

# Results of the EFH survey



EFH Team



BANCO CENTRAL  
DE CHILE



## Overview: EFH (2007–09)

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- A cross-sectional and panel view of Chilean household finance:
  - (2007) 4021 households (national level).
  - (2008–09) 1207 households (Santiago – represents 39% of population and 45% of GDP in Chile). Panel of 76% of 2008 sample.
- Chile's debt levels are similar to those in other emerging economies (IMF, 2006).





# Main findings

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- **Assets:**
  - Large proportion of investments in real assets.
  - High saving rates. Precautionary motive?
- **Debts:**
  - Richer households are more indebted.
  - Strong evidence of financial constraints.
  - Retail stores play a large role in credit.





# Comparison with previous research

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- Importance of real assets and positive debt/income relationship (USA and UK: Bover, Martínez-Carrascal, and Velilla, 2005).
- Income (Milanovic, 2002; Sala-i-Martin, 2006).  
Wealth (Davies, Sandstrom, Shorrocks and Wolff, 2007).
- Financial structure and growth (Townsend and Ueda, 2006; King and Levine, 1993a, b; Levine 1997; Allen and Gale, 2000).





# Income and wealth distribution

<b>Income level</b>	<b>Annual Income*</b>	<b>Net Wealth*</b>
<b>All (3.848.270)</b>	10.6	19.1
<b>Income strata</b>		
p1-51	6.0	10.0
p51-81	14.9	22.0
p81-101	35.6	57.8

\* Median statistics. Values in thousands of USD (500 pesos = 1USD).





# International comparison

<b>Countries</b>	<b>Gini**</b>	<b>P1-20/ Median*</b>	<b>P91-100/ Median*</b>
		<b>Income</b>	
<b>Chile</b>	50.3%	45.3%	499.1%
<b>Spain</b>	30.5%	34.6%	320.2%
<b>Italy</b>	29.2%	41.3%	278.4%
<b>USA</b>	32.8%	25.3%	425.3%
<b>UK</b>	30.6%	32.6%	308.4%
		<b>Wealth</b>	
<b>Chile</b>	36.1%	40.8%	1068.1%
<b>Spain</b>	27.5%	54.9%	254.0%
<b>Italy</b>	32.8%	12.4%	378.9%
<b>USA</b>	40.3%	3.1%	1588.7%
<b>UK</b>	31.7%	7.8%	284.8%

\* Median of income percentiles

\*\* Based on the first 4 quintiles and two top deciles

(International data: Bover, Martínez-Carrascal, and Velilla, 2005)





# Income and wealth by age and education

- Young households have high earnings, but lower savings. Education premium is high.

<b>Age of Head</b>	<b>% of Households</b>	<b>Annual Income*</b>	<b>Net Wealth*</b>
Below 35	16.5	10.8	1.2
35 to 44	21.9	10.7	14.3
45 to 54	25.4	11.8	19.0
55 to 64	17.0	11.3	28.0
65 to 74	11.9	8.4	30.8
Above 75	7.3	7.9	30.4
<b>Education of Head</b>			
Primary	27.2	7.0	18.1
Secondary	37.8	9.9	15.5
College	17.4	15.7	20.0
Post-graduate	11.2	33.1	50.0

\*Medians. Values in thousands of USD (500 pesos = 1USD).





# Savings and precautionary motives

- Less developed financial markets (Besley, 2005; Guiso, Jappelli and Terlizzese, 1992).
- Upper income strata (Carroll and Samwick, 1998).

	<b>Median</b>
<b>All (3.848.270)</b>	33.2%
<b>Income strata</b>	
p1-50	18.5%
p51-80	40.8%
p81-100	52.5%





# International comparison

- Young households have low wealth reserves.

Age of Head	Chile	Spain	Italy	USA	UK
Below 35	1.1	50.8	71.0	1.6	2.5
35 to 44	13.6	82.6	78.6	43.8	39.9
45 to 54	18.2	118.7	114.8	83.3	79.8
55 to 64	26.8	114.9	121.5	113.3	105.9
65 to 74	29.5	96.0	82.5	111.5	95.0
Above 75	29.1	72.2	56.1	103.9	58.7

\* Spain, Italy USA and UK in thousands of 2002 USD, Chile in thousands of 2007 USD  
(International data: Bover, Martínez-Carrascal, and Velilla, 2005)





# Asset composition and financial development

- Large investments in real assets (Levine, 1997; Allen and Franklin, 1994, 2000; Allen, Carletti, Cull, Qian and Senbet, 2010).

<b>Countries</b>	<b>Real Assets as a % of Total Assets</b>		
	<b>Mean</b>	<b>Income P1-40</b>	<b>Top income quintile</b>
<b>Chile</b>	95.2%	95.3%	94.8%
<b>Spain</b>	87.4%	91.4%	83.9%
<b>Italy</b>	85.3%	90.1%	82.3%
<b>USA</b>	55.7%	67.4%	54.8%
<b>UK</b>	70.3%	64.4%	67.7%

(International data: Bover, Martínez-Carrascal, and Velilla, 2005)





# Credit to entrepreneurs

- Probit (conditional on income and education) of the wealth effects on entrepreneurship (Paulson and Townsend, 2004).

"Entrepreneurship measure"	All		Income P81-100	
	Coef	Test t	Coef	Test t
Head of its own company	0.00146	22.38	0.00109	22.18
Self-employed only	0.00101	15.13	0.00057	15.57
Total self-employed	0.00195	22.29	0.00133	34.31





## EFH characterizes household debt

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- The survey provides a unique source of information in which incomes, debts, assets, and expenditures are collected.
- Indebtedness is relevant for Financial Stability. A standard indicator used for this purpose is the Debt to Income Ratio (DIR).
- Debt could be divided into secured or unsecured. In the EFH we could explore the composition and distribution of those kind of debts.

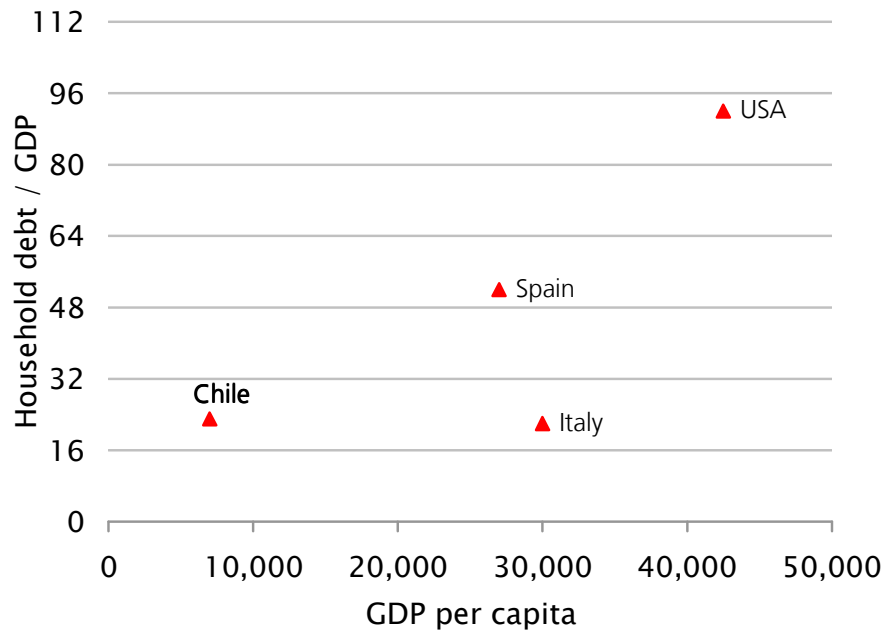




# Debt to Income Ratio (DIR) agrees with aggregate figures

**Graph 1**

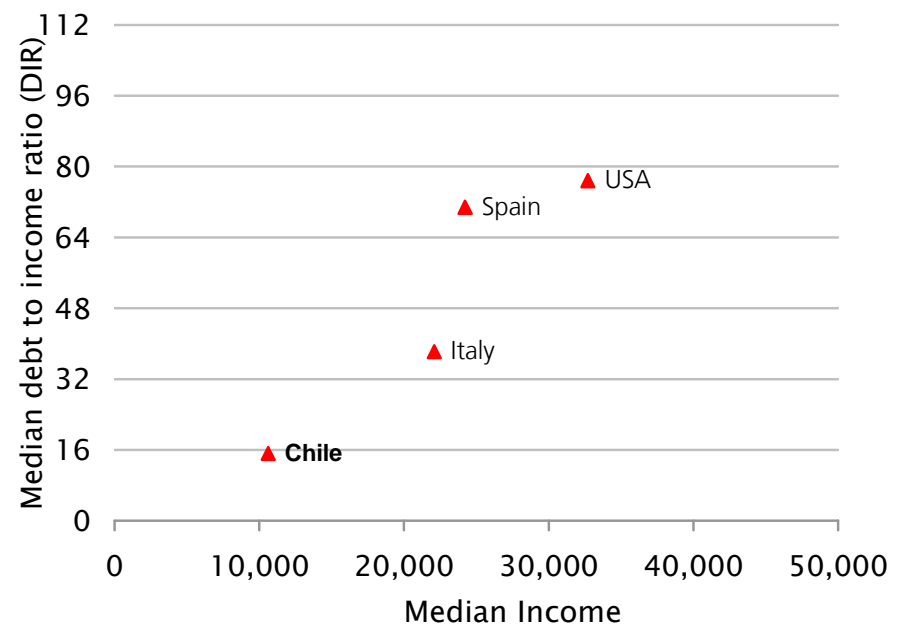
Household debt versus GDP  
(percentage of GDP, dollars)



Source: IMF, Global Financial Stability Report 2006.

**Graph 2**

Household debt versus income  
(median DIR, dollars)



Source: Bover, Martínez-Carrascal and Velilla (2005) and EFH 2007

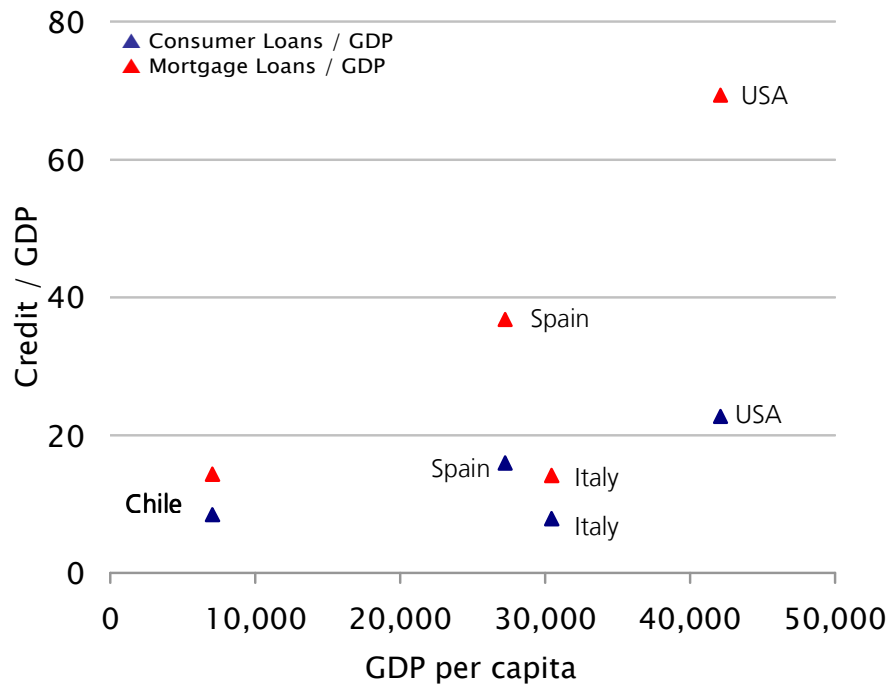




# ... this fact remains among type of credits (consumer and mortgage)

### Graph 3

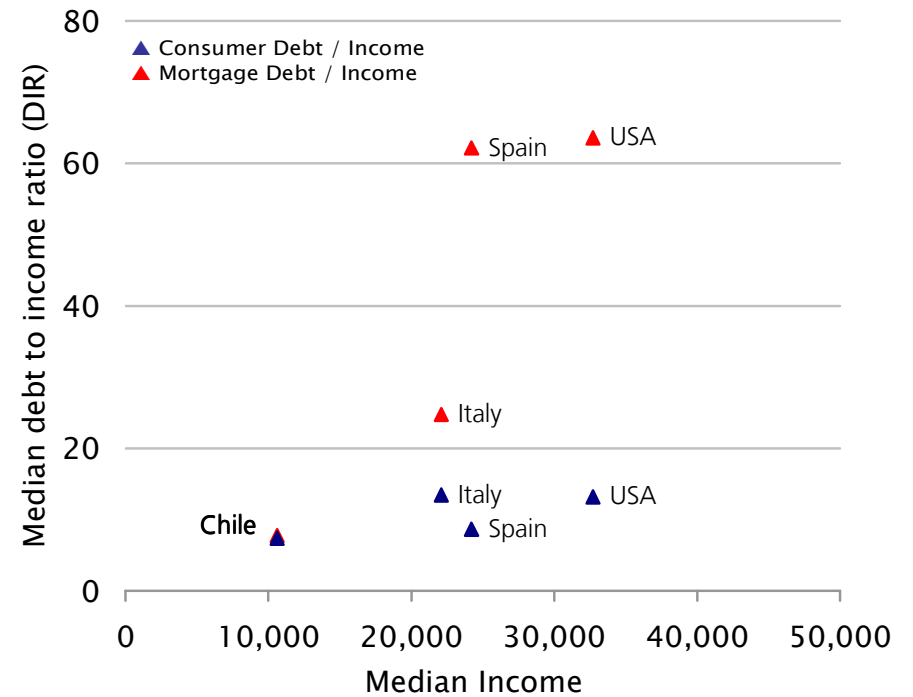
Mortgage and consumer loans versus GDP  
(percentage of GDP, dollars)



Source: IMF, Global Financial Stability Report 2006.

### Graph 4

Debt over income versus income  
(median DIR, dollars)



Source: Bover, Martínez-Carrascal and Velilla (2005) and EFH 2007

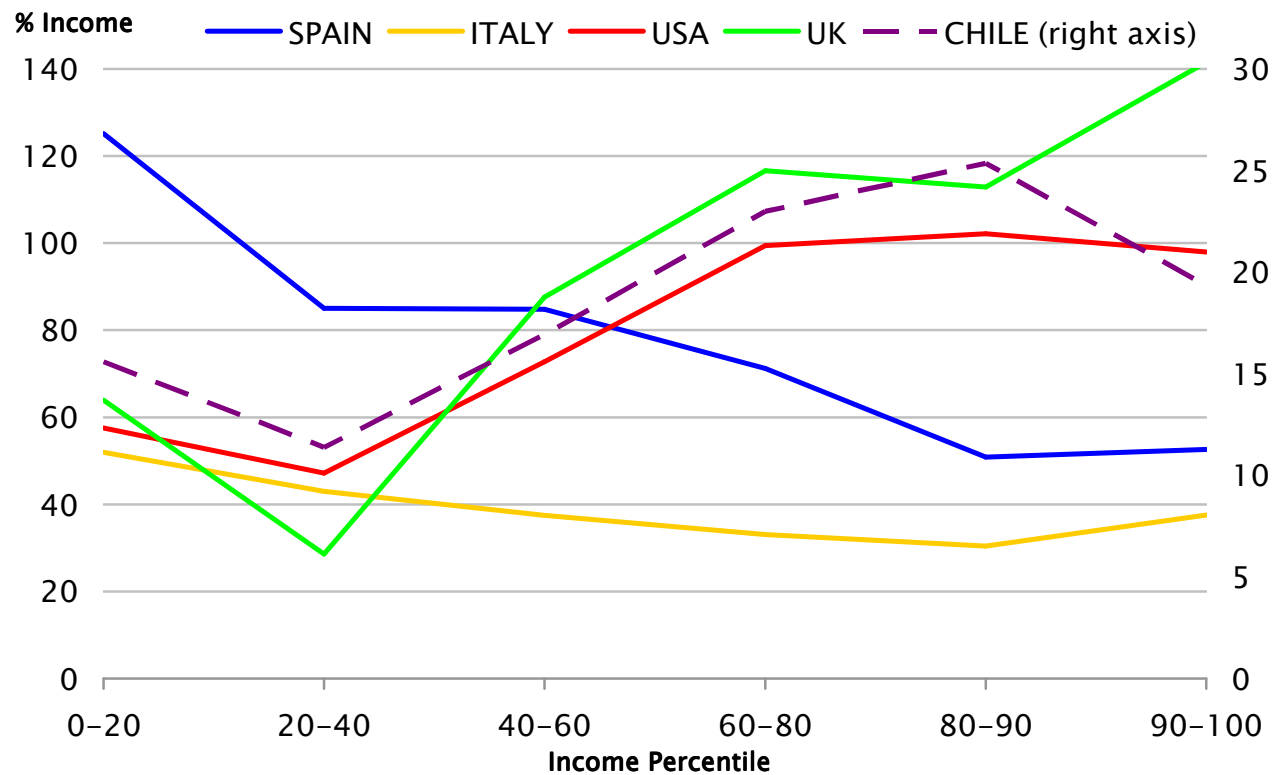




# Distribution of Chilean DIR is similar to USA's or UK's but at a lower level

**Graph 5**

Household debt to income ratio  
(percentage of income, median)



Source: Bover, Martínez-Carrascal and Velilla (2005) and EFH 2007





## ... an explanation for low DIR could be small mortgage debt

Household characteristics	Mortgage Debt (% of total debt)				Consumer Debt (% of total debt)			
	Spain	USA	Italy	Chile	Spain	USA	Italy	Chile
<b>All household with debt</b>	87.8	82.2	64.8	51.3	12.2	17.8	35.2	48.7
<b>Income Percentile</b>								
Less than 40	85.3	65.9	69.2	34.4	14.7	34.1	30.8	66.1
Between 40 and 60	85.1	75.5	69.8	44.2	14.9	24.5	30.2	55.7
Between 60 and 80	88.6	81.5	65.6	54.2	11.4	18.5	34.4	45.0
Between 80 and 90	87.7	83.7	69.0	59.3	12.3	16.3	31.0	40.2
Between 90 and 100	90.3	89.3	55.7	69.7	9.7	10.7	44.3	28.9

- Mortgage is over 2/3 of the total debt in developed countries.
  - Bubble in real-estate property prices?
- Chilean mortgage debt is increasing in income
  - Credit constraints?
- In Chilean low-income households, consumer debt accounts for over 50% of the total debt.





# Chile: limited access to banking credit for low-income households

Households with Debt (%) Income Percentile	Consumer Debt				Mortgage Debt	Total Debt
	Bank only	Retail store only	Both	Total		
Less than 40	15.6	49.7	11.2	61.0	11.5	63.7
Between 40 and 60	29.3	53.2	20.9	67.9	20.7	73.0
Between 60 and 80	39.7	51.1	27.4	68.4	28.9	74.4
Between 80 and 90	54.2	43.3	29.6	70.9	43.3	80.7
Between 90 and 100	49.0	35.8	29.6	58.6	47.3	70.9

- Access to credit is uniform between income percentile, however composition and sources are different.
- Low-income households have small access to banking credit: consumer and mortgage loans.
- Non-banking credit is important for these households.
  - Usually that credit is revolving => variable interest rate.





## EFH would help to answer indebtedness, default, and credit access

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- EFH has been used for studying several issues related to debt household's behavior.
- Fuenzalida and Ruiz-Tagle (2009) "Households's Financial Vulnerability"
- Ruiz-Tagle and Vella (2010) "Borrowing Constraints and Credit Demand".
- Alfaro, Gallardo and Stein (2010) "The Determinants of Household Debt Default"
- Chovar, Elgueta and Salgado (2010) "How much do credit card and mortgages explain in over-indebtedness of households in Chile?"

