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Hand-to-Mouth in Emerging Countries?

By: Francisco Mendoza Yuseff

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Thesis Advisor: Iván Araya Gómez, PhD.

To my parents, Alex and Zarina, with love. In loving memory of my grandparents.

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I will always carry you in my heart.

Abstract

Understanding household consumption dynamics is crucial for designing effective economic policies in emerging markets, yet limited evidence exists on the role of heterogeneous household behaviour. This study applies the Wealthy Hand-to-Mouth model by Kaplan and Violante (2014) to estimate the marginal propensity to consume (MPC) in Chile, using the Blundell et al. (2008) model adapted by Hong (2023). Drawing on data from the Chilean Social Protection Survey (2004-2020), the analysis reveals that 94% of Chilean households are classified as Hand-to-Mouth (HtM), a rate three times higher than in developed economies. Consequently, the MPC for HtM households is between two and four times greater compared to models that do not account for household heterogeneity. Among the lowest three income quintiles, the MPC of Poor HtM households exceeds to 100%, indicating that these households consume more than their additional income, driven largely by high levels of indebtedness. These findings bridge a critical gap in the literature on emerging markets and underscore the importance of incorporating household heterogeneity into policy design and economic modelling, with potential implications for debt relief programs and social policy interventions.

Keywords – Hand-to-Mouth, Heterogeneity, MPC, Emerging Markets

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Chapter 1

Introduction

Understanding and measuring the consumption response to changes in income is crucial for policy design (Jappelli and Pistaferri, 2010; Bunn et al., 2018; Agarwal and Qian, 2014), fiscal multiplier estimation (Jappelli and Pistaferri, 2014; Christelis et al., 2019), and related analyses (Paiella and Pistaferri, 2017; Kaplan and Violante, 2022; Guo et al., 2023). One of the most widely accepted theories in this field is the Permanent Income Hypothesis (PIH) proposed by Friedman (1957). According to the PIH, households' responses to income changes depend on the nature of the shock: for transitory shocks, households typically do not adjust their consumption, meaning that increases or decreases in income do not translate into proportional changes in consumption. In other words, the marginal propensity to consume (MPC) is close to zero.

Although the PIH has faced criticism due to factors such as precautionary saving motives (Carroll, 1997, 2009), liquidity constraints (Deaton, 1991; Zeldes, 1989), and other considerations, it remains widely used today, albeit with some adjustments to its formulation. One key reason for these adjustments is that during economic crises, the model often fails to explain observed effects and transmission mechanisms, exposing significant limitations in its assumptions. A major factor behind this failure is the reliance on the representative agent assumption, which overlooks the heterogeneous behavior of households (Kaplan and Violante, 2018). For instance, differences in household wealth composition significantly affect their responses to shocks, such as those originating from the real estate market. By incorporating household heterogeneity, models can better

capture varying sensitivities to interest rates, income changes, risk aversion, and other factors (Carroll et al., 2017).

In the literature on heterogeneity, Kaplan and Violante (2014) introduce a new perspective in which wealth is divided into two main types of assets: liquid and illiquid. According to their framework, households' responses to income changes depend on their wealth composition. Specifically, Kaplan and Violante categorize households into two main groups based on their liquid wealth: Hand-to-Mouth (HtM) households, which lack liquid wealth and whose consumption depends on current income, and Non-Hand-to-Mouth (No-HtM) households, which possess liquid wealth.

HtM households are further divided into two subcategories based on their wealth composition. The first group, Wealthy Hand-to-Mouth (WHtM), includes households that lack liquid wealth but possess illiquid assets. These households can pay transaction costs to liquidate their illiquid assets, enabling them to smooth their consumption path to some extent. The second group, Poor Hand-to-Mouth (PHtM), consists of households with neither liquid nor illiquid wealth, leaving them unable to smooth consumption due to the absence of any assets. PHtM households are expected to have higher MPCs, as their consumption depends entirely on current income. Although WHtM households possess illiquid assets, their behaviour often resembles that of PHtM households, particularly in response to economic shocks, rather than aligning with the lower MPCs typically observed in No-HtM households.

The behaviour of HtM households has been extensively studied in developed countries, where approximately 30% of the population falls into this category, exhibiting significantly higher MPCs than models without this distinction would predict (see Table 4.1.1 for the proportion of HtM households by country). However, this phenomenon has not been thoroughly explored in emerging markets, where liquidity constraints are more prevalent due to structural factors such as inequality, labour market rigidities, and poverty. A key obstacle to this research has been the lack of longitudinal data necessary to analyse HtM behaviour.

Chile represents a notable exception, as its Social Protection Survey (EPS) provides a unique opportunity to study this phenomenon. My findings indicate that approximately 90% of the Chilean population can be classified as Hand-to-Mouth

(HtM), a proportion nearly three times higher than that observed in developed countries (see Table 4.1.1). This high prevalence significantly impacts the country's marginal propensity to consume (MPC), especially when households are analysed by per capita income quintiles. In the lowest quintiles of per capita income, the MPC reaches up to 100%, underscoring the complete dependence of these households on current income for consumption, driven by their lack of both liquid and illiquid wealth.

This study aims to contribute to the literature by addressing the existing gap in the analysis of MPCs in emerging economies. To achieve this, I use the EPS data[1] from 2004 to 2020 for Chile to estimate the MPC in response to unexpected transitory income changes. The estimation follows the empirical methodology of Blundell et al. (2008) as adapted by Hong (2023).

[1]This research utilized data from the *Encuesta de Protección Social*. The author thanks the *Subsecretaría de Previsión Social*, the intellectual owner of the survey, for granting permission to use the anonymized database. All results of the study are the sole responsibility of the author and do not, in any way, represent or bind the *Subsecretaría*.

Chapter 2

Theoretical Framework

2.1 Marginal Propensity to Consume

The relationship between changes in consumption and income is a key parameter for policy design, particularly in economies with significant household heterogeneity and liquidity constraints. Understanding these dynamics is crucial for responding to economic crises and crafting effective fiscal policies, particularly in economies with pronounced heterogeneity and liquidity constraints. Various methods exist to estimate this relationship, but the starting point is defining consumer behavior. One of the most widely accepted frameworks is the Permanent Income Hypothesis (PIH) (Friedman, 1957)[1].

In its initial version, the PIH assumes a representative consumer who maximizes utility by smoothing consumption based on their permanent income over their lifetime. According to this theory, consumers respond strongly to changes in permanent income but minimally to transitory changes. This implies that the marginal propensity to consume (MPC) depends on the nature of the income shock: high for permanent shocks and low for transitory ones. In its simplest form, the theory suggests that consumption follows a random walk.

Although the PIH offers a valuable foundation, its basic version struggles to align with empirical data, especially during economic downturns or financial instability, highlighting the need for refinements to better reflect real-world

[1]The LCH proposed by Ando and Modigliani (1963) is also widely accepted, but Friedman's PIH serves as the foundation for most analyses.

complexities. This misalignment is especially pronounced in economies with high levels of inequality and structural barriers to credit access. As a result, the theory has been reformulated to address various real-world situations. Modifications include the Partial Adjustment Model (Attfield et al., 1992), which introduces gradual consumption adjustments; models incorporating asymmetric information (Pistaferri, 2001); liquidity constraints (Runkle, 1991); Rational Expectations (Hayashi, 1982), precautionary savings (Carroll, 1997), and buffer-stock saving models (Deaton, 1986). However, one of the most significant modifications involves relaxing the representative agent assumption, allowing for heterogeneous household behavior. This heterogeneity improves the performance of the PIH and better reflects consumption patterns in economies with diverse household structures and financial vulnerabilities. (Kaplan and Violante, 2022)

Building on this shift, recent models emphasize the role of wealth composition in shaping consumption responses. This perspective is particularly relevant for emerging markets, where wealth distribution is more uneven, and access to credit is often limited. In this context, various authors have developed frameworks to capture the effect of liquidity constraints and wealth heterogeneity. One of the most notable contributions is the distinction between liquid and illiquid wealth and the introduction of the Wealthy Hand-to-Mouth (WHtM) behavior, as formulated by Kaplan and Violante (2014). Their model categorizes households based on their wealth composition, offering a more granular understanding of how different asset holdings influence consumption responses to income shocks.

Kaplan and Violante's model highlights that wealth, in itself, is not a uniform indicator of financial resilience; the composition of wealth plays a pivotal role in shaping consumption patterns. Instead, it distinguishes between liquid and illiquid assets, demonstrating that even households with substantial illiquid wealth may exhibit consumption patterns similar to those with no wealth at all. This distinction is crucial for understanding heterogeneity in the marginal propensity to consume (MPC) across income and wealth distributions. By categorizing households into Non-Hand-to-Mouth (No-HtM), Poor Hand-to-Mouth (PHtM), and Wealthy Hand-to-Mouth (WHtM) groups, their model offers a nuanced view of how wealth composition, rather than total wealth, shapes consumption responses to income shocks.

This theoretical distinction is particularly relevant for emerging markets, where

a higher proportion of households lack liquid assets and are more vulnerable to transitory income fluctuations. Applying this model to economies with pronounced inequality and structural barriers to credit can enhance our understanding of consumption dynamics and provide more accurate estimates of fiscal multipliers. By extending this framework to analyse household data from emerging economies, we can bridge critical gaps in the literature and provide new insights into the relationship between wealth composition and consumption responses.

2.2 *Wealthy Hand-to-Mouth* "KV" Model

The next section formalizes the Kaplan and Violante (2014) model, which provides a structured framework for understanding the decision-making processes of households with varying access to liquid and illiquid assets. This theoretical framework highlights key differences between Non-HtM, PHtM, and WHtM households, shedding light on their consumption patterns in response to income shocks.

2.2.1 Intertemporal Consumption Theoretical Model

Household consumption behaviour is modelled using an intertemporal utility maximization framework, where agents seek to smooth consumption over time. This analysis builds on the simple model proposed by Kaplan et al. (2014), which is particularly suited for studying the behaviour of HtM households.

The model spans three periods $t = \{0, 1, 2\}$, where consumption occurs in the last two periods. The household's intertemporal utility, assuming no discounting between periods, is given by:

$$\upsilon_0 = \{u(c_1) + u(c_2)\} \tag{2.2.1}$$

Where c_t represents consumption in period t.

Households begin with an initial endowment ω and have access to two types of assets: Liquid assets (m) and illiquid assets (a). Liquid assets refer to cash or financial instruments that can be readily accessed without significant transaction costs. In contrast, illiquid assets, such as housing or retirement accounts, yield higher returns but are costly to convert into cash before maturity.

Households decide on their portfolio at $t = 0$ and determine their consumption and savings at $t = 1$, based on their income y_1, and again at $t = 2$, when they receive and consume income y_2.

According to Kaplan et al. (2014), Non-HtM households have positive liquid ($m_2 > 0$) and illiquid ($a \geq 0$) assets after consuming in the first period, resulting in $c_1 = c_2$. In contrast, PHtM and WHtM households consume less in the first period than in the second ($c_1 < c_2$). Specifically, PHtM have both $m_2 = 0$ and $a = 0$, while WHtM maintain $a_2 > 0$ and $m_2 = 0$.

At $t = 0$ the household maximizes its utility subject to budget constraints that reflect its initial endowment and consumption decisions across periods:

$$\begin{aligned} v_0 = \max\, & u(c_1) + u(c_2) \\ & s.t \\ & a + m_1 = \omega \\ & c_1 + m_2 = y_1 + m_1 \\ & c_2 = y_2 + m_2 + Ra \\ & m_1 \geq 0 \ , \ a \geq 0 \end{aligned} \tag{2.2.2}$$

This utility maximization problem illustrates the trade-off households face between current and future consumption, influenced by their portfolio composition and liquidity constraints. Non-HtM households can smooth consumption across periods, while PHtM and WHtM households exhibit more pronounced consumption variability, driven by differences in liquid asset availability.

Chapter 3

Methodological and Empirical Framework

This section outlines the methodological and empirical tools employed to estimate the Marginal Propensity to Consume (MPC) based on the behaviour of Hand-to-Mouth (HtM) households.

3.1 Methodological Framework

For the estimation of the MPC, I employ the empirical method proposed by Blundell et al. (2008), adapted by Hong (2023). This approach is based on the Permanent Income Hypothesis (PIH), where income is decomposed into permanent and transitory components. The income process is represented as:

$$\begin{aligned} Ln(Y_{i,t}) &= \phi Z'_{i,t} + P_{i,t} + \varepsilon_{i,t} \\ P_{i,t} &= P_{i,t-1} + \zeta_{i,t} \\ \varepsilon_{i,t} &\sim N(0,\sigma^2), \;\; \zeta_{i,t} \sim N(0,\sigma^2), \;\; \varepsilon_{i,t} \perp \zeta_{i,t} \end{aligned} \tag{3.1.1}$$

Where, $Ln(Y_{i,t})$ represents the log income, $\phi Z_i, t'$ denotes observable characteristics, P_i is the permanent component of income, and $\varepsilon_{i,t}$ is the transitory component.

To simplify the analysis, the non-predictable part of income[1] is defined as:

$$y_{i,t} := Ln(Y_{i,t}) - \phi Z_i, t' \tag{3.1.2}$$

Similarly, the predictable and non-predictable components of consumption are expressed as:

$$c_{i,t} := Ln(C_{i,t}) - \phi Z_i, t' \tag{3.1.3}$$

This decomposition allows us to isolate the effects of non-predictable changes in income and assess how these changes influence the non-predictable part of consumption. Blundell et al. (2008) introduce a partial insurance parameter (ψ) to measure the elasticity of consumption to transitory income shocks. It is calculated as:[2]

$$\psi = \frac{cov[\Delta c_{i,t}, \varepsilon_{i,t}]}{cov[\Delta y_{i,t}, \varepsilon_{i,t}]} \tag{3.1.4}$$

This parameter reflects the extent to which transitory income variations influence consumption. When ψ is close to zero, the household exhibits full insurance, meaning consumption remains unaffected by transitory shocks as they are entirely absorbed through other mechanisms. Higher values of ψ indicate that transitory shocks have a stronger impact on consumption.

Distinguishing between transitory and permanent income shocks poses significant empirical challenges, necessitating robust econometric techniques. To address this, Blundell et al. (2008) employs an instrumental variable (IV) approach, using the following instrument:

$$\Delta y_{i,t+1} = \zeta_{i,t} + \varepsilon_{i,t+1} - \varepsilon_{i,t} \tag{3.1.5}$$

Here, $\zeta_{i,t+1}$ represents the idiosyncratic error term of $P_{i,t}$. Using this approach, the partial insurance parameter is redefined as:

$$\psi = \frac{cov[\Delta c_{i,t}, \Delta y_{i,t+1}]}{cov[\Delta y_{i,t}, \Delta y_{i,t+1}]} \tag{3.1.6}$$

Hong (2023) adapts this method to account for different time structures in the data. This adaptation mitigates issues arising from non-sequential survey designs, as seen in the EPS, which collects data intermittently rather than annually. It

[1] Note that we cannot distinguish P_i from $\varepsilon_{i,t}$, so it is necessary to use differenced income and consumption.

[2] For further explanation, see Appendix A.

also allows for modelling MPC behaviour in emerging market contexts. For this adaptation, Hong assumes that households cannot foresee future shocks, leading to the following conditions:

$$cov[\Delta c_{i,t}, \Delta y_{i,t+j}] = cov[\Delta y_{i,t}, \Delta y_{i,t+j}] = 0 \tag{3.1.7}$$

Using this, the partial insurance parameter is expressed as:

$$\psi = \frac{cov[\Delta^K c_{i,t}, \Delta^K y_{i,t+K}]}{cov[\Delta^K y_{i,t}, \Delta^K y_{i,t+K}]}, \;\; K \geq 1 \tag{3.1.8}$$

Finally, the MPC is computed by multiplying ψ with the consumption-to-income ratio:

$$MPC = \psi \cdot \frac{E[C_{i,t}]}{E[Y_{i,t}]} \tag{3.1.9}$$

These parameters are estimated using the Generalized Method of Moments (GMM) based on the following moment conditions:

$$E[\kappa Y_{i,t} - C_{i,t}] = 0 \tag{3.1.10}$$

$$E[\Delta^K c_{i,t} - \alpha - \psi \Delta^K y_{i,t}] = 0 \tag{3.1.11}$$

$$E[\Delta^K y_{i,t+K}(\Delta^K c_{i,t} - \alpha - \psi \Delta^K y_{i,t})] = 0 \tag{3.1.12}$$

For households classified as HtM, additional parameters and moments are introduced to capture differences between non-HtM, WHtM, and PHtM households:

$$E[(\kappa_H Y_{i,t} - C_{i,t}) \cdot D_H] = 0 \tag{3.1.13}$$

$$E[(\Delta^K c_{i,t} - \alpha_H - \psi_H \Delta^K y_{i,t}) \cdot D_H] = 0 \tag{3.1.14}$$

$$E[(\Delta^K y_{i,t+K}(\Delta^K c_{i,t} - \alpha_H - \psi_H \Delta^K y_{i,t})) \cdot D_H] = 0 \tag{3.1.15}$$

Where D is a binary variable representing the groups in H, $\forall H \in \{WHtM, PHtM, NHtM\}$.

These additional moments extend the model's applicability by enabling the estimation of heterogeneous MPCs while maintaining consistency with the theoretical framework. This refinement is essential for analysing the distinct consumption responses of diverse household groups.

3.2 Data

For the empirical estimation, I use the Social Protection Survey of Chile[3] (Encuesta de Protección Social, EPS, in Spanish), covering the years 2004, 2006, 2009, 2015, and 2020. The 2012 survey is excluded as it is not considered a finalized or reliable product by its creators. From this dataset, I extract and select the relevant survey items necessary to construct the key variables for the empirical model, including income, assets, and observable household characteristics, among others.

Once the variables are constructed, I restrict the analysis to households that appear in the sample at least three times consecutively. This approach ensures a more robust panel structure, reducing potential inconsistencies and enhancing the reliability of the results.

3.3 Variable Construction and Hand-to-Mouth Classification

To construct the variables, I follow the methodologies of Kaplan and Violante (2014) and Kaplan et al. (2014). Income is calculated as the sum of periodic earnings, including wages from first and second jobs, pensions, transfers, rental income, and interest from shares and deposits. Consumption is composed of various periodic expenses, including basic expenses (food, clothing, basic services), rent, and education expenses.

Liquid wealth is defined as the difference between liquid assets and liquid liabilities. Liquid assets include savings in bank accounts, mutual funds, deposits, and shares. Liquid liabilities include different types of bank debt, such as credit card balances, lines of credit, and other types of credit debt.

Illiquid wealth consists of illiquid assets minus illiquid debt. Illiquid assets include properties, retirement funds, and life insurance policies, while illiquid debt includes mortgage payments and other housing-related debts.

To determine whether a household is classified as HtM, I use the definition provided by Kaplan and Violante (2014) and Kaplan et al. (2014). Specifically, a household is classified as HtM if its net liquid wealth is less than or equal to half of its

[3] Ministerio del Trabajo y Previsión Social (2020)

current income. Among HTM households, those with illiquid assets less than or equal to zero are classified as PHtM, while those with illiquid assets greater than zero are classified as WHtM. Households that do not meet the HtM criteria are categorized as NHtM.

For quintile estimation, households are classified according to their past income $(t-K)$ to mitigate the influence of income shocks in period t on their classification and behaviour, as suggested by Hong (2023). Quintile classification is based on per capita income, aligning with the methodology used by most economic programs in Chile to determine eligibility. In addition, this approach offers a more accurate representation of the true income distribution.

Chapter 4

Analysis

4.1 Characterization of households

4.1.1 HtM in Chile

In this sample from the EPS, I found that approximately 94% of households are classified as Hand-to-Mouth (HtM). Of these, 71% are Wealthy Hand-to-Mouth (WHtM) and 23% are Poor Hand-to-Mouth (PHtM) (Table 4.1.1). When analyzing the structure of illiquid assets, the primary factor driving this distinction is homeownership. About 93% of WHtM households own a home (Table 4.1.2), largely due to government housing subsidies, which are part of a robust program aimed at strengthening access to housing.

Regarding liquid debt, Chilean households exhibit high levels of indebtedness, with credit card debt from retail stores being the most common form of liquid liability, particularly among lower-income households. Approximately 30% of households in the lowest per capita income bracket hold this type of debt (Figure 4.1.1). When decomposing by HtM status, PHtM households emerge as the most indebted, with around 36% of them carrying significant liquid debt (Table 4.1.3). This suggests that poorer households sustain their consumption primarily through borrowing, which in turn compromises their future income as they prioritize debt repayment.

Table 4.1.1: Average Proportion of HtM Households by Country

	Average Proportion			
Country	HtM	Wealthy HtM	Poor HtM	Source
Chile	**94%**	**71%**	**23%**	Author Calculations
U.K.	34%	23%	10%	Kaplan et al., 2014
Germany	32%	25%	7%	Kaplan et al., 2014
U.S.	31%	21%	10%	Kaplan et al., 2014
Canada	30%	18%	12%	Kaplan et al., 2014
Italy	24%	16%	8%	Kaplan et al., 2014
France	21%	17%	3%	Kaplan et al., 2014
Spain	20%	15%	4%	Kaplan et al., 2014
Australia	19%	17%	3%	Kaplan et al., 2014
China	17%	15%	2%	Cui and Feng, 2017
Japan	13%	8%	5%	Hara et al., 2016

Chilean source: calculation based on sample data from EPS.

Table 4.1.2: Illiquid Asset Ownership by HtM Status

Illiquid Asset	Non-HtM	Wealthy-HtM	Poor-HtM	No Distinction
Housing	70%	93%	0%	70%
Vehicles	33%	27%	0%	21%
Secures	12%	7%	0%	6%
*Vehicles or Secures	9%	7%	0%	5%

Source: Author calculation based on sample data from EPS.
*Excludes Housing from Calculation.

Table 4.1.3: Liquid Debt by HtM Status

Liquid Debt	Non-HtM	Wealthy-HtM	Poor-HtM	No Distinction
*Commercial houses	30.1%	28.1%	35.6%	33.6%
*Bank	7.0%	3.5%	6.2%	5.6%
Credit Line	5.2%	2.6%	5.1%	4.5%

Source: Author calculation based on sample data from EPS.
*Correspond to Credit Card debt

4.1.2 Main Results

The GMM estimation reveals significant differences between the No Distinction model and the Kaplan-Violante (KV) model. The Marginal Propensity to Consume (MPC) increases notably when accounting for heterogeneous wealth portfolios

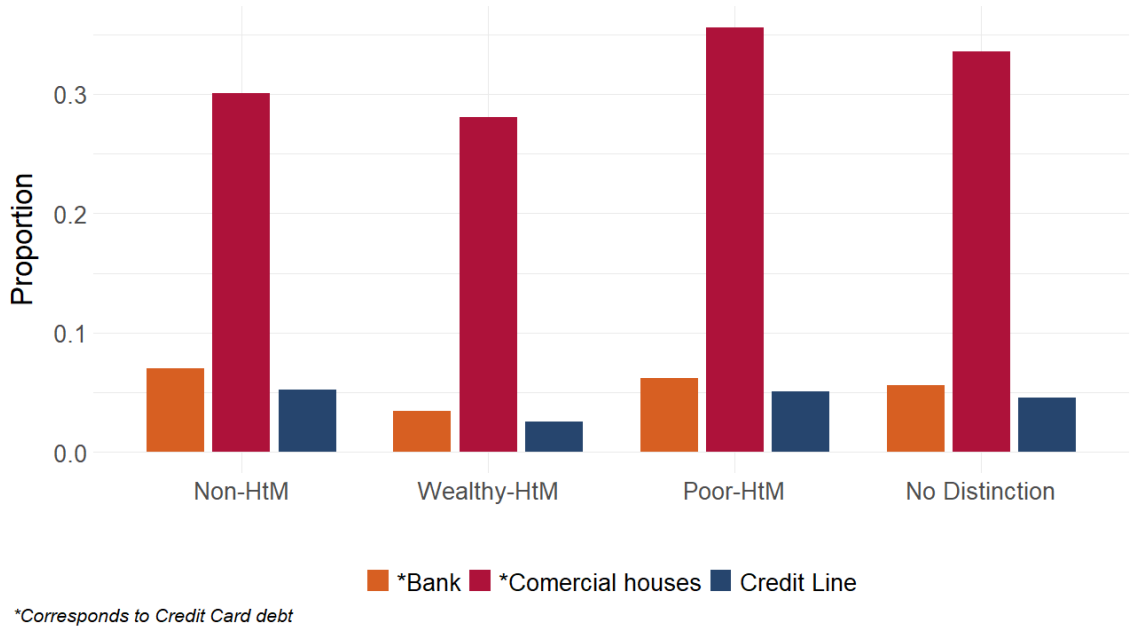

Figure 4.1.1: Liquid Debt by HtM Status

and distinguishing between HtM households. In particular, heterogeneous MPC estimates are approximately three times higher than those derived from the No Distinction model (Table 4.1.4).

Table 4.1.4: Marginal Propensity to Consume by HtM Status

	Non-HtM	Wealthy-HtM	Poor-HtM	No Distinction
MPC	0.47***	0.66***	0.85***	0.14***
	(0.0588)	(0.0251)	(0.0539)	(0.0133)

Note: Standard errors are presented in parentheses below each estimate.
Significance levels are indicated as follows: *** for 1%, ** for 5%, and * for 10%.

When estimating by quintiles to capture non-linear effects of per capita income, a similar pattern emerges (Figure 4.1.2). The inclusion of heterogeneous effects significantly enhances the MPC estimates, widening the gap between the No Distinction model and the HtM model. This difference is especially pronounced in the lowest quintiles, where the MPC in the HtM model is nearly four times higher than in the No Distinction model (Table 4.1.5).

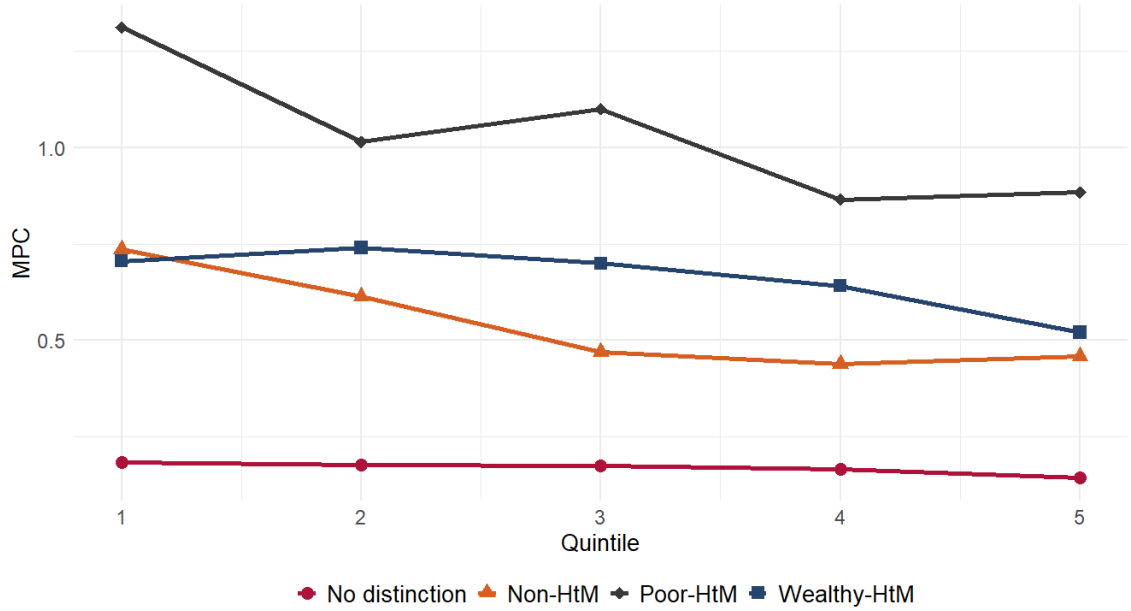

Figure 4.1.2: Marginal Propensity to Consume (MPC) by Quintile

Table 4.1.5: Marginal Propensity to Consume by HtM Status and Quintile

Quintile	Non-HtM	Wealthy-HtM	Poor-HtM	No Distinction
1	0.7367***	0.7058***	1.3115***	0.1844***
	(0.2072)	(0.0516)	(0.2004)	(0.0301)
2	0.6141***	0.7404***	1.0148***	0.1778***
	(0.2267)	(0.0624)	(0.1193)	(0.0344)
3	0.4696***	0.6995***	1.1005***	0.1751***
	(0.1224)	(0.0508)	(0.1227)	(0.0278)
4	0.4392***	0.6418***	0.8656***	0.1659***
	(0.0930)	(0.0475)	(0.0860)	(0.0259)
5	0.4585***	0.5209***	0.8841***	0.1438***
	(0.0886)	(0.0363)	(0.1440)	(0.0228)

Note: Standard errors are presented in parentheses () below each estimate. Significance levels are indicated as follows: *** for 1%, ** for 5%, and * for 10%.

Chapter 5

Discussion

5.1 Results Discussion

In this investigation, I focus on estimating the Marginal Propensity to Consume (MPC) for Chile, incorporating Hand-to-Mouth (HtM) behaviour and contrasting it with No Distinction estimations that do not account for differences in wealth portfolio composition. Additionally, I estimate MPC by income quintiles to capture heterogeneous consumption patterns across different income levels.

Chile was selected due to the availability of relevant data, and the focus on HtM behaviour addresses a gap in the Latin American literature, as no prior estimations of this kind exist for the region. This paper aims to contribute to closing that gap by providing new evidence.

The results indicate that incorporating HtM behaviour significantly alters the estimated MPC. Specifically, the average MPC under the HtM model is approximately three times higher than in the No Distinction model (Table 4.1.4). When analysing quintiles, the HtM model reveals higher and more varied MPC estimates across income groups. In contrast, the No Distinction model shows lower and relatively stable MPC values across quintiles (Figure 4.1.2, Table 4.1.5). This suggests that the HtM model better reflects economic behaviour in the Chilean context.

The observed differences can largely be attributed to the sensitivity of consumption to income changes, a factor not adequately captured by No Distinction estimations.

Notably, while the HtM model reflects higher sensitivity, the consumption-to-income ratio remains consistent across models. These findings suggest that incorporating heterogeneous behaviour into the data improves the accuracy and performance of the estimations.

One of the most striking results is that the estimated MPC for Poor Hand-to-Mouth (PHtM) households in the first three quintiles exceeds one under the HtM model. This implies that household consumption increases by more than the corresponding increase in income. A key driver of this phenomenon is Chile's banking structure, which allows retail companies to issue credit cards and provide loans with minimal collateral requirements. These credit products are primarily accessed by low-income households (Figure 4.1.1, Table 4.1.3).

On average, I find that 71% of the population can be classified as Wealthy Hand-to-Mouth (WHtM), while Poor Hand-to-Mouth (PHtM) households represent 23% (Table 4.1.1). The high proportion of WHtM households is largely explained by social programs and government subsidies that facilitate home ownership (Table 4.1.2). In terms of MPC, and contrary to existing literature, the behaviour of WHtM households aligns more closely with non-HtM households than with PHtM households. However, both groups exhibit higher MPCs compared to models that do not account for HtM segmentation.

These results carry direct implications for policy design, particularly regarding household wealth portfolio composition. The findings highlight a high dependence on credit, especially from retail companies, and a significant reliance on current income. As a result, fiscal stimulus measures are likely to have a pronounced impact on household consumption and overall economic activity.

However, it is important to acknowledge the limitations of this investigation. One significant constraint is the quality of the data, as it is self-reported. This introduces potential biases, as respondents may underreport or overreport their financial situation—often due to distrust of institutions or in an attempt to qualify for social benefits. Although efforts were made to minimize errors and exclude non-representative observations, some degree of bias may persist, potentially affecting the precision of the MPC estimates.

Despite these limitations, the overall conclusions remain robust. The inclusion of HtM behaviour enhances the performance of MPC estimations, offering a

more accurate understanding of household consumption patterns in Chile. This contrasts with models that do not account for differences in wealth portfolio composition, which tend to underestimate MPCs.

Chapter 6

Conclusion

The marginal propensity to consume is one of the most studied topics in the literature on consumption. The continuous growth of the literature, methodologies, and computational capacity allows us to estimate more accurate MPCs under different assumptions. These advances enable us to abandon traditional assumptions, such as the representative agent, and adopt new and more realistic ones, such as heterogeneous agents. An example of this is the model by Kaplan and Violante (2014), which improves the performance of MPC estimation by allowing for different household wealth portfolio structures, mainly distinguishing between liquid and illiquid wealth. This distinction enables consideration of liquidity constraints as well as the possibility of smoothing consumption through illiquid assets.

The estimation of this model in developed countries provides significant evidence for the existence of this phenomenon. This implies that the MPC differs from previous estimates derived from models that do not account for such behaviour. For example, Kaplan argues that MPC estimates from the HtM model are more accurate than those from models like spender-saver frameworks. However, no estimations currently exist for emerging countries, particularly in Latin America. These countries exhibit distinct characteristics, mainly due to structural differences, income inequality, market rigidities, credit access, and other factors. As a result, evidence from developed countries does not necessarily apply to emerging economies. This research aims to contribute to filling this gap in the literature by providing evidence from a Latin American country, specifically Chile. The

available data from the EPS, the country's first longitudinal survey, allows us to extract and construct the relevant variables needed to test the HtM model and estimate the MPC for Chile.

This investigation yields five main findings. First, the proportion of HtM households in Chile is approximately 94%, with 71% classified as wealthy HtM and 23% as poor HtM (Table 4.1.1). This indicates that a large proportion of households in the country have few or no liquid assets. Furthermore, most of these households are indebted, particularly through retail credit cards (Figure 4.1.1). Simultaneously, there is a significant proportion of households that own property (Table 4.1.2), suggesting that housing programs in Chile are effective. However, many people continue to rely solely on their current income and debt.

Second, the proportion of HtM households in Chile is three times higher than in developed countries (Table 4.1.1). This suggests that emerging economies may face greater liquidity constraints than developed ones, highlighting the need for policymakers to carefully consider the applicability of economic policies derived from developed economies, as structural differences can significantly affect the results.

Third, the MPC estimated under the HtM distinction is approximately three times higher than that estimated without this distinction (Table 4.1.4). This finding suggests that estimations failing to account for household heterogeneity do not capture the true MPC.

Fourth, estimations by per capita income quintiles better capture household behaviour. The HtM model shows that the MPC for the lowest per capita income quintile is four times higher than for the No Distinction model (Table 4.1.5). This finding underscores the importance of incorporating heterogeneous behaviour in estimations, as it reveals different patterns and relationships within the data.

Fifth, the main difference between the no-distinction model and the HtM model lies in the sensitivity of consumption to income changes, specifically in the partial insurance parameter identified by Blundell et al. (2008) The consumption-to-income ratio is similar across models, further emphasizing the need to incorporate heterogeneity to better capture the true relationship between income and consumption.

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Appendix A

Appendix

The objective of this appendix is to clarify certain results derived from the Blundell et al. (2008) model (BPP) and Hong (2023) adaptation.

A1 BPP Model

A1.1 Introduction to BPP Model

The BPP model is a widely recognized framework used to analyse how households respond to income shocks, distinguishing between transitory and permanent components of income. By separating these components, the model allows researchers to estimate the extent to which households can smooth consumption in the face of unpredictable changes in income. This provides valuable insights into the degree of insurance against economic shocks available to households.

A1.2 Estimating Transitory and Permanent Components

After estimating the unpredictable components of income and consumption, denoted as $y_{i,t}$ and $c_{i,t}$ respectively, the transitory component is not immediately isolated because the permanent component is still present. To address this, Blundell et al. (2008) eliminates the permanent component by analysing the difference in income over time:

$$\Delta y_{i,t} = \zeta_{i,t} + \Delta \varepsilon_{i,t}$$

Note that ζ remains part of the expression. As a result, the effects of the transitory component are not fully isolated. To determine $cov(\Delta c_{i,t}, \varepsilon_{i,t})$ and $cov(\Delta y_{i,t}, \varepsilon_{i,t})$ —representing the effect of transitory shocks on changes in consumption and income— Blundell et al. (2008) applies orthogonality conditions, relying on two key assumptions:

- **No Foresight:** Households have no information about future shocks. This implies that expectations about future income or consumption do not influence current decisions.
- **Short Memory:** Consumption decisions are influenced only by recent income shocks, indicating minimal long-term dependence on past income.

These assumptions lead to the following relationships:

$$cov(\Delta c_{i,t}, \zeta_{i,t+1}) = cov(\Delta c_{i,t}, \varepsilon_{i,t+1}) = 0$$
$$cov(\Delta c_{i,t}, \zeta_{i,t-1}) = cov(\Delta c_{i,t}, \varepsilon_{i,t-1}) = 0$$

A1.3 Justification for the Assumptions

The assumptions of No Foresight and Short Memory are fundamental to simplifying the estimation process and ensuring that the identification of transitory shocks is feasible. By assuming that households cannot predict future income shocks (No Foresight), the model abstracts from forward-looking behavior that could complicate the analysis. The Short Memory assumption further simplifies the model by focusing on immediate past shocks rather than long-term historical dependencies.

Relaxing these assumptions could lead to more complex models that account for forward-looking behavior or long-term consumption patterns. However, the simplicity of these assumptions allows for tractable empirical analysis and aligns well with observed household behavior in many cases.

For a robustness check of these assumptions through numerical simulations, see Kaplan and Violante (2010), who explore the implications of relaxing the No Foresight and Short Memory assumptions. Their work highlights the potential impact of forward-looking behavior on the estimation of consumption responses to income shocks.

A1.4 Isolating the Effects of the Shocks

Building on these assumptions, Blundell employs an instrumental variable (IV) approach to isolate the effect of shocks on consumption and income dynamics. This method allows for the identification of transitory shocks by addressing the overlap between permanent and transitory components. The instrumental variable is:

$$\Delta y_{i,t+1} = \zeta_{i,t+1} + \varepsilon_{i,t+1} - \varepsilon_{i,t}$$

From this, the covariances can be derived:

$$cov(\Delta y_{i,t}, \Delta y_{i,t+1}) = -var(\epsilon_{i,t})$$
$$cov(\Delta c_{i,t}, \Delta y_{i,t+1}) = -cov(\Delta c_{i,t}, \varepsilon_{i,t})$$

These covariances play a crucial role in estimating the insurance parameter, which measures the extent to which households can buffer against income shocks.

Hong, however, proposed an adaptation that extends this framework to different time periods while preserving the same core assumptions:

$$cov(\Delta y_{i,t}, \Delta y_{i,t+j}) = cov(\Delta c_{i,t}, \Delta y_{i,t+j}) = 0, \;\; j \geq 2$$

As a result, the partial insurance parameter can be expressed as:

$$\psi = \frac{cov(\Delta c_{i,t} + \Delta c_{i,t-1}, \Delta y_{i,t+1} + \Delta y_{i,t+2})}{cov(\Delta y_{i,t} + \Delta y_{i,t-1}, \Delta y_{i,t+1} + \Delta y_{i,t+2})} = \frac{cov(\Delta^2 c_{i,t}, \Delta^2 y_{i,t+2})}{cov(\Delta^2 y_{i,t}, \Delta^2 y_{i,t+2})}$$

For $\Delta^K x_t := x_t - x_{t-K}$:

$$\psi = \frac{cov(\Delta^K c_{i,t}, \Delta^K y_{i,t+K})}{cov(\Delta^K y_{i,t}, \Delta^K y_{i,t+K})}, \;\; K \geq 1$$