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SELF-REPORT OF DISSERTATION

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Self-report of Dissertation

**WEALTH, CONSUMPTION, AND SAVING PATTERNS
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1 STATE OF THE ART ON WEALTH, CONSUMPTION, AND SAVING RESEARCH

Wealth, consumption, and savings influence how households manage their resources, i.e. their daily financial decisions, long-term planning, and the ability to manage unexpected events. These factors also drive economic growth, affect aggregate demand, and shape the stability of financial systems.

1.1. Theoretical Approaches to Wealth, Consumption, and Saving Dynamics

The Life-Cycle hypothesis (LCH) (Modigliani and Brumberg, 1954) and Permanent Income hypothesis (PIH) (Friedman, 1957) are the dominant frameworks for explaining the interdependent relationship between household wealth, consumption, and savings in both micro- and macroeconomics.

According to the LCH, households tend to accumulate wealth during their working years to ensure a more even consumption pattern during retirement. The LCH suggests that individuals strategically plan their consumption and savings over an extended period to optimize the distribution of their consumption throughout their lives. Savings result from an individual's decision to secure the necessary level of consumption in old age. Therefore, a crucial factor influencing decisions about consumption and savings is the age structure of the population, with the lifelong distribution of consumption being contingent on lifelong income and initial wealth.

Following the standard Life-Cycle framework (Modigliani & Brumberg, 1954), consumption is not defined as a function of current income alone, but as a linear function of total lifetime resources spread over the remaining life expectancy (T). To achieve a smooth consumption path, the household calculates its total available sources, comprising current accumulated assets (W) plus all future earnings expected before retirement ($R \times Y$) and divides this sum by its remaining life expectancy. This implies that wealth is consumed at a steady rate of $1/T$, while labor income is weighted by the proportion of years remaining until retirement to remaining life expectancy (R/T), reflecting the need to save a portion of current earnings to support consumption during the retirement period. Assuming zero interest rate and zero discount rate, this relationship is formalized as:

$$C_{i,t} = \underbrace{\frac{1}{T_{i,t}}}_{\text{MPC out of Wealth}} W_{i,t} + \underbrace{\frac{R_{i,t}}{T_{i,t}}}_{\text{MPC out of Labor Income}} Y_{i,t} \quad (1)$$

where:

- $C_{i,t}$: Current consumption;
- $W_{i,t}$: Current accumulated wealth (assets);
- $Y_{i,t}$: Expected annual labor income;
- $R_{i,t}$: Years remaining until retirement;
- $T_{i,t}$: Remaining life expectancy.

To transition from the microeconomic behavior of a single household i to the macroeconomic specification, we aggregate over all households. If we assume that age distribution and income profile of the population remain relatively stable over time, the individual marginal propensities to consume (MPC) can be averaged into constant economy-wide parameters, α and β . This aggregation yields the standard Ando-Modigliani (1963) function:

$$C_t = \alpha W_t + \beta Y_t \quad (2)$$

where α represents the aggregate MPC out of wealth and β MPC out of income. Having defined the individual consumption function in Equation 1, savings ($S_{i,t}$) is derived fundamentally as a residual. Under the simplifying assumption that current income ($Y_{i,t}$) approximates the expected future labor income, savings represents the disposable income left over after the consumption smoothing decision is met:

$$S_{i,t} = Y_{i,t} - C_{i,t} \quad (3)$$

The second hypothesis, PIH, points out that consumers make decisions based on their expectations of their long-term average income rather than their current income. Individuals seek to maintain a stable standard of living and adjust their consumption patterns according to their perception of their permanent income. When individuals experience a temporary increase in their income, such as receiving a bonus or unexpected short-term income, they tend to exhibit limited changes in their consumption patterns. This behavior stems from their perception that the income increase is transitory. Instead of a significant increase in consumption, individuals are more inclined to save or invest additional income to sustain their long-term average consumption level. Conversely, when facing a temporary income decline, they may rely on their savings or borrow money to maintain their usual consumption level (Friedman, 1957).

Despite their distinct origins, the LCH and PIH agree on a central prediction - agents are forward-looking, seeking to smooth consumption over time rather than basing expenditure solely on current income. To formalize this consensus and include the response to interest rates, the standard two-period model (t) and ($t+1$) under certainty can be considered. To formalize this consensus and include the response to interest rates, the standard two-period model (t) and ($t+1$) under certainty can be considered. *This model is described in more detail in the dissertation thesis.*

The two-period framework presented here serves as a sufficient baseline for isolating the mechanics of intertemporal substitution, but it is by no means exhaustive. As Jappelli and Pistaferri (2017) demonstrate, the canonical Life-Cycle model can be extended in numerous directions to capture greater realism. A more complex treatment might extend the horizon to multiple periods or infinite time to better analyze retirement savings, cast the optimization in continuous time, or explicitly introduce demographic variables to account for changing family needs over the life cycle.

While the deterministic framework outlined in Section 1.1 provides the structural foundation of the Life-Cycle and Permanent Income Hypotheses, its empirical validity relies on strong assumptions. In real life, households face significant income risk and potential borrowing limits that needs to be taken into account. In next section, we shift the focus from perfect consumption smoothing to consumption behavior under uncertainty and liquidity constraints.

1.1.1. Consumption under Uncertainty and Constraints

One of the most significant theoretical extensions to the standard model was introduced by the economist Robert Hall (1978). The central theoretical contribution of his Random Walk Hypothesis (RWH) is the demonstration that if agents are truly forward-looking, the best predictor of future consumption is arguably current consumption. This is because an optimizing agent will utilize all available information at time t - including lagged income data and anticipated economic trends - to set current expenditure levels. This implies that consumption follows a random walk: since the conditional expectation of the change in consumption is zero, the variable evolves non-deterministically, mirroring the behavior of asset prices in an efficient market. Consequently, any predictable variation in future income is essentially smoothed ex-ante; it is already internalized in the current consumption decision. Within this framework, uncertainty becomes the exclusive driver of consumption dynamics. Since all anticipated changes are factored into the baseline, the consumption path should be orthogonal to any information available in previous periods. Therefore, changes in consumption between t and $t+1$ occur solely due to the realization of stochastic shocks to lifetime wealth.

Although Hall's Random Walk Hypothesis represents one of the strongest formulations of the standard consumption-smoothing framework, subsequent empirical research identified several systematic deviations from its predictions. In particular, consumption was often found to respond excessively to current income changes, contrary to the implication that only unexpected shocks could affect consumption dynamics. These empirical inconsistencies motivated the development of behavioral approaches, which relax the assumption of fully forward-looking agents. Among the most influential of these extensions is the Behavioral Life-Cycle Hypothesis (BLCH), which incorporates psychological mechanisms such as mental accounting and non-fungibility of wealth. A core tenet of the standard model is *fungibility* - the idea that a unit of wealth has the same MPC regardless of its source (e.g., lottery winnings vs. salary).

Shefrin and Thaler (1988) argue that individuals violate fungibility through *mental accounting*. Households categorize wealth into non-fungible mental accounts, typically current income, current assets, and future income, each with a different MPC. For instance, individuals are far more likely to spend from current income than from future retirement wealth or home equity, even if the standard economic value is identical. This framing explains why consumption tracks income more closely than the standard smoothing model predicts.

To operationalize and test the validity of mental accounting, Jappelli and Pistaferri (2017), building on Levin (1998), provide a formal comparison between the consumption rules of a standard life-cycle agent c_L and a behavioral agent c_B . This distinction hinges entirely on the principle of fungibility. For the standard life-cycle consumer, consumption is determined strictly by total lifetime wealth, defined as the sum of the present value of future income streams (y) and the aggregate stock of K distinct asset categories (A_k). The functional form is given by:

$$c_{L,0} = c_L \left(\sum_{t=0}^{T-1} \frac{y_t}{(1+r)^t} + \sum_{k=1}^K A_{k,0} \right) \quad (4)$$

Because the standard model assumes perfect fungibility, the source of wealth is irrelevant to the spending decision. Consequently, the consumption response is identical across all resources. Whether the wealth originates from current labor income (y_0) or any specific asset class (A_k), the consumption response is uniform:

$$\frac{\partial c_{L,0}}{\partial y_0} = \frac{\partial c_{L,0}}{\partial A_{1,0}} = \dots = \frac{\partial c_{L,0}}{\partial A_{K,0}} \quad (5)$$

In contrast, the behavioral consumer (c_B) violates this condition. Their consumption function depends not merely on the level of total wealth, but on its composition. Assets are implicitly categorized into mental accounts, often ordered by liquidity or psychological accessibility (e.g., distinguishing between spendable cash in a checking account versus “*untouchable*” housing equity).

$$c_{B,0} = c_B(y_0, \dots, y_{T-1}, A_{1,0}, A_{2,0}, \dots, A_{K,0}) \quad (6)$$

This framing leads to a strict hierarchy of marginal propensities. Because individuals are more likely to spend from liquid accounts than from illiquid savings, the MPC varies systematically by asset type. The resulting inequality indicates that consumption is most sensitive to current income, followed by liquid assets, and least sensitive to illiquid wealth:

$$\frac{\partial c_{L,0}}{\partial y_0} > \frac{\partial c_{L,0}}{\partial A_{1,0}} > \dots > \frac{\partial c_{L,0}}{\partial A_{K,0}} \quad (7)$$

This mathematical violation of the equality serves as the primary testable implication for distinguishing behavioral agents from standard optimizers in empirical data.

Bridging the gap between the RWH and Mental Accounting Theory is the Buffer-Stock model (Deaton, 1991; Carroll, 1997). The Buffer-Stock model explains saving behavior by balancing two key forces: prudence, which drives precautionary saving, and impatience, which leads to delaying savings. The model suggests that people aim to maintain a target level of wealth relative to their permanent income. This target is specific to each individual and remains stable. If someone’s wealth goes above the target, impatience tends to reduce savings (low marginal propensity to save), while falling below the target increases the desire to save (high marginal propensity to save). *To formalize this, see the details in the dissertation thesis.*

This dynamic has profound implications for the life-cycle profile of wealth. Carroll’s (1997) simulations indicate that, unlike the standard LCH where young agents accumulate significant assets in

anticipation of retirement, the Buffer-Stock model predicts relatively little wealth accumulation during the early stages of the life cycle.

Because of the impatience and the precautionary motive, these young households generally avoid borrowing; instead, they are effectively constrained, holding consumption tightly within the bounds of their current income. As a result, consumption tracks income closely over most of working life. Deaton (1991) refers to this as high-frequency income smoothing: households buffer against short-term, transitory fluctuations in income, but they do not smooth consumption over the long horizon of their lifetime earnings.

This framework establishes that households do not react uniformly to economic changes; rather, those with low liquid wealth respond strongly to income fluctuations, while asset-rich households are able to insulate their spending. The following section elevates these insights to the macroeconomic level.

1.1.2. Household Heterogeneity in New Keynesian Models

The traditional benchmark for analyzing these dynamics is the Representative Agent New Keynesian (RANK) framework. This model assumes the economy is populated exclusively by Ricardian households. These agents are defined by the characteristics established in the standard frictionless model (Section 1.1): they are forward-looking, possess unrestricted access to financial markets, and optimize over an infinite horizon. Crucially, they exhibit Ricardian Equivalence, viewing government debt merely as deferred taxation. Consequently, for a Ricardian household, the timing of tax changes is irrelevant to consumption decisions, provided the present value of government spending remains constant.

However, as we highlight in Section 1.2, empirical evidence suggests a significant portion of the population does not adhere to this behavior. When Ricardian households are aggregated, the model fails to match the empirical volatility of consumption and misidentifies the transmission channels of economic policy. To resolve this, disconnect between micro-level friction and macro-level dynamics, literature has evolved to explicitly incorporate heterogeneity through constrained-agent and heterogeneous-agent frameworks.

1.1.2.1. The Two-Agent New Keynesian (TANK) Framework

To reconcile the theoretical Euler equation with the empirical reality of excess sensitivity, Campbell and Mankiw (1989) and later Galí et al. (2007) proposed the Two-Agent New Keynesian (TANK) model. This approach departs from the standard RANK, which assumes that all households are Ricardian and have perfect access to financial markets. Instead, TANK divides the economy into two distinct household types:

1. *Ricardian households*: Unconstrained, forward-looking agents who have access to financial markets and smooth consumption according to the standard Euler equation (as described in Section 1.1).
2. *Rule-of-Thumb (hand-to-mouth) households*: Constrained agents who lack access to financial markets and simply consume their current disposable income in every period.

The TANK framework provides a tractable approximation of limited participation in asset markets. By weighting the aggregate consumption function between these two groups, TANK models can successfully replicate the empirical observation that aggregate consumption responds significantly to transitory income shocks - a feature absent in RANK models. However, TANK remains a stylized approximation because households are assigned permanently to either Ricardian or hand-to-mouth states, preventing transitions across liquidity positions over time. Recent work by Bilbiie (2025) helps bridge the conceptual gap between TANK and fully heterogeneous HANK models through analytically tractable heterogeneous-agent frameworks (THANK). In this approach, households transition between constrained and unconstrained states according to a two-state Markov process, preserving much of the analytical simplicity of TANK while incorporating key HANK mechanisms such as cyclical heterogeneity, varying marginal propensities to consume, and liquidity-driven transmission channels.

1.1.2.2. The Heterogeneous Agent New Keynesian (HANK) Framework

The most recent theoretical advancement, the Heterogeneous Agent New Keynesian (HANK) framework (Kaplan, Moll, & Violante, 2018), integrates the uninsurable idiosyncratic risk and precautionary motives of the Buffer-Stock model into a general equilibrium setting.

Unlike standard TANK models with fixed households types, HANK frameworks model a non-degenerate distribution of households facing uninsurable income risk, liquidity constraints, and heterogeneous balance sheets. The tractable heterogeneous-agent literature that some key HANK insights, particularly the role of high-MPC households and redistribution channels, can already emerge in simplified two-agent environments, while richer distributional dynamics require the full HANK framework.

An important insight from the HANK literature is the identification of wealthy hand-to-mouth households - agents who hold substantial illiquid assets (e.g., housing) but little liquid cash. These households behave like constrained agents in response to small, transitory shocks, despite having high net worth. By capturing the full distribution of the MPC, HANK frameworks demonstrate that the transmission mechanism of monetary and fiscal policy is far more complex than the intertemporal substitution channel emphasized in standard models, relying instead on indirect income effects and the redistribution of wealth.

Masek (2026) extends the HANK framework to analyze how household inflation expectations affect current consumption. The central mechanism relies on the interaction between incomplete pass-through from expected inflation to expected nominal wages, the resulting expected decline in real income, and the standard intertemporal substitution channel. In representative-agent (RANK) models, this negative real wage effect is offset by profit income, preventing the real income channel from dominating aggregate consumption dynamics. However, in heterogeneous-agent environments where profit redistribution is attenuated or absent for constrained households, the consumption response depends critically on whether the intertemporal substitution effect is strong enough to outweigh the expected decline in real income. To formalize this mechanism, Masek (2026) defines the expected real wage as:

$$E_t w_{t+1} = E_t w_{t+1}^n - E_t p_{t+1} = (\Omega - 1) E_t p_{t+1} \quad (8)$$

where Ω represents the pass-through coefficient from inflation expectations to nominal wage expectations. When pass-through is incomplete ($\Omega < 1$), higher inflation expectations imply a decline in expected wages and therefore a negative expected real income shock.

The aggregate consumption response depends on household heterogeneity. Constrained hand-to-mouth households consume primarily out of current labor income:

$$c_t^H = w_t + n_t^H \quad (9)$$

where c_t^H is consumption and $w_t + n_t^H$ represents labor income. Because these agents exhibit a MPC of unity (or near-unity), they are highly sensitive to the real income channel described in Equation 17. In the stylized HANK framework, the resulting consumption response to inflation expectations is:

$$\frac{\partial c_t^H}{\partial E_t p_{t+1}} = \left(\frac{1+\varphi}{\sigma+\varphi} \right) (\Omega - 1) + \frac{1}{\sigma} \quad (10)$$

The first term captures the negative real income effect generated by incomplete wage pass-through, while the second term represents the standard intertemporal substitution channel. If σ denotes the inverse elasticity of intertemporal substitution, then low EIS corresponds to high values of σ . Masek (2026) shows that when the substitution channel is weak relative to the negative real income effect, particularly under low pass-through ($\Omega - 1$) and a large share of constrained households, higher inflation expectations can reduce rather than stimulate current consumption.

More broadly, this result demonstrates that aggregate consumption dynamics depend not only on intertemporal optimization, but also on the distribution of liquidity, income exposure, and access to profit income across households. In the next section, we summarize the empirical papers testing the theoretical concepts presented so far.

1.2. Empirical Evidence on Wealth, Consumption, and Savings Dynamics

The theoretical framework posits that households are forward-looking optimizers who smooth consumption over time in response to the real interest rate and expected lifetime income. A central prediction of the standard LCH is that consumption should remain smooth even when income changes, provided those changes are anticipated. However, while the literature on expectations focuses on this forward-looking sentiment, empirical evidence suggests that actual consumption behavior often deviates significantly from standard models when income shocks materialize.

1.2.1. Testing the Euler Equation

The validity of the standard Euler equation (Eq. 6) relies on two critical empirical predictions: first, that agents adjust current spending in response to changes in intertemporal prices (the Elasticity of Intertemporal Substitution); and second, that consumption responds only to new information regarding future income, effectively smoothing out predictable fluctuations. This section evaluates the empirical evidence for these mechanisms.

Several empirical studies support this intertemporal substitution channel. D’Acunto et al. (2015), utilizing a natural experiment, identify a causal relationship between inflation expectations and spending decisions. Their results indicate that households anticipating higher inflation are approximately 8% more likely to purchase durable goods, such as vehicles and appliances. Similarly, Vellekoop and Wiederholt (2019), using Dutch panel data, find that households with higher inflation expectations save less and hold fewer liquid assets, consistent with the motive to shift purchasing power from the future to the present.

However, this transmission mechanism is not uniform across the wealth distribution. Lieb and Schuffels (2022) argue that the response is heavily moderated by household assets and liabilities. They find that the positive relationship between expected inflation and durable spending is amplified for households with lower net worth - particularly those with fixed-rate mortgages.

Conversely, the empirical paper of Coibion et al. (2019) documents significant deviations from this logic. They find that among Dutch households; higher inflation expectations often lead to a reduction in spending. They attribute this to a stagflationary view, where households interpret rising prices as a signal of declining future real income, allowing the negative income effect to overpower the substitution effect.

Furthermore, the impact of expectations depends not only on the level of inflation but also on its variance. Georgarakos et al. (2024) use the Consumer Expectations Survey to demonstrate that while higher mean inflation expectations (the first moment) stimulate durable spending, higher inflation uncertainty (the second moment) suppresses it. This points to a competing precautionary savings motive that dampens the standard Euler equation response.

While current spending may be adjusted in response to expected changes in intertemporal prices, the PIH requires that consumption responds to changes in expected lifetime wealth. A key prediction of this framework is that households should adjust their spending level immediately upon receiving news about future income. Consequently, predictable changes in income should not correlate with changes in consumption growth (the orthogonality condition).

Early tests using subjective expectations data support this standard view. Jappelli and Pistaferri (2000) tested whether consumption growth responds to expected income changes and found no significant correlation. This result supports the PIH orthogonality condition, implying that households successfully incorporate information about future income into their current living standards, thereby smoothing consumption against foreseeable fluctuations.

More recent evidence confirms this forward-looking mechanism, particularly regarding negative shocks. Dias da Silva et al. (2024) demonstrate that workers who anticipate job loss adjust their spending immediately upon perceiving the risk, rather than waiting for displacement. Similarly, Campos and Reggio (2015) found that during Spain’s Great Recession, consumption dropped significantly in response to rising unemployment rates, driven by forward-looking revisions of permanent income expectations.

However, this forward-looking behavior is not universal. In direct contradiction to the findings of Jappelli and Pistaferri (2000), Haider and Stephens (2004) demonstrate that consumption frequently drops at the moment of retirement - even when the event is perfectly anticipated. This suggests that for distinct life-cycle events, many households fail to smooth consumption and instead react to the immediate cash-flow drop.

Furthermore, the clarity of the income signal plays a critical role. Kosar and Melcangi (2025) argue that the reaction to news depends on the level of uncertainty. Using the Survey of Consumer Expectations, they find that the MPC is concave with respect to earnings growth uncertainty, implying that ambiguous news elicits a muted response compared to clear signals.

Even when households do respond to news, the magnitude often defies theoretical predictions. Attanasio, Kovacs, and Molnar (2020) find that while households insulate themselves well from transitory shocks, the response to permanent income shocks is only 0.29 - far below the theoretical prediction of unity. This excess smoothness suggests that households may possess insurance mechanisms against permanent shocks that standard models fail to capture.

The ability to smooth consumption is also unevenly distributed, driven largely by liquidity constraints. Stoltenberg and Uhlenborff (2022) document that the sensitivity of consumption to income expectations is three times larger for households in the bottom wealth quintile. This heterogeneity highlights the limitations of a one-size-fits-all smoothing model. As summarized in Table 1, while some evidence supports the Euler equation, substantial deviations persist due to structural barriers and uncertainty. Studies are categorized based on their alignment with the standard optimization framework. "YES" indicates clear empirical support for the theoretical mechanism; "YES, BUT" reflects behavior that is directionally consistent but quantitatively dampened by factors such as liquidity constraints or excess smoothness; "NO" denotes findings that directly contradict the theory; and "AMBIGUOUS" highlights cases where the consumption response is conditional on risk and uncertainty. This synthesis demonstrates that while the standard theoretical channels are present, they are frequently disrupted by structural frictions and heterogeneity.

1.2.2. The Excess Sensitivity Puzzle

In the previous section, we state that standard theoretical predictions such as Euler equation are present in empirical tests, however, some deviations related to structural frictions and heterogeneity do exist. Another prediction of the LCH is that consumption should remain smooth even when income changes, provided those changes are anticipated. However, empirical literature consistently documents excess sensitivity, where consumption tracks income more closely than the optimization framework predicts. This is most evident in the behavior of households around predictable life events and asset price fluctuations.

Retirement represents one of the most predictable income changes in life cycle. Under the standard model, forward-looking agents should save sufficiently during their working lives to maintain their marginal utility of consumption after leaving the workforce. Consequently, consumption should remain smooth through the transition to retirement.

Contrary to this prediction, Haider and Stephens (2004) demonstrate that consumption decreases significantly at retirement, even for workers who retire exactly as expected. Using reduced-form and two-stage least squares estimates, they find that consumption drops by 7 % to 11 % for workers who retire as anticipated. Furthermore, they find no significant difference in consumption changes between those who anticipate retirement and those who do not. This decline challenges the Permanent Income Hypothesis, suggesting that households do not fully adjust their consumption based on expected future income but instead react to the immediate drop in current cash flow - a clear sign of excess sensitivity.

Excess sensitivity is also observable in how households respond to changes in asset prices. Attanasio et al. (2009) investigate the relationship between house prices and consumption to determine whether spending is driven by a wealth effect or by the relaxation of credit constraints.

Authors describe three potential mechanisms. The first is a *direct wealth effect*, where rising prices make homeowners richer, stimulating consumption. However, they argue this primarily affects older owners

or those trading down. The second is the *collateral channel*, where rising house prices increase the value of collateral available to homeowners, alleviating credit constraints and allowing them to borrow more to consume.

Attanasio et al. (2009) find evidence supporting the collateral hypothesis over the simple wealth effect. They show that younger households are more responsive to unexpected house price increases than older households, despite having less housing wealth. This suggests that the consumption response is driven by the loosening of liquidity constraints rather than the realization of paper wealth. Additionally, they identify a *discouragement effect* among renters: as house prices rise, renters who intend to buy may reduce their savings efforts because the goal of homeownership becomes unattainable, further altering consumption patterns in ways the standard model does not predict.

Both the significant drop in consumption at retirement and the collateral-driven response to house price fluctuations reveal that household spending is not solely determined by lifetime wealth and consumption behavior deviates from the smooth path predicted by the standard LCH. This section shows that households fail in smoothing consumption perfectly and exhibit excess sensitivity to predictable income changes. In the next section, we provide an overview of potential reasons behind the imperfect consumption smoothing (the excess sensitivity), i.e. liquidity constraints, heterogeneity and uncertainty.

1.2.3. Liquidity Constraints, Heterogeneity and Uncertainty

The evidence of excess sensitivity shows that consumption tracks income much more closely than standard theory predicts. To understand why this happens, it is important to look at the MPC. In the benchmark LCH/PIH framework with forward-looking households and no binding liquidity constraints, a purely temporary income gain should generate only a limited increase in current consumption, implying a relatively low MPC. Empirical evidence of stronger consumption responses suggests that some households are unable or unwilling to fully smooth temporary income fluctuations, for example because of liquidity constraints, limited buffers, precautionary motives, or behavioral frictions. For this reason, identifying the determinants of the MPC is central to understanding why consumption responses differ across households.

To measure the drivers of the MPC, a growing body of research relies on survey-based experiments asking households about their intended response to hypothetical windfalls. This literature establishes that the MPC is highly heterogeneous and identifies three primary mechanisms determining its magnitude: liquidity constraints, sign asymmetry, and shock size.

The consensus across survey data is that the MPC is highest for households with lower liquidity, income, or wealth (Christelis et al., 2019; Jappelli and Pistaferri, 2014). However, Cherchye et al. (2024) refine this view by demonstrating that liquidity constraints are a more critical driver of consumption than total net worth. Their findings reveal that wealthy hand-to-mouth households - those with illiquid assets like housing but low cash reserves - exhibit high MPCs similar to poor households. This response is particularly intensified among younger cohorts, supporting the Buffer-Stock framework where liquid cash buffers matter more than total solvency.

Beyond liquidity, the nature of the shock matters. Fuster, Kaplan, and Zafar (2021) utilize hypothetical scenarios to identify a clear sign asymmetry: households react more strongly to losses than to gains. They find that households significantly reduce spending in response to news of future losses but largely ignore news of future gains. This suggests that consumption behavior is constrained not only by financial limits but also by cognitive costs or the salience of the shock.

Furthermore, the size of the shock induces non-linear responses. Jappelli, Savoia, and Sciacchetano (2024) document that the short-run MPC decreases as the size of the shock increases - falling from 26 % for small shocks (€1,000) to 15% for large ones (€50,000). However, larger shocks induce a more persistent consumption response in subsequent years. Comparing these regularities with theoretical simulations, they find that a standard one-asset incomplete markets model best replicates these non-linearities.

While hypothetical questions allow for controlled variation, Coibion, Gorodnichenko, and Weber (2020) provide rare empirical evidence from a real-world macro shock: the 2020 CARES Act stimulus. Validating the survey literature, they document an average MPC of approximately 0.40, with the majority

of funds allocated to savings and debt repayment rather than immediate consumption. Consistent with the hypothetical studies described above, they find significant heterogeneity: households facing liquidity constraints or lower incomes exhibited a significantly higher propensity to spend.

Despite extensive research on liquidity, wealth, and shock characteristics as drivers of the MPC, less is known about how subjective real income expectations are associated with reported spending out of temporary income gains. This gap is directly relevant for the present analysis, which uses household-level expectations about real income growth over the next twelve months to explain heterogeneity in the MPC. While the theoretical literature suggests that forward-looking agents should adjust their response to shocks based on their anticipated future income path, empirical evidence explicitly linking these specific beliefs to the MPC is scarce.

To our knowledge, the only prominent study to bridge these two strands of literature is Kosar and Melcangi (2025). Using the Survey of Consumer Expectations, they find that the MPC is increasing and concave in households' subjective earnings growth uncertainty. However, relying on a single study leaves the interaction between subjective expectations and the MPC largely undefined.

To synthesize the mechanisms discussed above, Table 2 categorizes the primary determinants of the MPC identified in recent empirical literature. It highlights that heterogeneity is driven not just by financial status (liquidity), but also by the psychological processing of the shock (sign and size asymmetry) and the clarity of the signal (uncertainty).

1.2.4. Subjective Income Expectations and MPC

While the existing MPC literature has primarily focused on liquidity constraints, wealth, income and shock characteristics, income expectations provide an additional channel through which heterogeneity in consumption responses may arise. As we already described, in the LCH/PIH framework, households base consumption decisions not only on current income but also on expected future resources, implying that expectations about future income are relevant for current consumption choices (Friedman, 1957; Modigliani & Brumberg, 1954). More favorable real income expectations may therefore be associated with a higher desired level of current consumption, because households anticipating stronger real income growth may perceive their intertemporal budget constraints more favorably.

However, this implication concerns the level of planned consumption and does not translate mechanically into a higher MPC out of a temporary income gain. This distinction is important because survey-based MPC measures are specifically designed to capture reported spending response to transitory income changes, rather than the overall level of household consumption (Jappelli & Pistaferri, 2014; Fuster et al., 2021). In a standard intertemporal framework, households that are forward-looking and able to smooth consumption should react only moderately to transitory income changes, because such changes have limited implications for lifetime resources. At the same time, empirical studies show substantial heterogeneity in MPCs, with higher spending responses among households with low cash-on-hand, lower liquidity, or weaker balance sheet positions (Jappelli & Pistaferri, 2014; Coibion et al., 2020).

For this reason, optimistic income expectations may be associated with a lower MPC if they also capture stronger perceived financial security, weaker liquidity constraints, or a lower need to use temporary liquidity for immediate consumption. This interpretation is consistent with the broader MPC literature showing that households with greater liquidity or stronger financial buffers tend to display lower consumption responses to temporary income gains (Jappelli & Pistaferri, 2014; Baker et al., 2020). It is also consistent with evidence that households do not respond symmetrically to gains and losses, and that even households with substantial responses to current gains may not respond strongly to news about future gains (Fuster et al., 2021).

The opposite relationship is also theoretically plausible. If favorable income expectations are interpreted mainly as a signal of higher expected permanent income, optimistic households may feel more comfortable increasing current spending, including spending out of a windfall. In this interpretation, optimism would be associated with a higher MPC. The expected sign of the relationship between optimistic real income expectations and the MPC is therefore ambiguous. It depends on whether the expectations

variable primarily captures higher expected lifetime resources or, instead, stronger ability to smooth consumption and lower dependence on transitory income.

Pessimistic expectations are similarly ambiguous. Households expecting their income to grow more slowly than prices may face stronger pressure to use additional income for current needs, which would imply a higher MPC. At the same time, weaker expected real income may strengthen precautionary saving motives, leading households to save a larger share of any temporary gain in anticipation of future deterioration. This tension is consistent with models and empirical evidence emphasizing precautionary motives, income risk, and subjective uncertainty as sources of heterogeneity in consumption responses (Carroll, 1997; Jappelli & Pistaferri, 2014; Kosar & Melcangi, 2025). In particular, Kosar & Melcangi (2025) show that higher perceived macroeconomic uncertainty can reduce household spending. These findings suggest that pessimistic expectations need not produce a simple positive MPC response, because spending pressure and precautionary saving may operate in opposite directions.

Based on these arguments, the assumptions about the relationship between income expectations and the MPC are mixed. More favorable expectations may increase desired consumption, but they may also be associated with lower spending out of temporary income if optimistic households are less liquidity constrained or closer to their preferred consumption path.

The regional dimension provides a further testable implication. The existing literature has mainly focused on differences in household wealth, consumption, and saving patterns across regions, while less attention has been paid to whether the relationship between income expectations and the marginal propensity to consume also varies regionally. This could be an interesting distinction as households may translate similar income expectations into different consumption responses depending on their liquidity position, precautionary saving motives, and balance-sheet constraints. If for example CE households have lower liquid wealth and weaker savings buffers than households in WSE, temporary income gains may be more closely associated with current spending in CE. In that case, CE households would be expected to report a higher MPC on average. Moreover, the relationship between expectations and the MPC may differ across regions if expectations are interpreted against different balance-sheet positions and liquidity constraints. This is consistent with the broader heterogeneous-agent literature, in which household balance sheets, liquid assets, and hand-to-mouth status play a central role in shaping MPC heterogeneity (Kaplan & Violante, 2014; Jappelli & Pistaferri, 2014).

2 AIM AND FOCUS OF THE DISSERTATION

This dissertation focuses on wealth, consumption, and savings in context of CE region. CE is a useful setting for studying disparities in household wealth, consumption and saving relative to WSE because households in the region generally hold substantially lower wealth stocks and, in several cases, weaker precautionary buffers. In 2024, average wealth per adult in CE remained far below the levels observed in WSE (UBS Global Wealth Report 2025). CE region is also very specific for its high homeownership rates compared to WSE. At the same time, Eurostat's indicator on the inability to face unexpected financial expenses shows that some Central European countries, particularly Slovakia and Hungary, continue to face difficulties in absorbing unexpected expenses, while Czechia and Poland point to substantial heterogeneity within the region (Eurostat, 2024).

Consumption disparities across the European Union reinforce this perspective, as Eurostat data show that in half of EU countries the mean consumption expenditure of the top income quintile was more than twice that of the bottom quintile. Additionally, OECD data from 2022 show negative household savings rates in Slovakia and Poland, highlighting their vulnerability to inflation, job loss, and other economic shocks. The V4 countries' average savings rate of 12.01 % (Eurostat, 2023) remains well below the 15.5 % seen in founding EU states, reflecting the impact of income fluctuations and wealth gaps on financial behavior.

Considering these dynamics, our research aims to evaluate the links between household wealth, household consumption and savings in the Central European region and to identify differences in household

decisions about consumption and savings based on differences and changes in wealth. To fulfill this aim we formulate following partial aims: (i) conduct a comprehensive review of the key theoretical frameworks on wealth, consumption, and saving; (ii) analyze differences in wealth, consumption, and saving patterns between CE and WSE; (iii) assess heterogeneity in these outcomes through a country case study within CE; and (iv) examine the role of income expectations as a possible factor associated with consumption behavior.

Conducting a comprehensive review of key theoretical concepts related to wealth, consumption, and savings as a first partial objective is essential because these interdependent topics form the foundation of household economic behavior and have been central to economic research for decades. This review will establish a robust theoretical framework for the dissertation by synthesizing diverse perspectives and identifying gaps but will also guide the empirical part of the dissertation thesis, ensuring its relevance to both academic discourse and practical policy implications.

The second partial aim of this dissertation is to analyze the differences in wealth, consumption, and saving patterns between CE and WSE. The aim is not only to identify whether CE differs from WSE in the level of wealth, consumption, and savings, but also to examine differences in portfolio composition, liability structure, and financial buffers. If households in CE face systematically different asset and debt positions, then one may expect the relationship between wealth, consumption, and saving also differs.

Thirdly, to provide case-study evidence on within-country heterogeneity in CE, the dissertation examines household consumption and saving patterns in Slovakia. Rather than serving as a purely descriptive exercise, this objective assesses whether differences across household groups follow systematic and economically interpretable patterns. Particular attention is paid to income, age, and wealth-related characteristics, together with the structure of household expenditures and the dispersion of consumption across groups. The analysis remains descriptive and associational, but it provides a within-country perspective on the heterogeneity that motivates the subsequent examination of income expectations and the MPC.

The fourth partial aim focuses on identifying a possible expectations-related channel. If CE exhibits a specific combination of wealth, expenditure structure, and saving, it is necessary to examine whether expectations about future conditions are differently associated with consumption behavior. The analysis compares results across CE and WSE to assess whether the relationship between income expectations and consumption differs across regions with different wealth, consumption, and saving profiles.

Based on the theoretical background and the empirical motivation outlined above, the dissertation proceeds from the assumption that differences in household wealth and financial resilience are likely to be reflected in consumption and saving behavior both across regions and within countries. The following hypotheses are therefore formulated to guide the empirical analysis.

The first hypothesis follows from the documented structural differences in household financial positions across Europe. The literature on household finance shows that wealth, liquid buffers, and saving capacity are central for households' ability to smooth consumption and absorb shocks (e.g. Modigliani & Brumberg, 1954; Friedman, 1957; Deaton, 1991; Carroll, 1997). In the CE context, these dimensions are particularly relevant because households are characterized by lower wealth stocks, weaker precautionary buffers, and a specific post-socialist housing legacy, where high homeownership may coexist with lower asset values and limited liquid financial resources (Beckmann et al., 2019; OECD, 2022; Eurostat, 2024). Existing studies document substantial cross-country heterogeneity in saving behavior and financial fragility in Europe, but they do not explicitly compare CE and WSE across the joint dimensions of wealth, consumption, and saving (Le Blanc et al., 2016; Arrondel et al., 2016; Ampudia et al., 2016; Beckmann et al., 2013). This motivates the expectation that household wealth, consumption, and savings are systematically lower in CE than in WSE. The first formulated hypothesis is:

H1: Household wealth, consumption, and savings are significantly lower in CE than in WSE.

The second hypothesis extends the cross-regional comparison by examining whether heterogeneity is also present within a single CE country. The Life-Cycle and Permanent Income frameworks link consumption and saving to age, income, and accumulated wealth (Modigliani & Brumberg, 1954; Friedman,

1957; Ando & Modigliani, 1963), while buffer-stock and heterogeneous-agent models stress the role of liquidity constraints, wealth composition, and precautionary motives (Deaton, 1991; Carroll, 1997; Kaplan et al., 2014; Kaplan, Moll, & Violante, 2018). Slovakia is used as an analytically informative CE case as it shares several structural features with other countries in the region, especially the post-socialist housing legacy, high owner-occupation, and household balance sheets centred on real estate. We formulate following hypothesis:

H2: Within Slovakia, household consumption and saving outcomes differ systematically across socio-economic and demographic groups, particularly by income, age, and wealth-related characteristics.

The third hypothesis is motivated by the literature linking expectations, liquidity constraints, and heterogeneous consumption responses. In the LCH/PIH framework, households are forward-looking and base consumption decisions not only on current income but also on expected future resources (Modigliani & Brumberg, 1954; Friedman, 1957). However, the MPC out of a temporary income gain captures a specific response to transitory liquidity rather than the overall level of planned consumption, which is why survey-based MPC measures are commonly used to study heterogeneity in spending responses to temporary income shocks (Jappelli & Pistaferri, 2014; Fuster et al., 2021). Empirical studies show that MPCs are heterogeneous and tend to be higher among households with lower liquidity, weaker financial buffers, or tighter constraints (Jappelli & Pistaferri, 2014; Christelis et al., 2019; Coibion et al., 2020). At the same time, the direct link between subjective income expectations and the MPC remains relatively underexplored, although subjective expectations are widely used as informative measures of future income prospects in consumption research (Jappelli & Pistaferri, 2000; Jappelli & Pistaferri, 2010). Kosar and Melcangi (2025) represent one of the few studies directly bridging subjective expectations and MPC heterogeneity. The regional comparison is therefore relevant because similar income expectations may translate into different spending responses depending on regional differences in household balance sheets, liquidity constraints, and precautionary saving motives, which is consistent with heterogeneous-agent approaches emphasizing the role of liquid assets, hand-to-mouth status, and balance-sheet heterogeneity (Kaplan et al., 2014; Kaplan, Moll, & Violante, 2018). The hypothesis is as follows:

H3: Income expectations are significantly associated with the MPC out of a hypothetical income gain, and the strength of this association differs between CE and WSE.

These hypotheses correspond directly to the main aim of the dissertation and provide a bridge between the theoretical discussion and the empirical analysis that follows. The first hypothesis captures the cross-regional comparison between CE and WSE, the second addresses within-country heterogeneity in the Slovak case study, and the third focuses on the association between income expectations and consumption responses. Together, they allow the dissertation to move from descriptive comparison toward a more analytical explanation of how wealth, consumption, and saving are related under different structural and institutional conditions.

3 METHODOLOGY OF WORK AND RESEARCH METHODS

3.1. Data

For the analysis in this thesis, we rely on three data sources: the Household Finance and Consumption Survey (HFCS), the Household Budget Survey (HBS), and Eurostat data.

We use Household Finance and Consumption Survey (HFCS) for testing H1 and H3. To compare household wealth, consumption, and savings across selected European regions, and to assess whether CE

differs from WSE in these dimensions (H1), we use microdata from the fourth HFCS wave (2021). The full 2021 dataset contains 83,162 household observations from 22 countries¹.

We adopt the following definition of Central Europe: it comprises the V4 countries, the Baltic States, Croatia, and Slovenia - a delineation that aligns with practices of institutions such as the European Bank for Reconstruction and Development and the Institute of International Relations in Prague. *The list of countries included by region is available in the dissertation thesis.*

We further use HFCS data to examine whether expectations about future real income are linked to household consumption behavior, measured by the MPC (H3). For this purpose, we rely on the 2021 HFCS wave (Wave 4) and, for robustness checks, the 2017 wave (Wave 3)². We restrict the sample to countries that (i) participated in both waves and (ii) report all variables required for the full specification, yielding 58,211 households across 18 countries³.

To examine household consumption dynamics in more detail in the case of Slovakia - and specifically to assess how regional differences are associated with consumption patterns, spending structures, and saving capacities (H2) - we draw on the HBS dataset. The data serves as the basis for constructing weights used in key macroeconomic indicators, including consumer price indices and national accounts aggregates (European Commission, Eurostat, n.d.).

We rely on microdata from the HBS provided by the Statistical Office of the Slovak Republic, covering the period 2004 to 2012, 2015, and 2020-2023. The final analytical dataset consists of 67,617 Slovak households. Because HBS does not include a panel component, it is not possible to track consumption patterns of the same households over time. The analysis is therefore based on repeated cross-sections. Descriptive statistics for the Slovak HBS sample are reported in Appendix of the dissertation thesis.

Slovakia is used as an analytically informative case of the CE household-wealth regime. The relevance of the Slovak case lies in the fact that it shares several structural characteristics with other V4 countries, Slovenia and Croatia that are central to the dimensions examined in this thesis. CE countries are associated with a post-socialist housing legacy, widespread owner-occupation and household balance sheets strongly centered on real estate. This pattern distinguishes the region from WSE economies. In the CE region, Eurostat (2025) reports some of the highest homeownership rates in the EU, reaching 93% in Slovakia, 92% in Hungary, and 91% in Croatia. Evidence from the HFCS further indicates that household portfolios are strongly concentrated in real estate, while participation in financial investment assets remains limited (Beckmann et al., 2019). These shared structural features suggest that findings from Slovakia may offer insights relevant to other CE countries with similar household balance-sheet structures, while remaining grounded in a country-specific case study.

We use Eurostat macroeconomic data from 2021 to support our analysis on the stylized facts for testing the wealth, consumption and savings of households in CE and WSE.

3.2. Variables and Measures

To test H1 regarding the difference in wealth, consumption, and savings between CE and WSE, we investigate the following household variables from HFCS: net wealth; net liquid and illiquid assets; mortgage and non-mortgage debt; nondurable consumption; value of savings, and net income expectations. Durable consumption is not available in HFCS data.

¹ Data from Finland and Luxembourg are excluded: Finland because it cannot be clearly classified as either Western or Southern Europe, and Luxembourg because it constitutes a substantial outlier in the sample. The remaining 20 countries are grouped into Central, Western, and Southern Europe.

² In previous waves, real income expectations and MPC were not part of the HFCS questionnaire.

³ The Czech Republic did not participate in HFCS 2017, and Estonia and Hungary lack the MPC variables; these countries are therefore excluded. Unlike in the descriptive, visualization-oriented sections, we retain Luxembourg in the regression sample to preserve cross-country coverage. Because identification relies on within-country variation with country fixed effects and survey weights, level differences that made Luxembourg an outlier in plots do not drive the estimates.

For the Slovak case study, we analyze household consumption classified by COICOP 1999 (H2). Consumption, wealth, savings, and income figures are adjusted for long-term time-series consistency⁴. Because the HBS does not provide a direct and sufficiently rich measure of household net wealth comparable to that available in the HFCS, household wealth position is approximated using two proxy variables. The first proxy is a categorical indicator of housing tenure, distinguishing between owners and renters. The second proxy is derived from expenditure on the purchase of a new or used vehicle. Households are grouped into a 2×2 wealth typology consisting of renters without a car purchase, renters with a car purchase, owners without a car purchase, and owners with a car purchase. This approach does not claim to reconstruct net wealth directly; rather, it creates a pragmatic classification that captures meaningful differences in durable asset ownership and housing status, both of which are closely associated with household economic position.

To test H3, our primary variable of interest is the MPC out of a hypothetical windfall gain. To measure this, the HFCS questionnaire presented households with the following scenario: *Imagine you unexpectedly receive money from a lottery, equal to the amount of income your household receives in a month. What percent would you spend over the next 12 months on goods and services, as opposed to any amount you would save for later or use to repay loans?* Respondents were asked to assign a value from 0 to 100 representing the percentage they would spend. The remaining portion (the balance up to 100) was understood to be allocated to saving, investing, or repaying debt.

We next examine whether expectations about future real income are associated with households' MPC. The expectations variable is constructed from the HFCS item asking respondents: *“Over the next year, do you expect your (household's) total income to go up more than prices, less than prices, or about the same as prices?”*

Responses are classified as optimistic (more than prices), pessimistic (less than prices), and neutral (about the same as prices). For descriptive analysis and figures, we rescale these categories to 1, -1, and 0, respectively, to place them on a centered, comparable scale and to permit averaging across households.

An important methodological consideration relates to the nature of the expectation variables. Since expectations are elicited through survey responses, they are inherently subjective and potentially affected by measurement error. Respondents may differ in how they interpret the survey question, in the information available to them, and in their tendency to report optimistic or pessimistic assessments. Consequently, the expectation variables may not represent pure forecasts of future income but may also reflect broader subjective perceptions of future economic conditions.

This has implications for the interpretation of the estimated coefficients. The coefficients on expectation variables should therefore be understood as capturing the association between the outcome variable and households' perceived future economic position, rather than the causal effect of objectively measurable expected income. In this sense, the variables combine both an informational component (expectations about future income) and a subjective component related to confidence or uncertainty.

Nevertheless, subjective income expectations are widely used in literature as informative measures of future income prospects, particularly in studies of consumption and income dynamics. For example, Jappelli and Pistaferri (2000) use subjective expectations to predict income growth without imposing a specific income process, while Jappelli and Pistaferri (2010) highlight the role of survey-based expectations as a valuable complement to realized income data in empirical analyses of household behavior.

We integrate a set of control variables, including household's assets and liabilities, income, socio-demographic characteristics⁵, country fixed effects or region fixed effects, and macroeconomic indicators.

⁴ Monetary values for the years 2004–2008, originally reported in Slovak Crown (SKK), were converted into euros using the official conversion rate of 1 EUR = 30.126 SKK. Since inflation dynamics varied considerably over the nearly two decades covered by the analysis, all nominal monetary variables were subsequently deflated and rebased to 2023 prices using a measure of continuous inflation. In addition, selected variables were adjusted between monthly and annual frequencies in order to ensure comparability across survey years and across households.

⁵ We also control for risk aversion using an HFCS variable capturing investment attitudes; however, this variable is not included in the model specifications presented in this thesis, as its effect is not statistically significant.

We use GDP growth, inflation, and unemployment rates from Eurostat to capture the macroeconomic context of each country. Variables of net wealth, total assets, total liabilities, and liquid financial resources were adjusted by the inverse hyperbolic sine (IHS) transformation. *The full list of control variables is available in the dissertation thesis.* Next section further describes our empirical strategy.

3.3. Empirical strategy

The empirical strategy follows a sequential structure. First, the dissertation examines whether household wealth, consumption, and saving patterns differ between CE and WSE. This step provides the cross-regional context for the analysis. Second, the dissertation narrows the focus to Slovakia as an illustrative CE case and examines whether consumption and saving patterns also differ systematically across household groups within one national setting. Third, the analysis turns to a more specific relation by testing whether subjective real income expectations are associated with the MPC out of a hypothetical temporary income gain, and whether this association differs between CE and WSE. In this way, the first two hypotheses establish the empirical heterogeneity that motivates the mechanism-oriented analysis under the third hypothesis.

To evaluate whether the distributions of wealth, consumption, and savings of households in CE are significantly lower than those in WSE (H1) and to assess heterogeneity in these outcomes through a country case study within CE (H2), the analysis employs a rank-based non-parametric comparison in the spirit of the Wilcoxon–Mann–Whitney test. This choice is motivated by the strong skewness, heavy upper tails, and non-normality that characterize household finance variables, particularly wealth and debt. Rather than comparing variables in their original units, the procedure compares their relative ranks in the pooled distribution, making the analysis less sensitive to extreme values. For H2, the analysis further relies on weighted descriptive statistics, joint tests of group differences, and selected pairwise comparisons across household groups defined by income, age, and wealth-related characteristics. Since H1 and H2 are formulated as overarching hypotheses, they are evaluated across a set of related indicators and group comparisons rather than through a single statistical test.

Because the HFCS and the HBS are complex surveys, all descriptive statistics and graphical comparisons are based on the appropriate household survey weights. This ensures that the estimates are representative of the underlying national populations and not unduly influenced by the sampling design.

Our empirical analysis aims to estimate the relationship between the MPC, and indirect inflation expectations measured by income expectations (H3). To do so, we estimate a baseline survey-weighted Ordinary Least Squares (OLS) regressions of the following form:

$$MPC_i = \alpha + \beta_1 \text{Income Expectations}_i + X_i' \gamma + \varepsilon_i \quad (11)$$

Where MPC_i represents the MPC of i -th household, $\text{Income Expectations}_i$ is a vector of indicators capturing expected real income growth and $X_i' \gamma$ is a vector of potentially confounding household and country-level characteristics, including household's assets and liabilities, socio-demographic characteristics, country or region fixed effects. We complement our analysis with country-specific macroeconomic indicators from Eurostat corresponding to the HFCS survey years (2017 and 2021), namely inflation, unemployment, and GDP growth. These indicators provide relevant macroeconomic context for differences in household financial behavior across countries and are reported in the dissertation thesis. Their inclusion is particularly important because household wealth accumulation, precautionary saving, and consumption behavior may be related not only to household-level characteristics but also to the broader macroeconomic environment.

We applied multiple imputation techniques ($m=5$). This approach accounts for uncertainty caused by item non-response and supports more reliable statistical inference. We note that failing to correct for non-response in econometric models can lead to substantial bias and reduced efficiency. Consequently, we adopted the protocols established by Little and Rubin (2002).

Furthermore, our methodology explicitly addresses the complex survey structure of the HFCS. We adjusted for primary sampling units (PSUs) and applied household probability weights to ensure population representativeness. Variance estimation was conducted using the Balanced Repeated Replication (BRR) method, incorporating the dataset's 1,000 replicate weights.

To assess the robustness of our baseline cross-sectional findings, we perform several additional checks: validating the results on alternative samples based on HFCS 2017 and on a sample divided by region (CE or WSE) and estimating dynamic adjustments using a first difference (FD) framework. Where repeated observations for the same households are available, we use the panel component of the survey data to estimate a first-difference model. This approach shifts the analytical focus from levels to changes by modeling whether changes in MPC categories are associated with changes in income expectations between waves. Specifically, we estimate a Multinomial Logistic Regression where the dependent variable captures whether the MPC decreased, increased, or remained stable. This specification accounts for unobserved time-invariant household characteristics, but it does not address all sources of potential endogeneity, particularly time-varying shocks. By differencing the data ($\Delta_{t,t-1}$) we difference out time-invariant unobserved household characteristics that may be correlated with both sentiment and spending behavior.

After outlining the theoretical background, defining the aims of the dissertation, and describing the methodological approaches, we proceed to present our findings. The following chapter therefore introduces the results of our research.

4 STRUCTURE OF THE DISSERTATION

The dissertation is structured as follows. Chapter 1 provides a comprehensive review of the theoretical literature on wealth, consumption, and saving, followed by a discussion of the empirical testing of the most influential theories. Chapter 2 outlines the objectives of the dissertation. Chapter 3 presents the data, methods, and methodological framework used in the analysis.

Chapter 4 reports the empirical results and evaluates the proposed hypotheses. The chapter is structured in three steps. First, the section 4.1 Stylized Facts of Household Wealth, Consumption, and Savings Patterns across CE, WSE provides a comparative overview of household wealth, consumption, and savings across the selected European regions. This comparison serves to identify whether Central Europe differs from Western and Southern Europe in these dimensions. Second, the section 4.2 Wealth, Consumption and Savings Dynamics in Slovakia: Case Study narrows the analysis to Slovakia and examines household consumption dynamics in greater detail. The focus is on how regional differences are reflected in household consumption decisions, expenditure structures, and saving possibilities. Third, section 4.3 Real Income Expectations and the MPC examines whether expectations about future real income are related to household consumption behavior, while taking regional specificities into account.

Together, these three sections provide a connected view of the wealth–consumption–saving relationship: the first identifies differences across regions, the second explores them in the Slovak case, and the third examines one possible mechanism behind household consumption behavior.

Chapter 5 discusses the findings in a broader interpretative context, and the final chapter concludes.

5 THE RESULTS OF THE WORK

5.1. Stylized Facts of Household Wealth, Consumption, and Savings Patterns across CE, WSE

To assess whether the relationship between wealth, consumption, and savings differs between CE and other European countries, i.e. WSE, it is first necessary to establish whether households in these regions operate under comparable structural conditions. This section therefore provides a cross-sectional comparative analysis based on data from the 2021 wave of the HFCS data.

In H1, we proposed that wealth, consumption, and savings of households in CE is statistically lower from that in WSE. The results provide strong support for this hypothesis. Across all main indicators, CE

households record lower values than the WSE benchmark. This applies to average net wealth, liquid and illiquid assets, mortgage liabilities, nondurable consumption, savings, and future income expectations. Taken together, the findings suggest that the CE–WSE gap is broad and multidimensional rather than limited to one single financial dimension.

The clearest difference appears in net wealth. All CE countries report lower average net wealth than the WSE median, often by more than €100,000, and the Wilcoxon–Mann–Whitney test indicates that this difference is statistically significant. This is consistent with the broader pattern described in the literature, where CE remains characterized by lower wealth per adult and weaker precautionary buffers (UBS Global Wealth Report, 2025; Eurostat, 2024). At the same time, CE appears not only poorer on average, but also somewhat less unequal around the middle of the wealth distribution. This suggests that the gap is visible beyond the upper tail of the WSE distribution and is also reflected in generally lower wealth holdings among ordinary households in CE.

The decomposition of wealth provides further insight into this result. In the case of liquid assets, all CE countries remain below the WSE median benchmark, and the estimated coefficient for WSE is positive and statistically significant. This matters because liquid wealth is the most accessible buffer against short-term financial shocks. Lower liquid asset holdings are consistent with weaker household resilience and may indicate more limited resources for self-insurance. This interpretation corresponds well with Eurostat evidence showing that some CE countries, especially Slovakia and Hungary, have more difficulty facing unexpected expenses (Eurostat, 2024).

The difference becomes even more pronounced for illiquid wealth, where all CE countries again fall below the WSE median and the deviations are much larger. Importantly, this is not inconsistent with the high homeownership rates observed in CE. As discussed earlier, high owner-occupation in the region is strongly linked to post-socialist housing privatization, which increased ownership but did not necessarily create high-value housing wealth (Beckmann et al., 2019). Illiquid wealth depends not only on whether households own property, but also on the quality, valuation, and composition of their real assets. Older housing stock, lower renovation rates, and lower market values may therefore explain why high homeownership in CE does not translate into equally high illiquid wealth (OECD, 2022; Eurostat, 2025).

On the debt side, the strongest difference concerns mortgage liabilities, which are substantially lower in CE than in WSE. Although lower debt may seem positive at first sight, in this context it is consistent with lower participation in mortgage-financed housing markets and potentially lower exposure to high-value real estate. In that sense, lower mortgage debt in CE should not be interpreted as a sign of stronger financial health, but rather as part of a broader pattern of lower mortgage-financed asset holdings. By contrast, non-mortgage debt shows a much less pronounced regional pattern. The differences are statistically significant, but relatively small, which suggests that the main CE–WSE divide appears more closely related to long-term asset holdings than to short-term borrowing.

The findings on nondurable consumption and savings support the same conclusion. All CE countries report lower average nondurable consumption than the WSE median, in some cases by more than €500 per month. This is consistent with lower current material living standards, although cross-country differences in prices and consumption structures should be also considered. Savings are also markedly lower in CE, with most countries substantially below the WSE benchmark. This is consistent with weaker financial buffers and may indicate a lower ability to absorb adverse income shocks. The result is in line with OECD data showing negative household savings rates in Slovakia and Poland in 2022 and with Eurostat evidence that the V4 average savings rate remains below that of the founding EU states (OECD, 2022; Eurostat, 2023).

Finally, the comparison of net income expectations adds an important forward-looking dimension. Most CE countries show lower expectation balances than the WSE median, suggesting less optimistic views about future net income. This is important because expectations are commonly associated with present financial behavior. More pessimistic expectations may be associated with more cautious behavior, but when current resources are already limited, they may also simply reflect long-term insecurity and constrained financial planning.

Overall, we do not have sufficient evidence to reject the H1. CE households differ from WSE households not only in the level of wealth, consumption, and savings, but also in the structure of their balance sheets and in their income expectations. For future research, it would be useful to examine more closely how historical institutional factors and subjective expectations interact in shaping household behavior. For policy makers, the findings suggest that improving household resilience in CE requires more than support for ownership alone. It may require stronger opportunities for liquid savings accumulation, better financial security, and conditions that support the accumulation of higher-value and higher-quality assets.

5.2. Wealth, Consumption and Savings Dynamics in Slovakia: Case Study

In H2, we assume that, within Slovakia consumption and saving patterns differ systematically across households' groups, particularly by income, age, and wealth-related characteristics. The results strongly support this hypothesis. Household expenditure in Slovakia differs significantly across income, wealth, and age groups. These differences are systematic and statistically robust, suggesting unequal consumption possibilities across households depending on their economic position and stage in the life cycle. The strongest differences appear across income groups. The poorest 20% of households spend around 60% of their income on food, beverages, and housing, while the richest 20% spend less than 40%. Housing is an especially important burden, accounting for almost one third of the poorest households' budgets but only 18% among the richest. By contrast, spending on transport, recreation, miscellaneous goods and services, and other durable and non-durable categories rises with income. This pattern is fully consistent with Engel's law and also aligns with the LCH and PIH, which implies that higher-income households can devote a larger share of expenditure to discretionary categories. The statistical results indicate that spending structures differ significantly across income groups, with all higher quintile differing strongly from the poorest group.

Consumption heterogeneity is also visible across wealth-related groups, approximated by housing tenure and vehicle-purchase status. Households with weaker economic positions allocate a larger share of their budgets to necessities. Renters, especially those without a car, face the highest housing burden, while homeowners show significant differences across all measured consumption categories compared to the baseline renter group. The findings suggest that housing tenure is more strongly associated with consumption than vehicle ownership. Car ownership is related to higher transport spending, but it does not create equally consistent differences in core necessities such as food and housing. In the Slovak context, this implies that access to owner-occupied housing is closely associated with expenditure patterns and may be related to greater financial flexibility.

The age profile of consumption provides further support for H2. Most categories follow the expected hump-shaped pattern predicted by life-cycle theory. Spending on food, transport, recreation, and restaurants is highest during the prime earning and child-rearing years, roughly between ages 30 and 50, and declines after retirement. This suggests that Slovak household consumption broadly follows standard life-cycle models. At the same time, one category clearly diverges from this pattern: health expenditure rises steadily with age and becomes much more important in later life. This is consistent with different expenditure composition in later life, where health-related spending accounts for a larger role relative to discretionary and mobility-related categories.

The savings results deepen this interpretation. The lowest income quintile shows a negative mean savings rate of - 8.5 %, which suggests dissaving and may indicate reliance on debt, transfers, or previously accumulated assets. Savings rise significantly with each higher income group, reaching 27.1 % among the richest 20 %. This steep gradient points to a substantial difference in saving capacity across income groups and may contribute to the persistence or widening of wealth inequality over time, although the analysis does not directly estimate wealth dynamics. Housing tenure also matters homeowners without a car record a significantly higher savings rate than renters, while differences between renters with and without a car are not statistically significant. This again indicates that housing tenure is more strongly associated with saving-rate differences than vehicle-purchase status. Across age groups, the evidence broadly supports the LCH,

but the main structural break occurs at retirement, when saving rates are lower among retirement-age cohorts, a pattern consistent with the replacement of labor income by pensions.

Overall, we do not have sufficient evidence to reject the H2. Consumption heterogeneity in Slovakia is systematic across income, wealth, and age groups. The Slovak case study remains descriptive and should not be interpreted as identifying the determinants of household consumption and saving behavior. Its role is to provide an illustrative within-country perspective on systematic household heterogeneity in a CE setting. For future research, it would be useful to study whether these inequalities become even stronger during periods of inflation or housing-cost pressure. For policy makers, the results suggest that universal measures may affect households very differently. In this context, support targeted at housing affordability, low-income households, and saving capacity around retirement may be especially relevant for reducing structural inequalities in consumption.

5.3. Real Income Expectations and the MPC

Having documented regional differences in wealth and internal heterogeneity in consumption patterns, this final section investigates the association between real income expectations and the MPC across 18 European countries. Specifically, it examines forward-looking household behavior by analyzing real income expectations and MPC using a sample from the 2017 and 2021 waves of the HFCS. Building on the disparities identified in the previous sections, this analysis examines whether the association between income expectations and MPC differs across households with different wealth, liquidity, and demographic characteristics.

Table 1 presents the descriptive statistics for the estimation sample, which consists of 58, 211 observations. The average MPC is 43, meaning that households report that they would spend, on average, 43 % of a hypothetical one-month income windfall over the following 12 months. According to Figure 16, most MPC responses fall to categories 0, 50 and 100. This distribution is consistent with substantial heterogeneity in reported spending responses and suggests that many households do not report full smoothing of the hypothetical windfall. This reflects average total assets of €328,795 and liabilities among debtholders of €77,670. Average household in our sample holds €80,434 in liquid financial resources.

Table 1 Descriptive statistics of the estimation sample

Variable	Obs.	Mean	SD	Min	Max
MPC	58 211	43.00	35.7	0	100
Real Income Expectations	58 211	2.32	0.6	1	3
Net wealth	58 211	295 618.00	4 590.20	-4 590 000	1 060 000 000
Total assets	58 211	328 795.40	4 690.60	0	1 060 000 000
Total liabilities	25 657	77 669.69	1590.70	0	16 600 000
Liquid financial resources ⁶ (<i>Net financial wealth + Income</i>)	58 211	80 434.81	1796.82	-16 300 000	959 000 000

Note: The observation count for total liabilities is significantly lower (N=25,657) due to missing data that could not be reliably imputed; therefore, debt statistics reflect a reduced subsample.

Regarding economic sentiment, income expectations are generally guarded; most households are either neutral (45.46 %) or pessimistic (40.80 %) about their future income, with only 13.74 % expressing optimism. Finally, the classification of Hand-to-Mouth (HtM) households highlights important

⁶ Net financial wealth accounts for 25 % of liquid financial resources, while 75 % comes from household income.

heterogeneity in liquidity. While 72.20 % of households are non-HtM (possessing sufficient liquid buffers), nearly 28 % of the sample lives hand-to-mouth. This group is split between the poor HtM (8.84 %), who have limited liquid and illiquid assets by definition, and the wealthy HtM (18.96 %). The second group is particularly relevant because these households hold illiquid assets, such as housing, but have limited liquid resources. This profile is often associated with relatively high MPCs despite higher net wealth. The distribution of the poor, wealthy and non-HtM households in our sample closely mirrors the findings of Cherchye et al. (2024), in their study of Belgian households, who report a HtM share of approximately 25 %.

In Table 2, our baseline results reveal a statistically significant negative correlation between optimistic income expectations and the MPC. Specifically, compared with households with neutral expectations, households expecting their future income to outpace inflation report that they would spend a significantly smaller share of a hypothetical windfall. This relationship remains robust across multiple model specifications.

One possible interpretation is that optimistic expectations may be associated with greater perceived financial security or a lower need for immediate consumption. By reporting a lower propensity to spend the windfall, optimistic households display behavior more consistent with consumption smoothing or saving-oriented responses, in line with the framework discussed by Attanasio, Kovacs, and Molnar (2020). Relative to neutral households, optimistic households report behavior that is more consistent with saving or asset-building responses than with immediate consumption.

Furthermore, these results complement the findings of Kosar and Melcangi (2025). Although they document that higher subjective uncertainty is associated with a higher MPC, our results show that positive income expectations are associated with a lower MPC relative to the neutral baseline. This finding is consistent with the interpretation that households with more positive expectations may have less need to allocate unexpected liquidity to immediate consumption, although perceived downside risk is not directly identified in the baseline model. At the same time, alternative explanations such as omitted household characteristics, measurement error in subjective expectations, or sentiment-related reporting differences cannot be excluded.

In contrast, the coefficient for pessimistic households, defined as those expecting income to lag behind prices, is not statistically significant in the cross-sectional baseline. This could reflect the conflicting behavioral motives identified by Georgarakos et al. (2024): a tension between the hand-to-mouth pressure to spend due to financial strain and the precautionary motive to save against future decline (the negative real income channel described by Masek, 2026).

Table 2 Regression Results – Net Wealth - Full sample (2021)

	(1) MPC	(2) MPC	(3) MPC	(4) MPC	(5) MPC	(6) MPC
Real Income Expectations						
More Than Prices (Base: About the Same)	-5.529*** (0.990)	-5.481*** (0.990)	-3.612*** (0.992)	-3.546*** (0.993)	-2.327* (0.993)	-2.425* (0.983)
Less Than Prices (Base: About the Same)	0.791 (0.768)	0.808 (0.767)	0.741 (0.770)	0.502 (0.773)	-0.853 (0.772)	-1.135 (0.782)
Assets						
Net Wealth (IHS transformed)		0.055 (0.085)	-0.060 (0.088)	-0.055 (0.088)	-0.056 (0.089)	-0.044 (0.087)

Socio-demographic characteristics	NO	NO	YES	YES	YES	YES
Country fixed effects	NO	NO	NO	NO	YES	NO
Region fixed effects CE (Base: WSE)	NO	NO	NO	8.480*** (0.734)	NO	NO
Macroeconomic indicators	NO	NO	NO	NO	NO	YES
_cons	43.498*** (0.522)	42.874*** (1.114)	19.166*** (3.674)	19.286*** (3.669)	21.755*** (3.717)	7.034 (3.799)
Observations	58,211	58,211	58,211	58,211	58,211	58,211

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

When accounting for households' assets and liabilities (Table 3), the relationship between real income expectations and the MPC remains unchanged. Furthermore, we find a significant negative relationship between total liabilities and the MPC. Heavily indebted households report a lower propensity to spend the windfall, which is consistent with greater attention to debt repayment. This behavior mirrors the empirical regularities observed by Coibion et al. (2020) regarding the 2020 CARES Act, where debt repayment absorbed a substantial share (approx. 30%) of transfers, effectively lowering the immediate MPC.

Table 3 Regression Results – Total Assets and Liabilities – Full sample (2021)

	(1) MPC	(2) MPC	(3) MPC	(4) MPC	(5) MPC	(6) MPC
Real Income Expectations						
More Than Prices (Base: About the Same)	-3.906** (1.351)	-3.744** (1.351)	-2.679* (1.352)	-2.645 (1.354)	-0.969 (1.349)	-1.295 (1.331)
Less Than Prices (Base: About the Same)	1.472 (1.238)	1.450 (1.222)	1.558 (1.216)	1.451 (1.222)	-1.116 (1.231)	-1.308 (1.190)
Assets and Liabilities						
Total Assets (IHS Transformed)		-0.039 (0.351)	-0.481 (0.359)	-0.474 (0.359)	-0.314 (0.354)	-0.325 (0.349)
Total Liabilities (IHS Transformed)		-1.070*** (0.308)	-1.009** (0.323)	-0.956** (0.327)	-0.380 (0.331)	-0.713* (0.317)

Socio-demographic characteristics	NO	NO	YES	YES	YES	YES
Country fixed effects	NO	NO	NO	NO	YES	NO
Region fixed effects	NO	NO	NO	5.087*** (1.373)	NO	NO
CE (Base: WSE)	NO	NO	NO		NO	YES
Macroeconomic indicators				NO		
_cons	40.448*** (0.777)	52.286*** (4.089)	27.774** (8.164)	27.376*** (8.190)	36.918*** (8.145)	5.377 (8.040)
Observations	25,657	25,657	25,657	25,657	25,657	25,657

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

To examine whether the relationship between expectations and the MPC is robust to liquidity status, we include the Hand-to-Mouth (HtM) classification in Table 4. Consistent with the Stoltenberg and Uhlenborff (2022) and Jappelli and Pistaferri (2014), we find that poor HtM households exhibit a dramatically higher MPC compared to non-HtM households. This pattern is consistent with the TANK framework discussed by Masek (2026) and Bilbiie (2008), in which constrained agents are modeled as having a high sensitivity of consumption to current income, distinct from the behavior of optimizing unconstrained households. This is consistent with the interpretation that households with limited liquid buffers may report higher spending responses because they have fewer resources available to smooth consumption.

Interestingly, wealthy HtM households, defined as those with illiquid assets but limited liquid resources, do not show a statistically significant difference from non-HtM households. This may indicate that the relationship between illiquid wealth and reported MPC differs from the relationship between liquid constraints and MPC, although the underlying relation cannot be identified from this specification. These results suggest that the association between optimistic expectations and the MPC is not fully accounted for by liquidity status. While standard theory suggests that high-MPC behavior is driven primarily by those who cannot smooth consumption (the constrained), our results show that subjective expectations are associated with low-MPC behavior among those who can. Optimism remains independently associated with the MPC after controlling for assets, liabilities, and liquidity status. This is consistent with a separate expectations-related association, although the analysis does not directly measure patience or identify a behavioral channel. This association appears distinct from differences in household balance-sheet positions captured by assets and liabilities.

Table 4 Regression Results – Hand-to-Mouth Households – Full sample (2021)

	(1) MPC	(2) MPC	(3) MPC	(4) MPC	(5) MPC	(6) MPC
Real Income Expectations						
More Than Prices (Base: About the Same)	-5.529*** (0.990)	-5.687*** (0.987)	-3.680*** (0.987)	-3.589*** (0.989)	-2.385* (0.989)	-2.524** (0.980)

Less Than Prices (Base: About the Same)	0.791 (0.768)	0.728 (0.762)	0.690 (0.764)	0.460 (0.768)	-0.892 (0.802)	-1.178 (0.774)
Hand-to-mouth (HtM) households						
Poor HtM (Base: Non HtM)		4.689** (1.450)	5.875*** (1.495)	5.736*** (1.497)	5.518*** (1.487)	5.641*** (1.476)
Wealthy HtM (Base: Non HtM)		-0.066 (0.921)	0.678 (0.931)	0.230 (0.945)	0.488 (0.941)	0.941 (0.936)
Socio-demographic characteristics	NO	NO	YES	YES	YES	YES
Country fixed effects	NO	NO	NO	NO	YES	NO
Region fixed effects	NO	NO	NO	8.424*** (0.770)	NO	NO
CE (Base: WSE)						
Macroeconomic indicators	NO	NO	NO	NO	NO	YES
_cons	43.498*** (0.522)	43.143*** (0.567)	17.402*** (3.592)	17.649*** (3.589)	20.187*** (3.644)	5.192 (3.725)
Observations	58,211	58,211	58,211	58,211	58,211	58,211

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

When liquid financial resources are included as a control variable in Table 5, instead of illiquid wealth or the HtM criterion, optimistic expectations remain negatively associated with the MPC. Liquid financial resources are statistically significantly positively related to MPC.

Table 5 Regression Results – Liquid Financial Resources – Full sample (2021)

	(1) MPC	(2) MPC	(3) MPC	(4) MPC	(5) MPC	(6) MPC
Real Income Expectations						
More Than Prices (Base: About the Same)	-5.529*** (0.990)	-4.795*** (0.997)	-3.301*** (0.998)	-3.242** (0.999)	-2.228* (0.998)	-2.252* (0.991)

Less Than Prices (Base: About the Same)	0.791 (0.768)	0.746 (0.763)	0.700 (0.768)	0.465 (0.770)	-0.839 (0.809)	-1.083 (0.781)
Liquid Financial Resources (financial wealth + income; IHS transformed)		0.303*** (0.036)	0.241*** (0.038)	0.238*** (0.037)	0.123** (0.039)	0.171*** (0.038)
Socio-demographic characteristics	NO	NO	YES	YES	YES	YES
Country fixed effects	NO	NO	NO	NO	YES	NO
Region fixed effects	NO	NO	NO	8.358*** (0.732)	NO	NO
CE (Base: WSE)						
Macroeconomic indicators	NO	NO	NO	NO	NO	YES
_cons	43.498*** (0.522)	40.900*** (0.587)	17.971*** (3.651)	18.162*** (3.648)	20.737*** (3.737)	6.192 (3.787)
Observations	58,211	58,211	58,211	58,211	58,211	58,211

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In the main empirical specification (Table 5), the variable *liquid financial resources* is constructed as the sum of net financial assets and total household income. While this aggregate measure captures the overall financial resources available to the household, it combines two conceptually distinct components: a stock measure of accumulated financial wealth and a flow measure of current income. To address this distinction, we report a supplementary specification in which these two components are included separately (in the dissertation in Appendix). The sample was also divided according to the median of household income, which allows the analysis to distinguish between households below and above the median income level.

As shown in the dissertation thesis in Appendix, the coefficient of the main explanatory variable retains the same sign and remains comparable to the baseline estimates after separating net financial assets from household income. The results are also consistent across the two income subsamples. Overall, this additional evidence indicates that the main empirical conclusion is not sensitive to the particular construction of the aggregate liquid financial resources variable.

Across all model specifications, the estimated coefficient for optimistic expectations ranges from approximately 5 to 8.5 percentage points in absolute value, indicating a robust and economically meaningful association with the MPC. This relationship remains stable when sequentially controlling for net wealth, total assets and liabilities, hand-to-mouth (HtM) household status, and liquid financial resources.

4.3.1. Regional analysis

We further divide the HFCS 2021 dataset into two regional subsamples. All model specifications are estimated separately for CE and WSE. The CE subsample contains 7,391 observations, whereas the WSE subsample is considerably larger, with 50,820 observations (for specifications excluding net wealth). This substantial difference in sample size naturally affects the statistical significance of the estimated coefficients, particularly in the CE models. In this section, we do not include country fixed effects, as each subsample already restricts the analysis to a specific set of countries within a given region.

Across all specifications (including the 2017 subsample in Appendix), we find a positive and statistically significant relationship (at the 1 % level) between the CE region and the MPC. Specifically, households in CE countries exhibit a higher MPC out of hypothetical windfall gains compared to their Western Europe counterparts. These findings highlight substantial heterogeneity in consumer behavior across European regions. Furthermore, the empirical results indicate that households in the CE region exhibit a consistently higher MPC compared to households in WSE.

The results shown in the dissertation align closely with the patterns documented in the previous sections. Across both regional samples, we observe a statistically significant negative association between optimistic income expectations and the MPC. Relative to the baseline group of households with neutral expectations - those anticipating their income to grow at the same pace as prices - households expecting their real income to increase consume a smaller share of a hypothetical windfall. This relationship persists across all estimated specifications, underscoring the robustness of the finding.

The regional dimension of the analysis complements this interpretation. In all specifications including regional effects, the CE dummy is positive and statistically significant, indicating that households in CE tend to report higher MPC than households in WSE. This finding fits well with the broader results discussed under H1, where CE households were shown to hold lower wealth, lower liquid assets, and weaker savings buffers than households in WSE. Taken together, these findings suggest that temporary liquidity may be more closely associated with reported spending responses in CE, where households appear to have fewer financial buffers available for consumption smoothing. In this respect, the results are also consistent with the broader theoretical perspective presented in Chapter 1, including approaches that emphasize household heterogeneity, liquidity constraints, and the unequal transmission of shocks across household types. At the same time, the separate regional regressions should not be overstated. Although the coefficient for optimistic households remains negative in both regional samples, the smaller CE sample means that any direct comparison of coefficient size or statistical strength should be treated cautiously. For that reason, the present evidence is stronger for the claim that expectations matter for MPC and that CE households have a higher MPC on average than for any stronger claim about precisely how much the expectation-MPC relationship differs across regions.

5.3.2. Robustness analysis

To assess the robustness of our results, we conduct a batteries of robustness checks. First, we replicate the analysis on the 2017 data, retaining the same five model specifications and the four alternative definitions for assets and liabilities (net wealth, total assets and total liabilities, hand-to-mouth definition of households, and liquid financial resources included in models). Second, to assess whether the findings are sensitive by sample composition due to data availability, we re-estimate the baseline net wealth models restricted to the smaller subsample where total liabilities are observed (N=25,657). Third, we test the robustness of our findings by discretizing the MPC variable from a 0-100 range into categorical bins and by conducting quantile regressions. Finally, we examine changes in reported MPC using a first difference (FD) framework. Details are available in the dissertation thesis.

6 CONCLUSION

In this dissertation, we evaluated the links between household wealth, consumption and savings in the CE region and identified differences in household decisions about consumption and savings based on differences and changes in wealth. CE region is an intriguing and complex area for studying household wealth, consumption, and savings.

We rely on data from two surveys, HFCS and HBS, and these are supported by selected macroeconomic indicators from Eurostat. A comprehensive graphical analysis including tests, e.g. The Wilcoxon–Mann–Whitney test was conducted. Following on that, we used OLS method in our regression analysis with multiple robustness checks.

We found out that wealth, consumption, and savings in CE differ from those in WSE, partly due to differences in wealth composition and income expectations. Across all studied indicators, such as average net wealth, liquid and illiquid assets, mortgage and non-mortgage liabilities, nondurable consumption, savings, and future income expectations, CE households record lower values than the WSE median benchmark. Our findings suggest that the CE–WSE gap is broad and multidimensional rather than limited to one single financial dimension.

CE households differ from WSE households not only in the level of wealth, consumption, and savings, but also in the structure of their balance sheets and in their income expectations. Within our case country - Slovakia, consumption heterogeneity is systematic across all household groups. Household expenditure differs significantly across income, wealth, and age groups. These differences are systematic and statistically robust, suggesting unequal consumption possibilities depending on their economic position and stage in the life cycle. Consumption heterogeneity is systematic across income, wealth-related, and age groups, and is visible in both expenditure structure and saving behavior.

When examining the relationship between future conditions expectations and MPC, we see that income expectations are significantly related to the MPC. The baseline estimates reveal a statistically significant negative relationship between optimistic real income expectations and the MPC. Relative to households expecting income to rise broadly at the same rate as prices, households expecting their future income to outpace inflation report a lower willingness to spend out of a hypothetical windfall. If the expectations variable is interpreted as a signal of higher expected permanent income, one could intuitively expect the opposite sign. Under the standard intertemporal framework, households anticipating stronger real income growth may perceive their lifetime resources more favorably and therefore choose a higher level of current consumption. However, this apparent contradiction becomes much weaker once a distinction is made between the desired level of current consumption and the MPC out of a temporary windfall. These are not the same object under the LCH/PIH framework. A household may expect higher permanent income and therefore choose a higher overall consumption path, while at the same time showing a lower tendency to spend an additional one-off income gain immediately. In all specifications including regional effects, the CE dummy is positive and statistically significant, which implies that households in CE tend to have a higher MPC than households in WSE. These findings relate to understudied topic of real income expectations and MPC, mentioned e.g. by Kosar & Melcangi (2025). Nevertheless, this finding should be interpreted cautiously, as the negative association between optimistic expectations and MPC remains partly an empirical puzzle and may also reflect unobserved household characteristics or measurement issues related to subjective expectations.

Despite these contributions, several limitations must be acknowledged. First, the data employed are cross-sectional, which restricts our analysis to establishing conditional correlations rather than strict causality. We cannot rule out endogeneity: unobserved household characteristics (e.g., time preferences, risk aversion, financial literacy, etc.) may jointly shape both optimism about income and consumption/saving behavior. Second, while hypothetical windfall questions are standard in literature, self-reported intentions may diverge from actual behavior following real cash transfers, raising concerns about external validity. Self-reported subjective expectations regarding future income development might be potentially noisy and cause measurement error. Third, given the 12-month framing of the windfall question, we cannot conclusively establish whether respondents perceive the shock as temporary or closer to permanent; this

distinction matters under LCH/PIH and could modestly dampen the MPC-expectations estimates. Accordingly, our results should be read as correlational and as suggestive evidence consistent with the proposed theoretical interpretation rather than as causal effects. Additionally, the Slovak case study is subject to the limitations associated with single-country evidence, and the findings should be understood as illustrative. Its purpose is not to suggest that Slovakia mirrors the regional average across all dimensions, especially given differences in monetary regimes across CE countries. Rather, Slovakia can be interpreted as an intensive case of the housing-centered wealth structure observed across the region. We are also aware of the inability to disentangle age effects from cohort effects.

To strengthen identification, future research should use panel or cohort-based pseudo-panel designs to track households over time and separate within-household dynamics from composition effects; exploit natural experiments and policy variation, via difference-in-differences or synthetic control; and deploy instrumental variables to isolate causal pathways from expectations and liquidity to MPC.

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Summary

The results of the dissertation indicate that income expectations are significantly related to the MPC, and they also show that CE households tend to exhibit a higher MPC than households in WSE. At the same time, the interpretation of these results requires some caution, both for theoretical and methodological reasons. The baseline estimates reveal a statistically significant negative association between optimistic real income expectations and the MPC. Relative to households expecting income to rise broadly at the same rate as prices, households expecting their future income to outpace inflation report a lower willingness to spend out of a hypothetical windfall. This pattern remains robust across alternative specifications using net wealth, total assets and liabilities, hand-to-mouth status, and liquid financial resources. Moreover, robustness checks based on the HFCS 2017 wave point in the same general direction. Separate regressions estimated for the CE and WSE subsamples also preserve the negative coefficient for optimistic households. However, these regional estimates should be interpreted carefully, since the CE subsample is considerably smaller than the WSE subsample, which limits the precision of the comparison.

The negative sign of the coefficient deserves closer discussion, because at first sight it may appear difficult to reconcile with the LCH and the PIH. If the expectations variable is interpreted as a signal of higher expected permanent income, one could intuitively expect the opposite sign. Under the standard intertemporal framework, households anticipating stronger real income growth may perceive their lifetime resources more favorably and therefore choose a higher level of current consumption. However, this apparent contradiction becomes much weaker once a distinction is made between the desired level of current consumption and the MPC out of a temporary windfall. These are not the same object under the LCH/PIH framework. A household may expect higher permanent income and therefore choose a higher overall consumption path, while at the same time showing a lower tendency to spend an additional one-off income gain immediately. In this sense, a higher expected permanent income does not automatically imply a higher MPC from a transitory shock.

This distinction is essential for the interpretation of the results. The dependent variable in the present analysis is not the level of current expenditure, but the share of a hypothetical temporary windfall that households would consume. Within the LCH/PIH framework, temporary income shocks are expected to be associated with only limited changes in consumption for households that are forward-looking and not strongly constrained, because their spending decisions are based mainly on expected lifetime resources rather than on short-term liquidity fluctuations. Optimistic households may therefore already be closer to their preferred consumption path and may have less need to use temporary liquidity for immediate spending. Instead, they may be more likely to save the windfall, use it for balance-sheet adjustment, or spread it over a longer horizon. Interpreted in this way, the negative coefficient is not necessarily inconsistent with the theoretical framework presented in Chapter 1. Rather, it suggests that optimistic households may also be more financially secure or less liquidity constrained, however, the analysis does not directly identify these mechanisms. However, the negative association between optimistic expectations and the MPC should still be treated cautiously, as it remains partly an empirical puzzle rather than a direct prediction of the standard LCH/PIH framework. The analysis does not directly identify the underlying mechanisms, and alternative explanations, such as omitted household characteristics, measurement error in subjective expectations, sentiment-related reporting differences, or other unobserved dimensions of financial resilience, cannot be rejected. This possible interpretation is also consistent with Attanasio, Kovacs, and Molnar (2020), who emphasize that financially stronger households are better able to protect their consumption path and do not need to translate temporary liquidity gains directly into current expenditure.

The result can also be viewed in relation to the literature on uncertainty and heterogeneity. While Kosar and Melcangi (2025) document that higher subjective uncertainty is associated with a higher MPC, the present results suggest that optimistic expectations are associated with a lower MPC relative to the neutral baseline. This inverse pattern is economically plausible. Households with more favorable expectations may be less likely to report converting temporary income gains into immediate consumption, possibly because they perceive lower downside risk.

Conversely, the absence of a statistically significant effect for pessimistic households is also meaningful. In the cross-sectional baseline, households expecting income to lag behind prices do not differ significantly from the neutral group. One possible explanation is that pessimistic expectations are associated with offsetting tendencies. On the one hand, weaker income prospects may increase the pressure to spend a windfall because current resources are tight. On the other hand, negative expectations may strengthen the precautionary motive to save, as households prepare for future deterioration. This tension is in line with the mechanisms discussed by Georgarakos et al. (2024) and with the negative real income channel described by Masek (2026). If both forces operate simultaneously, the average effect may become statistically weak or insignificant.

We do not have sufficient evidence to reject H3. The findings suggest that subjective income expectations are an important correlate of MPC, but that their role should be interpreted together with household financial conditions, liquidity constraints, and the regional environment in which consumption decisions are made. For future research, it would be useful to examine more directly whether the effect of income expectations on MPC differs systematically between CE and WSE, for example through interaction terms, more balanced regional samples, or panel approaches that can distinguish more clearly between expected permanent income, temporary sentiment, and uncertainty. For policy makers, the results imply that temporary support measures may generate different consumption responses depending not only on households' objective financial position, but also on how secure they feel about their future income. This is particularly relevant in CE, where weaker balance sheets appear to be associated with a stronger consumption response to temporary liquidity.

Extended abstract in the Slovak language

Táto dizertačná práca skúma vzťahy medzi bohatstvom domácností, spotrebou a úsporami v strednej Európe (CE) v komparatívnom rámci s krajinami západnej a južnej Európy (WSE). Hoci sú tieto ekonomické koncepty kľúčové pre pochopenie blahobytu a finančnej odolnosti, stredoeurópsky región si vyžaduje špecifickú pozornosť z dôvodu odlišného vývoja. Domácnosti v CE disponujú výrazne nižšou úrovňou bohatstva a slabšími preventívnymi finančnými rezervami v porovnaní s domácnosťami vo WSE. Priemerné bohatstvo na dospelého obyvateľa v strednej Európe zostáva dlhodobo pod úrovňami pozorovanými v západnej a južnej Európe (UBS Global Wealth Report 2025). Tento majetkový rozdiel nie je dôležitý len z hľadiska merania nerovnosti, ale predovšetkým preto, že nižšia celková úroveň bohatstva so sebou prináša zníženú kapacitu domácností vyhladzovať svoju spotrebu v prípadoch príjmových šokov, inflácie alebo neočakávaných výdavkov. Dáta týkajúce sa neschopnosti domácností pokryť nepredvídané finančné výdavky ukazujú, že viaceré krajiny CE naďalej čelia značným problémom pri absorbovaní finančných šokov (Eurostat, 2024). Zároveň však tieto údaje poukazujú na značnú vnútornú heterogenitu samotného stredoeurópskeho regiónu, čo znamená, že ho nemožno vnímať ako jeden homogénny blok a analýza vnútorných rozdielov je rovnako dôležitá ako jeho porovnanie so západnou Európou.

Pretrvávajúce rozdiely v spotrebe naprieč Európou ďalej potvrdzujú dôležitosť tohto výskumu, keďže v mnohých krajinách EÚ sú priemerné spotrebné výdavky v najvyššom príjmovom kvintile viac ako dvakrát vyššie v porovnaní s najnižším kvintilom (Eurostat, 2024). Správanie v oblasti úspor v CE zároveň signalizuje zvýšenú zraniteľnosť obyvateľstva. Negatívne miery úspor domácností pozorované v krajinách ako Slovensko a Poľsko zdôrazňujú krehkosť ich financií a obmedzenú schopnosť budovať si rezervy proti makroekonomickej nestabilite (OECD, 2022). Aj v krajinách s pozitívnou mierou úspor zostáva priemer za krajiny Vyšehradskej štvorky pod úrovňou zakladajúcich členských štátov EÚ. Zásadným špecifikom regiónu CE je samotné zloženie bohatstva domácností, ktoré sa vyznačuje vysokou mierou vlastníctva nehnuteľností. Tento stav úzko súvisí s postsocialistickou privatizáciou štátneho bytového fondu, ktorý bol prevedený do súkromných rúk často za zvýhodnené ceny (Beckmann a kol., 2019). Bytový fond v mnohých krajinách CE je však v priemere starší, menej renovovaný a v nižšej kvalite v porovnaní so západnou Európou, čo priamo znižuje hodnotu tohto majetku (OECD, 2022). Domácnosti vo WSE majú navyše lepší prístup k iným formám nelikvidného bohatstva, ako sú sekundárne nehnuteľnosti alebo podnikové aktíva.

Výsledkom je, že zdanlivo podobné miery vlastníctva môžu maskovať zásadné rozdiely v kompozícii, kvalite a likvidite aktív.

Napriek týmto identifikovaným štrukturálnym odlišnostiam existujúca literatúra doteraz neposkytla systematické porovnanie krajín WSE a CE z hľadiska bohatstva, spotreby a úspor. Predchádzajúce empirické štúdie sa zameriavali predovšetkým na medzinárodnú heterogenitu v rámci širšieho európskeho kontextu alebo v rámci menovej únie (Le Blanc a kol., 2016; Arrondel a kol., 2016). Ďalšie práce preukázali významné rozdiely vo finančnej zraniteľnosti domácností (Ampudia a kol., 2016) alebo v správaní pri sporení v regióne strednej, východnej a juhovýchodnej Európy (Beckmann a kol., 2013), avšak nevenovali sa explicitnému vyhodnoteniu rozdielov strednej Európy voči západnej a južnej Európe. Táto dizertačná práca si preto kladie za cieľ zaplniť túto medzeru a odpovedať na otázky týkajúce sa rozdielov v distribučných vzorcoch bohatstva, spotreby a sporenia medzi oboma regiónmi. Práca ďalej skúma variabilitu zloženia spotreby medzi skupinami slovenských domácností a analyzuje, do akej miery obmedzenia likvidity a štruktúra aktív súvisia so vzťahom medzi príjmovými očakávaniami a hraničným sklonom k spotrebe (MPC).

Empirická časť práce sa opiera o tri komplementárne dátové zdroje. Využíva mikroúdaje z tretej vlny (2017) a štvrtej vlny (2021) Zisťovania o financiách a spotrebe domácností (HFCs). Na detailnú analýzu spotrebného správania aplikuje dáta zo Štatistiky rodinných účtov (HBS) v dlhodobom horizonte rokov 2004 až 2023. Tieto primárne súbory údajov sú doplnené o makroekonomické ukazovatele z databáz Eurostatu, čo dovoľuje zasadiť mikroekonomické správanie domácností do širšieho hospodárskeho kontextu. Táto metodologická kombinácia dát umožňuje rigorózne porovnávať správanie domácností medzi jednotlivými krajinami a súbežne analyzovať vnútroštátnu heterogenitu.

Výsledky analýzy potvrdzujú existenciu pretrvávajúcej priepasti vo finančnom správaní domácností medzi regiónmi CE a WSE naprieč sériou indikátorov zahŕňajúcich čisté bohatstvo, výdavky na spotrebu a tvorbu úspor. Prípadová štúdia Slovenskej republiky, využitá ako ilustračný príklad krajiny CE, identifikuje vzorce spotreby a úspor počas životného cyklu, ktoré sú vo všeobecnosti konzistentné s hypotézou životného cyklu (LCH) a hypotézou permanentného príjmu (PIH). Kvantitatívne výsledky však jasne poukazujú aj na významné odchýlky od štandardného teoretického rámca vyhladzovania spotreby. Ekonometrická analýza preukazuje, že subjektívne očakávania reálneho príjmu systematicky súvisia s úrovňou MPC, a že samotný indikátor MPC je v regióne CE štatisticky významne vyšší ako vo WSE. Týmto práca priamo prispieva k rozvíjajúcej sa oblasti literatúry zameranej na prienik subjektívnych očakávaní a spotrebného správania, ktorej sa v súčasnosti venuje len obmedzený počet publikácií (Kosar a Melcangi, 2025).

Hlavný prínos dizertačnej práce spočíva v troch teoretických a empirických rovinách. Po prvé, práca prináša detailné komparatívne zhodnotenie finančných vzorcov v strednej a západnej Európe. Keďže domácnosti v CE vykazujú systematicky nižšie hodnoty čistého bohatstva a limitovanejší prístup k likvidným aktívam, závery potvrdzujú ich vyššiu ekonomickú zraniteľnosť voči externým šokom. Po druhé, práca rozširuje poznatky o vplyve subjektívnych očakávaní na hraničný sklon k spotrebe plynúci z dočasného zvýšenia príjmu. Zistilo sa, že domácnosti s optimistickými príjmovými očakávaniami vykazujú nižší MPC v porovnaní s domácnosťami s neutrálnymi očakávaniami, zatiaľ čo pesimistické domácnosti čelia protichodným tlakom v podobe okamžitej potreby mínať a súčasného preventívneho motívu sporiť. Tieto výsledky naznačujú, že očakávania môžu formovať skutočné rozhodnutia domácností o alokácii dočasných finančných prostriedkov. Po tretie, práca dodáva analýze MPC regionálnu dimenziu. Výsledky modelov potvrdzujú, že pozitívna umelá premenná (dummy) pre krajiny CE indikuje vyššiu inklináciu stredoeurópskych domácností okamžite spotrebovať dočasný likvidný zisk, čo je priamym dôsledkom ich obmedzených finančných rezerv. Tieto poznatky majú konkrétne implikácie pre tvorcov hospodárskych politík, keďže naznačujú, že účinnosť plošných fiškálnych opatrení závisí od štruktúry bohatstva a očakávaní v danom regióne.

Štruktúra dizertačnej práce je rozdelená do šiestich nadväzujúcich kapitol. Kapitola 1 sumarizuje teoretickú literatúru o dynamike bohatstva, spotreby a úspor, pričom reflektuje spôsoby empirického testovania kľúčových modelov. Kapitola 2 presne vymedzuje výskumné otázky a ciele práce. Kapitola 3 podrobne definuje využité mikro a makro dáta, špecifikuje premenné a vysvetľuje aplikovaný ekonometrický rámec. Kapitola 4 prezentuje samotné empirické zistenia a formálne testovanie hypotéz.

Kapitola 5 diskutuje tieto výsledky v širšom hospodárskom kontexte a posledná kapitola 6 prináša celkové vedecké závery výskumu.