and natural disasters).
- Clarify with happens with loans in traded in the secondary market.
- Clustering of standard errors?



THANK YOU FOR YOUR ATTENTION

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