

The Marginal Propensity to Consume and Household Savings During the COVID-19 Pandemic: Evidence from Thailand and Vietnam

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Abstract

Using representative household surveys conducted in Thailand and Vietnam during the COVID-19 pandemic, we find that the marginal propensity to consume is significantly larger for positive than for negative income shocks. Moreover, we discover that the savings position plays a crucial role, as the effects are especially pronounced for households that experienced a decline in savings. This result contradicts a prediction from the life-cycle permanent income model with borrowing constraints as well as empirical evidence from industrialized countries. However, our finding is consistent with Kahneman and Tversky's prospect theory, according to which the combination of income uncertainty and loss aversion can lead households to react more strongly to positive shocks than to negative ones.

Keywords: Marginal propensity to consume (MPC); Households' savings position; Unanticipated income shocks; COVID-19; Thailand; Vietnam.

JEL classification: D12; D14; E21; H31

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1 Introduction

The COVID-19 pandemic has had a significant impact on household finances worldwide. Many households experienced job loss and reduced income due to social distancing measures and challenging business environments, and many governments responded by implementing unprecedented cash transfers and financial support programs. As a result, some households experienced both a financial setback and an income windfall, affecting their saving and consumption behaviors. However, the negative financial shock tended to dominate the positive one as many households had to rely on their savings as a buffer during the pandemic.

This study aims to understand households' marginal propensity to consume (MPC) in the face of unanticipated income gains and losses. Understanding the MPC under these conditions is crucial for designing and evaluating the effectiveness of government fiscal policies aimed at stimulating the economy after an economic crisis. This understanding is especially valuable for developing and emerging economies with weak social safety nets and a lack of autonomous stabilization policies.

This paper estimates households' MPCs using hypothetical questions included in survey data. These surveys were administered during the first year of the pandemic, 2020, in two emerging economies, Thailand and Vietnam. We asked respondents to estimate the proportion by which they would increase or decrease spending following a positive or negative income shock equal to one month's household income. Furthermore, we investigated the impact of household savings on MPCs following both negative and positive income shocks.

After the positive shock of receiving an average monthly income, we find that the average Thai and Vietnamese households would spend 26% and 28% of it, respectively. According to a meta-analysis by [Havranek and Sokolova \(2020\)](#), these percentages are in the middle of the 12-60% range found in industrialized countries, but they are higher than the average MPC after a positive shock reported by most studies.¹ In response to an income loss of the same magnitude, the average MPCs for Thai and Vietnamese households are approximately 22% and 26%, respectively. The MPCs after a negative shock in these two countries are lower than most of the estimated results in developed countries.² For these two emerging economies, our results reveal that the MPC associated

¹The results for the MPC after a positive income shock are mixed, as the size of the shocks is not necessarily the same. For example, the estimated MPC after a positive income shock is between 33 and 57% for 17 European countries in [Drescher et al. \(2020\)](#); 48% and 47% in [Jappelli and Pistaferri \(2014, 2020\)](#), respectively; 52-59% for Norway in [Fagereng et al. \(2021\)](#); 43% for Spain in [Sala and Trivín \(2021\)](#); 11% for the UK in [Albuquerque and Green \(2022\)](#); 31% for Japan in [Kubota et al. \(2021\)](#); and 50% and 60% for the US in [Parker and Souleles, 2019](#) and [Gelman \(2021\)](#), respectively. In a meta-analysis of 144 published papers estimating the MPC after a positive income shock, [Havranek and Sokolova \(2020\)](#) find that the mean of the estimated MPC is around 20%.

²There are few studies that report estimated MPC after various negative income shocks. For example, in the U.S., [Ganong and Noel \(2019\)](#) find 58%, while [Fuster et al. \(2021\)](#) estimate 32%. In six European countries, [Christelis et al. \(2020\)](#) find an average of 23% for non-durable goods and 26% for durables.

with a positive shock is considerably higher than the MPC associated with a negative shock. Moreover, we discover that this asymmetry is primarily driven by respondents whose financial resources deteriorated during the pandemic, especially those who stated that their savings decreased compared to the year prior.

Our paper contributes to the literature on estimating MPCs using hypothetical questions that reflect both positive and negative unexpected income shocks. Since [Jappelli and Pistaferri \(2014\)](#) surveyed Italian households in 2010, most studies have estimated the MPC solely following positive income shocks. For example, [Drescher et al. \(2020\)](#) administered the Eurosystem Household Finance and Consumption Survey 2017 to 17 countries; this survey focused on the hypothetical of winning one month's household income in the lottery and found average MPCs ranging from 33% in the Netherlands to 57% in Lithuania. Similarly, [Sala and Trivín \(2021\)](#) surveyed Spanish households in 2017 (Encuesta Financiera de las Familias) and discovered that they would spend 43% of their earnings and that the MPCs of indebted households are lower than those of non-indebted ones. During COVID-19, the survey by [Coibion et al. \(2020\)](#) revealed that only 15% of respondents would spend most of their stimulus payment from the U.S. federal government's CARES Act. In 2020, [Crossley et al. \(2021\)](#) and [Albuquerque and Green \(2022\)](#) both set up a hypothetical situation of an unanticipated one-off payment of 500 pounds, and both found an average MPC of 11% for United Kingdom households.

Few studies based on household surveys have examined MPCs in cases where households experience both positive and negative income windfalls. In particular, [Bunn et al. \(2018\)](#) used panel survey data from the Bank of England between 2011 and 2014 to calculate average MPCs by asking British respondents to report how they would change their spending in the event of an unexpected windfall/tax bill. They find that the mean MPCs are 64% and 14% for negative and positive income shocks, respectively. Similarly, [Christelis et al. \(2019\)](#) surveyed Dutch households in 2015. They find that the impact of receiving a one-month or three-month income bonus on Dutch households' spending is significantly smaller than that of receiving a one-month or three-month income payment. Using a dataset for the United States from 2016-2017, the results of [Fuster et al. \(2021\)](#) show an average MPC of 7% when earning \$500 and an average MPC of 32% when hypothetically losing the same amount of money. Indeed, in research conducted during the COVID-19 pandemic, [Christelis et al. \(2020\)](#) discovered similar results for five of the six largest countries in the euro area. In contrast, [Nakajima \(2020\)](#) employed annual Japanese household survey data from 2003-2013 and estimated a higher elasticity of annual consumption after an increase than after a decrease in annual income. However, his analysis does not contain hypothetical questions about the household's reaction to income shocks. Our results for two emerging economies contrast with those of [Bunn et al. \(2018\)](#), [Christelis et al. \(2019, 2020\)](#), and [Fuster et al. \(2021\)](#), which were conducted in industrialized countries. They find that the MPC associated with a positive income shock is lower than the MPC associated with a negative income shock, which is consistent with

the predictions of the life-cycle permanent income model with borrowing constraints. We account for these contradictory results by examining the relationship between reduced savings and the MPC. The influence of savings fluctuations has not been analyzed in the extant literature, though it turns out to be an important conditioning variable for household consumption decisions. During the COVID-19 pandemic, many households in both countries experienced a decrease in their savings compared to the previous year. These households show significantly higher MPCs to both types of income shocks when compared to households that maintained or increased their savings. The magnitude of the differences between the MPCs of households whose savings decreased and those that did not is striking. In particular, they are 6 percentage points (pp) and 7 pp higher for a negative income shock and 11 pp and 12 pp higher for a positive shock in Thailand and Vietnam, respectively. Moreover, there is a 7 pp and 5 pp difference between the MPC after a positive and negative shock for households with reduced savings in Thailand and Vietnam, respectively.

Although our results are at odds with those in the survey-based literature on consumption behavior, they are consistent with those approaches that use (i) bank account transaction data and (ii) transitory income changes identified from semi-structural models to estimate MPCs. For example, both [van den Heuvel et al. \(2019\)](#) and [Baugh et al. \(2021\)](#) use account-level transaction data for Belgium (from 2006-2016) and the United States (from July 2010-May 2015), respectively; they both find evidence that consumers respond more strongly to income increases than to income decreases. Employing panel data, [Ballantyne \(2021\)](#) estimates a structural model for the United States from 1999-2019 and discovers a relatively stronger MPC response to income hikes for households with high home equity.³ These results align with [Bowman et al. \(1999\)](#), who constructed a model based on the Prospect Theory developed by [Kahneman and Tversky \(1979\)](#). They show theoretically and empirically that under income uncertainty, loss aversion could lead households to react more strongly to positive shocks than to negative ones.

Moreover, we find that the positive difference between MPCs in our sample is not only influenced by whether respondents reduced their savings. If we disaggregate the group of households that already decreased their savings during the COVID-19 pandemic period into different subgroups, we can draw additional conclusions. For Vietnam, we observe a particularly strong influence on households still drawing on savings and those who have saved some money (because their expenditure was lower than their earnings). In Thailand, the asymmetric result is more pronounced for a group of households whose members used all of their regular income and part of their savings to finance their consumption behavior.

Our paper adds to the literature assuming a linear consumption function in the standard permanent income model ([Friedman, 1957](#)) by finding that MPCs are symmetric

³In contrast, [Ballantyne \(2021\)](#) finds evidence of a relatively stronger MPC response to negative income changes for poor households characterized by low liquidity and low wealth.

after positive and negative income shocks, but only for households that did not reduce their savings during the pandemic.

In addition to the importance of a reduction in savings on households' consumption decisions, we discover that the difference in MPCs is not linked to households' net assets and consumer sentiment. While [Mian et al. \(2013\)](#) and [de Bondt et al. \(2019\)](#) suggest that wealth may play a role in consumption decisions, and we indeed find a positive association between positive net assets and the magnitude of MPCs after both types of income shocks for Vietnam, there is no significant effect of having positive net assets on the MPC difference in either sample country. In Thailand, we find a negative effect between consumer sentiment and MPCs, as found in the United Kingdom before COVID-19 ([Bunn et al., 2018](#)) and during the pandemic ([Albuquerque and Green, 2022](#)), and in Italy during the pandemic ([Immordino et al., 2021](#)). Nevertheless, in both countries, the effect of consumer sentiment on the difference between MPCs is not statistically different from zero at the 5% significance level. This result contradicts the finding by [Christelis et al. \(2020\)](#) that pandemic-related financial concerns negatively affect the gap between MPCs for six euro area countries during the pandemic.

More generally, our paper contributes to the literature examining the impact of the pandemic by presenting empirical evidence for two emerging economies in Southeast Asia: Thailand and Vietnam. We believe it is crucial to learn more about the external validity of the results found in the extant literature on industrialized countries. Finally, our conclusions are not necessarily limited to emerging markets but could also provide valuable insights when examining economies with high debt levels (such as Thailand) and high personal savings rates (such as Vietnam).

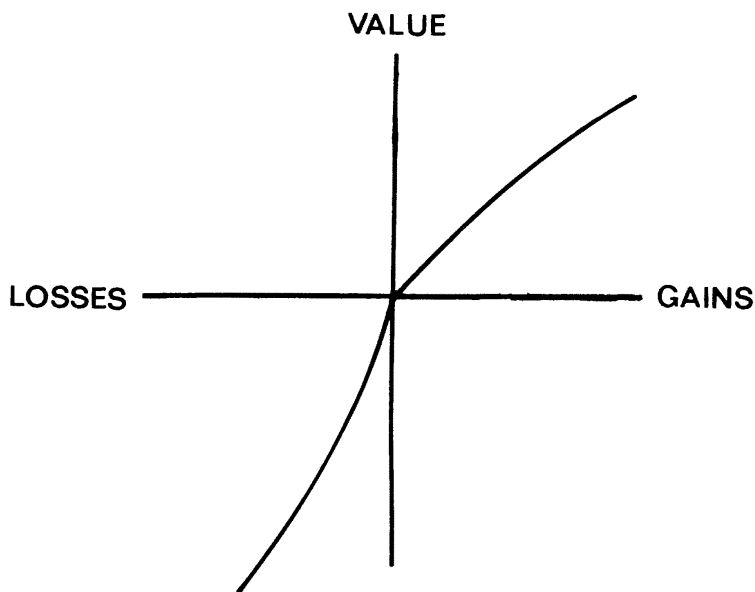
The remainder of this article is organized as follows. Section 2 discusses the theories that predict the symmetric and asymmetric response of consumption to income shocks. Section 3 describes our survey questions and data. In Sections 4 and 5, we show variations in saving behavior and the distribution of MPCs, respectively. Section 6 uses regression analysis to discuss the relationship between reduced savings and the size of the MPCs. Section 7 concludes the paper.

2 Theoretical Predictions

The literature on household consumption has identified three types of consumption responses to income shocks. Thanks to the linearity of the consumption function assumed in the standard permanent income hypothesis without borrowing constraints initiated by [Friedman \(1957\)](#), the MPC remains constant regardless of the size or direction of the income shock, that is, $MPC_{pos} = MPC_{neg}$.

Conversely, other models emphasize an asymmetric spending response to income shocks. Models of precautionary saving and liquidity constraints proposed by [Deaton \(1991\)](#) and [Carroll \(2001\)](#) predict a stronger response to a negative shock than a positive one. The

Figure 1: A Hypothetical Value Function under Loss Aversion



Source: [Kahneman and Tversky \(1979\)](#), p.279.

relationship $MPC_{pos} < MPC_{neg}$ arises from the assumed concavity of the consumption function. However, under the assumptions of loss-averse consumers and uncertainty, behavioral economic models proposed by [Bowman et al. \(1999\)](#), based on [Kahneman and Tversky's \(1979\)](#) Prospect Theory, suggest the opposite type of reaction: $MPC_{pos} > MPC_{neg}$. Figure 1 shows a hypothetical consumer's value function under loss aversion as an S-shaped curve with two distinct segments around a turning point, which is a reference level of consumption. The individual is in the loss (gain) region if she consumes less (more) than her reference level. However, because the value function curve is concave in the gain region and convex in the loss region, relative to the reference level, a smaller amount of lost consumption has the same impact on the individual's perceived value as a larger amount of gained consumption. Thus, an individual will increase consumption more when faced with a positive income shock than a negative one.

Given the conflicting model predictions about what happens after similarly sized positive and negative income shocks, it becomes an empirical question to determine whether $MPC_{pos} = MPC_{neg}$ or $MPC_{pos} < MPC_{neg}$ or $MPC_{pos} > MPC_{neg}$.

3 Data Description

We utilize household survey data conducted on our behalf by GMO-Z.com RUNSSYSTEM, one of Southeast Asia's leading private market research and public opinion survey companies. The surveys were conducted online in Thailand and Vietnam from May 4-10 and December 18-27, 2020. Our analysis uses the December wave, as it includes both hypothetical MPC questions on positive and negative income shocks. Our samples comprise

1,002 Vietnamese and 1,178 Thai respondents aged 18-60. To encourage participation, respondents receive “reward points” that can be redeemed for gifts at the end of the survey. Due to the disproportionately large number of young, better-educated, and urban respondents in our original samples, we construct population weights for each country, which are based on the respective national distributions of age, education, and share of urban population. Applying these weights provides us with representative samples of the countries’ populations as conducted by [Bui et al. \(2022, 2023\)](#).

Similar to [Jappelli and Pistaferri \(2014\)](#) and [Christelis et al. \(2019\)](#), we use hypothetical questions to learn about respondents’ MPC after positive and negative income shocks as well as the difference in MPC. The corresponding variables are denoted as MPC_{pos} , MPC_{neg} , and $MPC_{dif} = (MPC_{pos} - MPC_{neg})$, respectively. We set the size of the two shocks to equal the average monthly income, which helps respondents put the magnitude of the shocks into perspective. The exact wording of the questions is as follows:

MPC after a positive income shock (MPC_{pos}): Imagine you unexpectedly received a transfer equal to the amount of what your household earns in a month. How much of it would you spend? Please give the share you would spend [... percent]

MPC after a negative income shock (MPC_{neg}): Imagine you unexpectedly have to pay a bill equal to the amount of what your household earns in a month. How would your consumption react to this unexpected liability? Please give the share by which you would reduce your spending [... percent]

To measure the development of household savings, our main conditioning factor, we employ a binary variable from the December wave indicating whether a household’s savings decreased during the pandemic compared to the same period in the previous year. Other independent variables include a dummy for whether households have positive net assets and a dummy for whether households are currently savers (income \geq expenditure) or dis-savers (income $<$ expenditure).⁴ We also consider the role of the individual’s consumer sentiment index, as constructed by [Bui et al. \(2023\)](#). This index is measured as the simple average of five questions: (i) perceptions of the household financial situation in the past 12 months, (ii) expectations of the household financial situation in the next 12 months, (iii) expectations of the national economic situation in the next 12 months, (iv) expectations of the national economic situation in the next five years, and (v) readiness to buy durable goods. The response options for all five questions are scaled from 1 (much worse/very bad) to 5 (much better/very good).⁵ Thus, the value of this index ranges

⁴We set the dummy for whether households have positive net assets equal to 1 if respondents clearly state that their assets are greater than their liabilities, and equal to 0 otherwise.

⁵To maximize the usable sample size, we assign a neutral response of 3 for each question that a respondent did not answer or did not have an opinion on.

from 1 to 5, with higher values indicating more optimism. The exact wording of these questions is presented in Appendix A.2.

4 Household Savings Before and During COVID-19

Even before the COVID-19 pandemic, households in our sample countries saved part of their income.⁶ Based on the 2018 Vietnamese Household Living Standard Survey (VHLSS 2018), Stefani et al. (2022) report that, on average, 23% of Vietnamese household income is saved.⁷ According to the Bank of Thailand in 2019 (Trading Economics, 2023), Thai households saved 10% of their net disposable income, similar to France, Germany, and the U.S. (OECD, 2023). Nevertheless, Thailand and Vietnam have notably higher household savings ratios than the OECD average of roughly 6%.⁸ In both sample countries, the precautionary savings motive dominates all other motives. According to respondents from the 2016 Vietnam Access to Resources Household Survey (UNI-WIDER, 2020), the main reason for saving money is to finance expenses related to healthcare (21%), old age (10%), or education (10%). Recent statistics from Thailand tell the same story. In 2021, 43% of Thai households' savings were used to finance retirement plans, 34% for health care expenses, and 15% for education (National Statistical Office Thailand, 2021).

However, unlike households in many developed countries, such as the United Kingdom or the United States (OECD, 2023; Allen and Rebillard, 2021), most Thai and Vietnamese households could not increase their savings during the first year of COVID-19.⁹ Figure 2 shows that around half of our respondents in both countries experienced a decrease in their savings, while only 12% reported increased savings and almost 30% reported unaffected savings. These results also reflect the considerable fall in official personal saving deposits growth in Vietnam since 2020 (World Bank, 2021). For Thailand, Banchongduang (2021) reports that more than 90% of the total number of deposit accounts are small depositors who depleted their savings between May 2020 and March 2021. In both countries, the decline in the stock of household savings could be the result of income losses in the first year of the pandemic, a period when government cash transfers were limited due to slow disbursement (Bui et al., 2022).

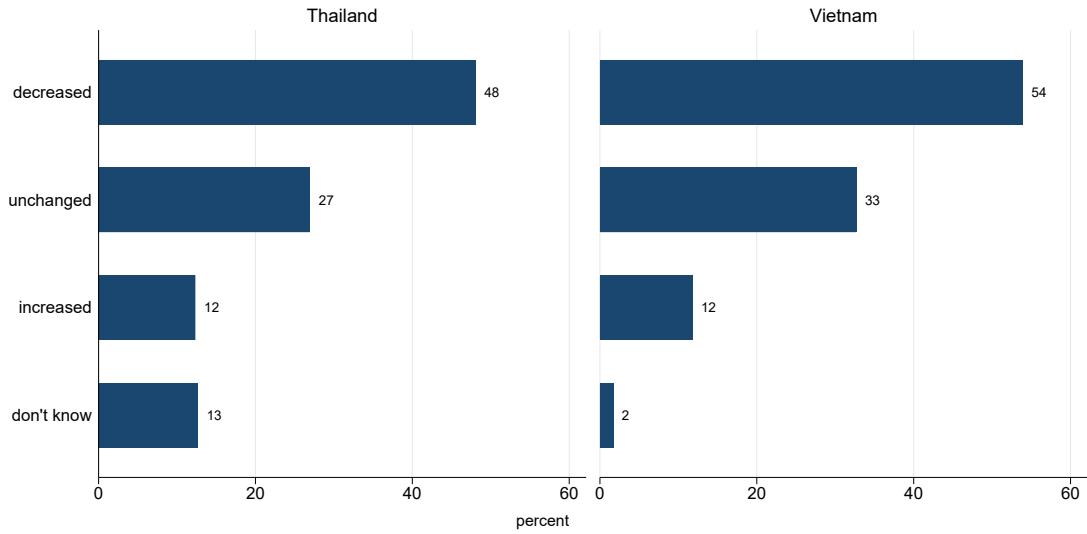
⁶Note that the savings statistics used in the literature are not consistently calculated and are therefore not necessarily fully comparable across countries.

⁷According to the 2018 VHLSS, the total monthly expenditure per capita is approximately 66% of the average total monthly income per capita. The figure is derived from the General Statistics Office of Vietnam (2020).

⁸Using OECD (2023) data, the average net household savings ratio between 35 OECD members was 6% in 2019.

⁹In 2020, the savings ratio increased by more than 10 pp in Luxembourg, the U.K., Canada, and Ireland (OECD, 2023). The U.S. savings ratio was more than 8 pp higher in 2020 than 2019.

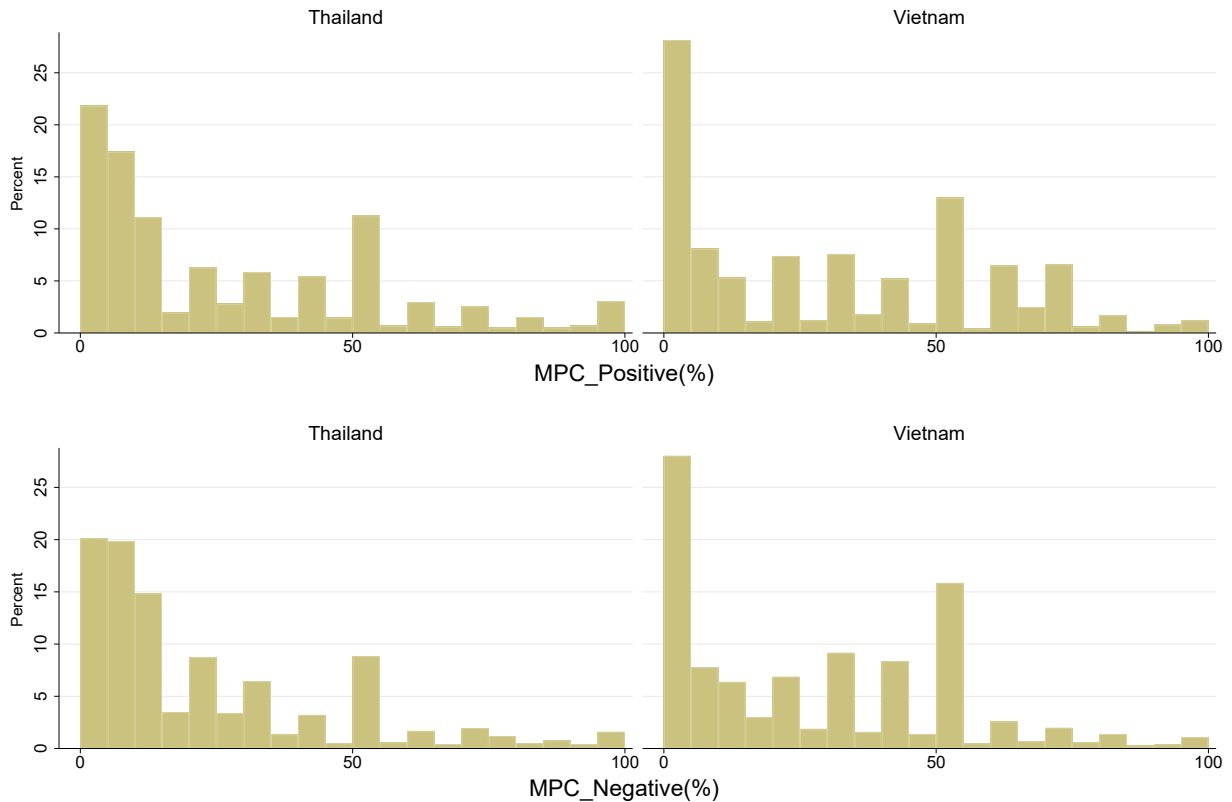
Figure 2: Change in Savings as Compared to Year 2019



In our survey, we ask about the change in household savings during the second wave, December 2020. Question: “Since May 2020, would you say the total savings of your household have been higher, about equal, or lower than your savings from May to December last year?” Answers: “Higher, About equal, Lower, Don’t know.”

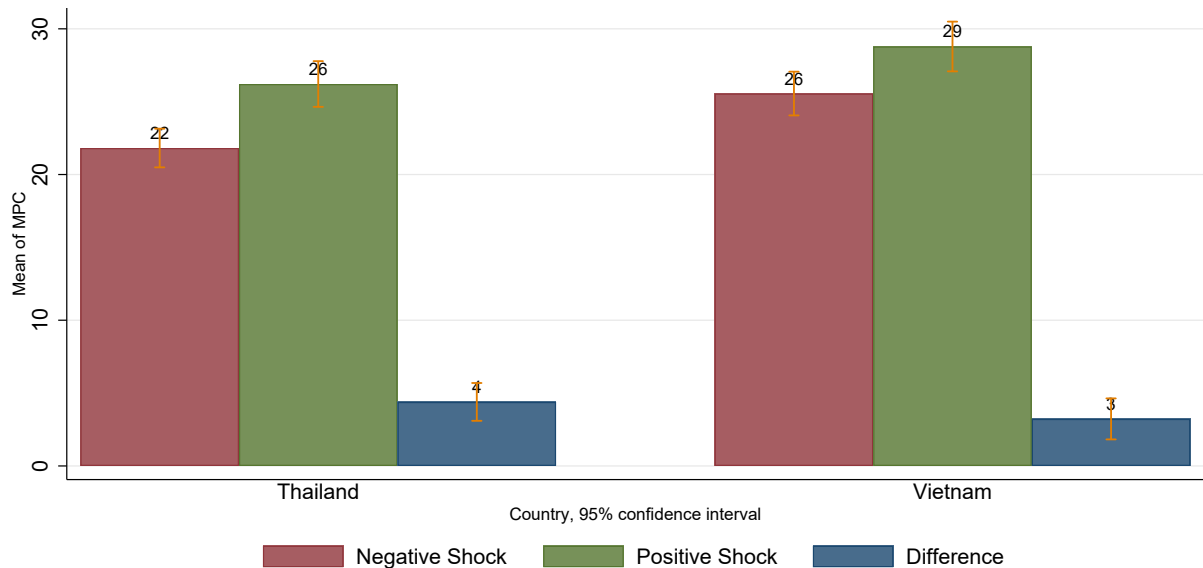
5 The Distributions of MPCs to Income Shocks

Figure 3: The Distribution of MPCs to Positive and Negative Income Shocks



We commence our analysis by looking at the distribution of MPCs for positive and negative income shocks and the differences between them. Figure 3 shows the distribution of individual MPCs in both countries. If a Thai (Vietnamese) household received an extra payment equal to one month’s income, it would, on average, spend 26% (29%) of it. In contrast, the average household would cut back on spending by almost 22% (26%) following an extra income loss of the same amount. Half of the Thai (Vietnamese) sample would spend (cut) about 10% (20%) of the extra positive (negative) income. The statistics are roughly similar to the estimated MPCs for other countries (see the discussion in Section 1). Compared to Thai households, the higher mean and median MPCs of Vietnamese households suggest a stronger preference for spending/cutting expenditure.

Figure 4: Means of MPCs Between Positive and Negative Shocks



MPCs after a positive income shock tend to be equal to or higher than MPCs after a negative income shock. Specifically, in 42% (46%) of the cases in Thailand (Vietnam), the MPC after a positive shock is higher in absolute terms than after a negative shock. For about 25% of Thai and Vietnamese respondents, the difference is zero. The remaining group is characterized by a higher MPC after negative income shocks than positive ones (Thailand: 33%; Vietnam: 29%). This contributes to the 4 pp and 3 pp difference between the average MPC to positive income shocks and the average MPC to negative income shocks in Thailand and Vietnam, respectively. As shown in Figure 4, these differences significantly differ from zero at the 5% level. These results contrast with the survey-based literature on developed countries before COVID-19, which tends to find negative MPC differences (e.g., [Bunn et al. 2018](#); [Christelis et al. 2019, 2020](#); and [Fuster et al. 2021](#)).

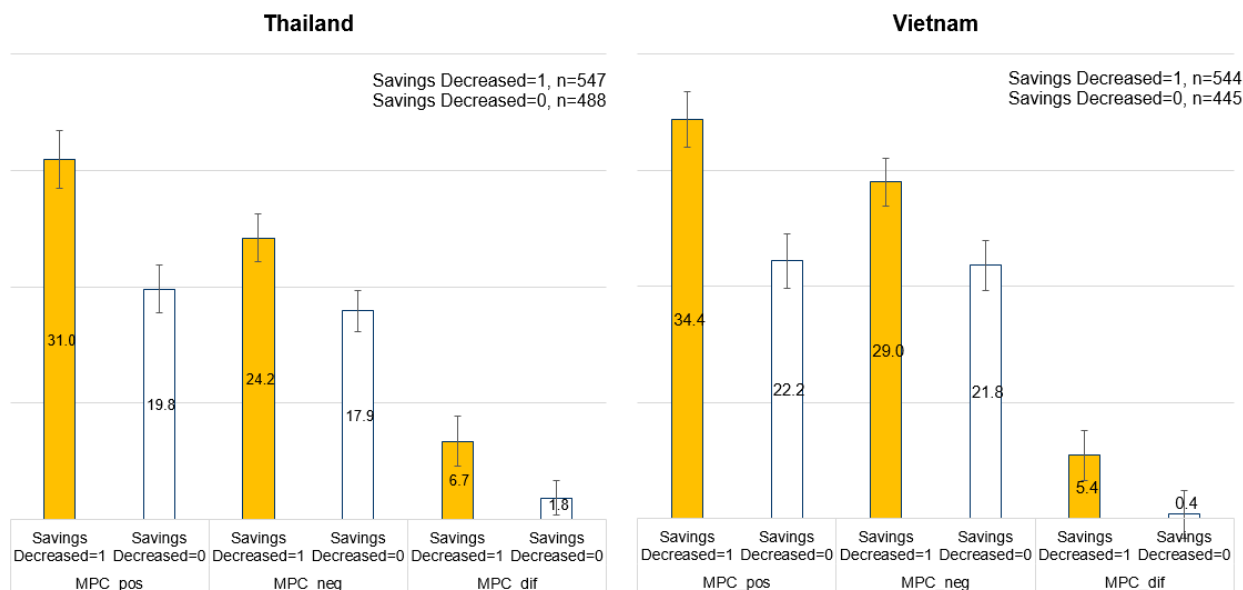
6 Savings Behavior and the Magnitude of MPCs

6.1 Descriptive Statistics

As discussed in Section 4, most households in Vietnam and Thailand reduced their savings during the pandemic. This reduction in savings can be related to the discovered asymmetric responses to an income windfall and a financial setback found in our sample countries. Figure 5 shows consistent differences in terms of MPCs between two groups of citizens, namely those who experienced a decrease in savings compared to the previous year and those who did not.

First, in both countries, households who experienced savings decreases had, on average, relatively higher MPCs. Their MPC is 11-12 pp higher at the mean MPC_{pos} and 6-7 pp at the mean MPC_{neg} in Thailand and Vietnam, respectively. In contrast, for households whose savings remained constant or increased, the means of MPC_{pos} and MPC_{neg} are not statistically different at the 5% level.

Figure 5: Means of MPCs Between Positive and Negative Shocks



Note: As some respondents choose not to answer the question on savings changes, the samples in this table are smaller than the overall survey samples. Accordingly, the mean MPCs for the total number of observations differ slightly from those reported in Section 5. The provided confidence intervals reflect a 5% level of significance.

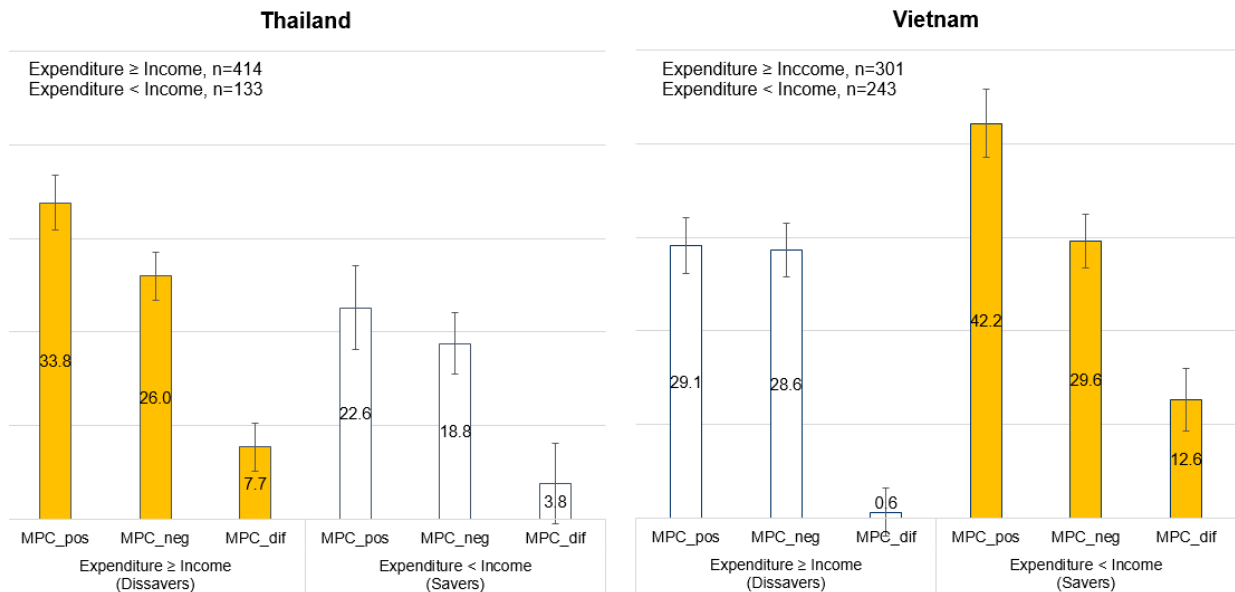
Second, the finding discussed in Section 5, namely that the average MPC associated with a negative income shock is considerably smaller than the MPC associated with a positive income shock, is driven by households that have tapped into their savings. The mean MPC_{dif} for this group is significantly different from zero, amounting to almost 7 pp in Thailand and more than 5 pp in Vietnam (see Figure 5). In contrast, the mean MPC_{dif} for the other group is not only small (about 2 pp in Thailand and 0.5 pp in Vietnam), but also statistically significant from zero only at the 10% level in Thailand and statistically insignificant in Vietnam.

Looking more closely at the subset of households that reduced their savings, we discover interesting and distinct patterns. Figure 6 compares the statistics of the three series MPC_{pos} , MPC_{neg} , and MPC_{dif} for the sub-groups of dissavers and savers. Dissavers are households that spend all or more than they earn by drawing on savings, buying on credit, or borrowing money. Conversely, savers spend less than their income. Figure 6 shows that not all dissaving households react in the same way to additional income or loss.

We find that Vietnamese savers who experienced a decrease in savings responded very strongly to a positive income shock (the mean MPC_{pos} is 42%) and much less strongly to a negative income shock (the mean MPC_{neg} is 30%). Thus, the average MPC_{dif} is almost 13%. In contrast, Vietnamese dissavers react relatively less to positive income shocks (MPC_{pos} is 29%) than savers, and they react symmetrically to both types of income shocks.

For Thailand, we find different consumption responses. First, the mean MPC_{pos} and MPC_{neg} for savers are significantly smaller than those for dissavers, with a difference of 11 and 7 pp, respectively. Second, for both income shocks, the average MPCs of dissavers are considerably more pronounced than those of savers.

Figure 6: Comparison of the Mean of MPCs of Savers and Dissavers among the Households with Decreased Savings



Note: In the second survey wave conducted in December 2020, we included a question on the households' saving positions. Question: "Since May 2020, would you say that your household's expenditure has been higher than your household's income, about the same as your household's income, or lower than your household's income?" Answers: "Higher than your household's income; About the same as your household's income; Lower than your household's income." We define "dissavers" as households with "Expenditure \geq Income" and "savers" as households with "Expenditure<Income." The provided confidence intervals reflect a 5% level of significance.

Thailand is among the countries with the highest household indebtedness. Its official household debt, loans, and other securities amount to 80% of total GDP in 2019 and to 90% by the end of 2020 (International Monetary Fund, 2023). Remarkably, these

levels even exceed those of Japan and the United States. The picture of indebtedness is even bleaker if we look at informal lending. According to Thailand’s National Credit Bureau (Khaosod English, 2023), around two-thirds of household loans in March 2022 are unproductive loans, such as personal loans and credit cards. The combination of temporary income shocks and reduced household savings may help explain our findings on the size of average MPCs. In response to a positive windfall income shock, households are likely keen on using these extra funds to finance their day-to-day spending rather than take out more loans. Following a negative income shock, many households have no choice but to restrict spending further.

In contrast to Thailand, Vietnam has one of the highest household savings-to-GDP ratios. At the same time, the household debt-to-GDP ratio has been rising over time (Stefani et al., 2022; OECD, 2023; International Monetary Fund, 2023). As noted above, the bulk of Vietnamese household savings is due to precautionary motives, which may reflect a considerable degree of risk aversion. Arguably, the decline in their savings has made Vietnamese households feel more financially vulnerable.¹⁰ This could help explain the asymmetric and rather large MPCs associated with income shocks that we found in the Vietnamese sample. In other words, a decline in their savings encourages households to use the income windfall gains rather than their savings to finance their desired consumption bundle. To avoid further deterioration of their savings, households reduce their consumption expenditure during periods of income loss.

6.2 Regression Results

Next, we employ multivariate OLS regressions to examine the relationship between reduced savings and MPCs, controlling for various demographic factors. These factors include income quartiles, employment status, age and age squared, the number of children and elderly individuals in the household, subjective health assessment, urban residence status, college degree attainment, gender, marital status, and the presence of a household member who lost their job during the pandemic.

Table 1 displays these results. In both countries, the MPC increases after a decrease in savings compared to the previous year. The increase in the reported hypothetical MPCs occurs after both positive and negative shocks. After a positive (negative) shock, the MPC increases by 11 pp (6 pp) in both Vietnam and Thailand. In addition, we find that MPC_{dif} increases significantly by almost 5 pp in both countries. Thus, a decline in household savings during the pandemic seems to be the main driver behind the increase in the MPC and the generally positive MPC differences.

However, taking into account the current expenditure position of a household, Table 2 shows that the impact of a decrease in savings on MPC_{dif} differs for Thailand and

¹⁰Stefani et al. (2022) argue that the COVID-19 pandemic has severely impacted most Vietnamese households’ financial situation, with about 10% of the population becoming financially vulnerable during this time.

Table 1: The Effects of Decreased Savings on MPCs

	MPC		MPC		MPC	
	for Positive Shocks		for Negative Shocks		Differences	
	Thailand	Vietnam	Thailand	Vietnam	Thailand	Vietnam
	(1)	(2)	(3)	(4)	(5)	(6)
Savings Decreased	10.6*** (2.23)	10.7*** (2.45)	5.9*** (1.91)	5.8*** (2.12)	4.6** (1.83)	4.9** (2.10)
R ²	0.060	0.113	0.036	0.086	0.042	0.055
N observations	1035	989	1035	989	1035	989

Note: All regressions contain the following control variables: Income Quartiles, Employed, Urban, College, Age, Age Squared, Male, Married, No. of Children, No. of Elderly, Health Condition, and Household's member had job loss during the pandemic. Standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The full results of this table are presented in Table A3.1 in the Appendix.

Vietnam. Within the group of households that reduced their savings, we find that the two countries are affected differently when conditioning on savers (those who spend less than their income) versus dissavers (those who spend all or more than their income). We constructed a reference group consisting of dissaver households that did not experience a notable drop in savings. MPC_{dif} for the Vietnamese savers (the Thai dissavers) who experienced a reduction in their savings is 12 pp (5 pp) higher than that of the reference group. These results underline the heterogeneous effects of a decrease in savings on the spending position of households in Thailand (an example of a country with high personal debt) and Vietnam (an example of a country with high personal savings), as mentioned in Section 6.1.

In summary, our results contradict those reported for advanced economies in studies by Bunn et al. (2018), Christelis et al. (2019, 2020), and Fuster et al. (2021). These studies employ a similar methodology but report negative MPC differentials. The authors of these studies interpret these results as supporting the standard life-cycle permanent income model with borrowing constraints, which implies that the MPC should be higher for negative income shocks than for positive ones. In contrast, our results provide evidence of a positive MPC differential, which is consistent with the predictions of the behavioral economics model with loss aversion, as discussed in Section 2. According to this model, risk-averse individuals who face income uncertainty (such as high indebtedness in Thailand and significant precautionary savings in Vietnam) are expected to react less to negative shocks than to positive ones. This model seems well suited to explain the behavior of households in Thailand and Vietnam.

Table 2: The Effects of Decreases in Savings on MPC Differentials Conditional on Spending Position

	MPC Differences	
	Thailand (1)	Vietnam (2)
Savers but Not Decreased Savings	-2.5 (2.11)	0.6 (2.82)
Dissavers but Decreased Savings	5.2** (2.08)	0.2 (2.19)
Savers but Decreased Savings	1.5 (3.33)	11.6*** (3.45)
R ²	0.046	0.087
N observations	1035	989

Note: All regressions contain the following control variables: Income Quartiles, Employed, Urban, College, Age, Age Squared, Male, Married, No. of Children, No. of Elderly, Health Condition, Household's member had job loss during the pandemic. Standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

6.3 Robustness

To check the robustness of our result, we further explore the influence of net wealth and consumer sentiment on the magnitude of the MPCs and the difference between MPCs. Table A3.2 in Appendix A.3 shows that our results are generally unchanged.

In the case of a positive (negative) income shock, we find that the Vietnamese with a positive net asset position have a 9 pp (7 pp) higher MPC than households with negative or balanced net assets. For Thailand, we discover a negative relationship between the magnitude of the MPC after both types of income shocks and consumer sentiment. The former result provides evidence to support the argument that wealth also plays a role in consumption decisions (e.g., [Mian et al., 2013](#); [de Bondt et al. 2019](#)), while the latter is in line with studies from Western countries, which show that financial perceptions/expectations or financial/health concerns have an impact on MPCs before ([Bunn et al., 2018](#)) and during the pandemic ([Immordino et al., 2021](#); [Albuquerque and Green, 2022](#)).

In general, both countries show that households with positive net assets do not react differently to the two types of income shocks. Similarly, consumer sentiment is generally not associated with the difference in MPCs. These findings contrast with those of [Christelis et al. \(2020\)](#), who present evidence from six European countries (Germany, France,

Italy, Spain, the Netherlands, and Belgium) and suggest that pandemic-related financial concerns have a more pronounced impact on the MPC after negative shocks.

7 Conclusion

Using household surveys conducted in Thailand and Vietnam during the COVID-19 pandemic, we examine the MPC after positive and negative income shocks. Our results show that, on average, the increase in spending is higher than the reduction in expenditure when comparing positive/negative income shocks of the same size. This implies a positive difference in MPCs that is likely due to those households who experienced a decrease in savings from the pandemic period compared to the same period from the previous year. Moreover, we find an asymmetry between the two countries, with dissaving households in Thailand and saving households in Vietnam dominating the outcome.

Our case studies support two key assumptions from the model proposed by [Bowman et al. \(1999\)](#) based on Prospect Theory ([Kahneman and Tversky, 1979](#)). First, as noted in [Section 4](#), the precautionary saving motive suggests a relatively high degree of loss aversion among households in both countries. Second, households' financial situation was severely affected by the pandemic, with approximately 80% of respondents reporting pandemic-related income losses ([Bui et al., 2022](#)). Given that the survey was conducted at the beginning of the second wave of coronavirus infection, this suggests that December 2020 was a period of significant income uncertainty for risk-averse households in our samples.

Our results provide empirical evidence for the theoretical conjecture from Prospect Theory that loss aversion combined with income uncertainty may cause household consumption in the better-off region to respond more strongly to positive income shocks rather than negative ones. Moreover, our study shows that stylized facts derived from data analysis on developed countries are not necessarily applicable to emerging markets. As shown here, there can be stark differences even between emerging economies.

Since many households incurred income losses during the pandemic, some Thai and Vietnamese households may have tapped into their savings or saved less money to keep their consumption at least at their current reference level from pre-pandemic times. However, this is somewhat of a conjecture, as we did not collect information on reference consumption levels at different points in time. The methodological challenge here is that events such as the COVID-19 pandemic are unpredictable, and therefore, the measurement of reference consumption levels would have to be done through continuous monitoring of representative samples of consumers from various countries.

Our finding of a relatively larger MPC following a positive shock compared to the MPC following a negative one suggests that the government cash support programs in response to the pandemic were beneficial. During the pandemic, cash transfers helped improve economic conditions at the household level and supported macroeconomic recovery by boosting private consumption. Moreover, with a relatively high MPC, the fiscal program

is even more useful and essential for households in emerging economies that lack automatic stabilizing policies and have underdeveloped social security systems.

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A Appendix

A.1 Summary statistics

Table A1: Summary Statistics of Key Variables of Interest

	Thailand					Vietnam				
	Obs	Mean	SD	Min	Max	Obs	Mean	SD	Min	Max
MPC_{pos}	1035	25.9	27.4	0	100	989	28.9	27.6	0	100
MPC_{neg}	1035	21.4	23.1	0	100	989	25.7	24.3	0	100
MPC_{dif}	1035	4.5	22.3	-99	94	989	3.1	22.8	-100	100
Savings Decreased	1035	0.6	0.5	0	1	989	0.5	0.5	0	1
Positive Net Asset	1035	0.3	0.5	0	1	989	0.7	0.5	0	1
Net Savers	1035	0.2	0.4	0	1	989	0.4	0.5	0	1
Consumer Sentiment	1035	2.6	0.9	1	5	989	3.4	0.5	1	5

Note: This table shows the summary statistics of our key variables of interest based on population weights. These samples exclude respondents who do not know the answer or who do not have opinions on the survey questions of our key variables. Section A.2 show the exact wording of these questions.

A.2 Survey Questions

Decreased Savings

- Since May 2020, would you say the total savings of your household have been higher, about equal, or lower than savings from May to December last year? [Higher, About equal, Lower, Don't know]

Saver vs. Dissaver

- Would you say the expenditures of your household have been higher than the income of your household, about equal to the income of your household, or lower than the income of your household? [Higher than the income of your household, About equal to the income of your household, Lower than the income of your household]

Positive Net Asset

- Think about what your household owns and what it owes in terms of wealth and debt. Generally speaking, would you say your household owns more than, about equals, or less than it owes? [Owns more than it owes, What it owns roughly equals what it owes, Owns less than it is owes, Don't know]

Consumer sentiment index Following the construction of the index of consumer sentiment by the University of Michigan (Surveys of Consumers), we calculate this index for each respondent as a simple average of the following five questions:

- Did the current financial situation of your household get better or worse over the past 12 months? [Got much worse, Got a bit worse, Stayed the same, Got a bit better, Got much better, Don't know]
- How do you think the financial situation of your household will develop over the next 12 months? [Get much worse, Get a bit worse, Stayed the same, Get a bit better, Get much better, Don't know]
- How do you think the national business conditions will develop over the next 12 months? [Get much worse, Get a bit worse, Stayed the same, Get a bit better, Get much better, Don't know]
- How do you think the national economic situation will develop over the next 5 years? [Get much worse, Get a bit worse, Stayed the same, Get a bit better, Get much better, Don't know]
- Generally speaking, do you think now is a good or bad time for people to buy major household items, such as furniture, a refrigerator, stove, television, and things like that? [Very bad, Bad, Neither good or bad, Good, Very good, Don't know]

A.3 Regression Result: Explaining MPC Conditional on “Decrease in Savings” and Socio-Demographic Control Variables

Table A3.1: The Effects of Decrease in Savings on MPCs

	MPC		MPC		MPC	
	for Positive Shocks		for Negative Shocks		Differences	
	Thailand	Vietnam	Thailand	Vietnam	Thailand	Vietnam
	(1)	(2)	(3)	(4)	(5)	(6)
Savings Decreased	10.6*** (2.23)	10.7*** (2.45)	5.9*** (1.91)	5.8*** (2.12)	4.6** (1.83)	4.9** (2.10)
II Income Quartile	-5.0 (3.48)	1.0 (3.57)	-5.0* (2.57)	2.9 (3.12)	-0.006 (2.43)	-1.9 (3.23)
III Income Quartile	-6.6* (3.70)	-2.9 (3.56)	-2.4 (2.97)	-0.5 (3.13)	-4.2 (2.93)	-2.5 (3.03)
IV Income Quartile	-3.2 (4.04)	1.8 (3.72)	-4.9 (3.07)	-1.4 (3.04)	1.6 (3.19)	3.2 (2.42)
Employed	-0.3 (3.57)	-7.3 (18.83)	2.9 (2.71)	-21.8 (13.94)	-3.2 (2.76)	14.5 (11.60)
Other Employment Status	-1.2 (3.64)	-10.4 (19.00)	1.6 (2.74)	-20.3 (14.50)	-2.8 (2.87)	9.9 (11.89)
Urban	-1.0 (2.50)	4.1 (2.53)	-2.3 (1.90)	2.6 (2.27)	1.3 (1.97)	1.5 (2.15)
College	2.7 (2.49)	7.3*** (2.29)	1.1 (2.12)	6.0*** (2.12)	1.6 (2.04)	1.3 (1.84)
Age	0.02 (0.70)	-2.0** (0.94)	0.5 (0.48)	-0.8 (0.99)	-0.5 (0.62)	-1.2 (0.87)
Age Squared	0.007 (0.10)	0.3** (0.13)	-0.07 (0.06)	0.1 (0.13)	0.07 (0.09)	0.2 (0.12)
Male	4.4* (2.40)	4.2* (2.32)	1.7 (1.96)	1.4 (2.07)	2.7 (1.88)	2.8 (2.08)
Married	2.5 (2.61)	2.0 (3.34)	-1.5 (2.23)	0.3 (2.96)	4.0** (2.00)	1.7 (3.25)
Number of children	0.8 (1.07)	-1.4 (1.51)	1.2 (0.94)	-3.7*** (1.39)	-0.4 (0.89)	2.3 (1.42)
Number of the old	-0.7 (1.24)	-0.09 (1.51)	-0.9 (1.04)	-0.5 (1.36)	0.2 (0.96)	0.4 (1.52)
Health Condition Score	-1.3 (1.17)	0.6 (1.57)	-0.4 (1.03)	0.6 (1.33)	-0.9 (0.83)	-0.02 (1.35)
Job Loss	0.9 (2.39)	0.9 (2.53)	1.5 (1.80)	0.5 (2.21)	-0.7 (1.92)	0.4 (2.02)
R ²	0.060	0.113	0.036	0.086	0.042	0.055
N observations	1035	989	1035	989	1035	989

Standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A3.2: The Effects of Decrease in Savings on MPCs: Additional Controls for Net Asset and Consumer Sentiment

	MPC		MPC		MPC	
	for Positive Shocks		for Negative Shocks		Differences	
	(1)	(2)	(3)	(4)	(5)	(6)
	Thailand	Vietnam	Thailand	Vietnam	Thailand	Vietnam
Savings Decreased	7.9*** (2.36)	10.6*** (2.47)	4.4** (1.98)	5.3** (2.18)	3.5* (1.96)	5.3*** (2.02)
Positive Net Asset	-1.4 (2.29)	8.8*** (2.62)	1.6 (2.00)	6.5*** (2.34)	-3.0 (2.01)	2.3 (2.26)
Consumer Sentiment	-3.9*** (1.49)	0.8 (2.31)	-2.7** (1.13)	-2.9 (2.16)	-1.2 (1.08)	3.7* (2.06)
R ²	0.075	0.137	0.048	0.104	0.048	0.065
N observations	1035	989	1035	989	1035	989

Note: All regressions contain the following control variables: Income Quartiles, Employed, Urban, College, Age, Age Squared, Male, Married, No. of Children, No. of Elderly, Health Condition, Household's member had job loss during the pandemic. Standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.