The dollar versus the peso: Currency of debt choices among U.S.-Mexico dual residents*

Tatiana A. Vdovina, Washington University in St. Louis

February 3, 2025

Abstract

I study the choice of U.S.-Mexico dual residents to borrow in pesos or dollars. The theoretical model suggests that it is optimal to borrow in dollars when the USD interest rate is below that of the peso interest rate, there is expected to be dollar depreciation, and when the borrowers are risk-neutral to risk-averse. Time discounting and income have no effect on the optimal borrowing decision. In the model simulation with online survey data collected from 138 participants, who were presented with a choice of peso and dollar interest rates, the predictions match the actual choices more closely when $R_{USD} > R_{MX}$ for the peso-only consumption model and when $R_{USD} = R_{MX}$ for the dollar-only consumption model. I derive the probability of choosing dollars over pesos for borrowing given a set of personal characteristics and expected and current exchange rates. I also estimate indifference rates for switching from dollar borrowing to peso borrowing in the interest rate task. Most borrowers switch to pesos when the dollar interest rate is equal to 110% of the peso rate, indicating a high preference for dollar loans overall. Contrary to the theoretical findings, a higher RRA coefficient significantly decreases the probability of borrowing in USD and is associated with a decrease of nine percentage points in the indifference rate - the rate in dollars that is compared to the base peso rate of 11%. Empirically, time discounting, income and spending shares, and the predicted future exchange rate all have an effect on the borrowing choice variables. In a specification with time discounting and income shares, there is an 11.3% increase in the estimated frequency of choosing USD associated with the time discount from the dollar task and a 6.6% decrease in the estimated frequency associated with the time discount from the peso task when the interest rates are equal. A 1 p.p. increase in the income share in dollars is associated with a .03 p.p. decrease in the indifference rate, while a higher share in pesos is associated with an equivalent increase in the indifference rate. Spending share increases of 1 p.p. in dollars and pesos are associated with a .04 p.p. decrease and a .04 p.p. increase respectively in the indifference rate, as well as a 4.5% decrease and a 4.7% increase in the estimated frequency of choosing USD. At the main switching point of 110% of the peso rate in USD and the base peso rate, a 1 peso per $1 increase in the exchange rate prediction decreased the estimated frequency of borrowing in USD by 57.5%.

JEL classification: E21, F31, F34, G11, G41

1 Introduction

In this paper, I study the choice of U.S.-Mexico dual residents to borrow in pesos or dollars. I conduct an online personal finance survey with 138 respondents recruited via a Facebook advertisement. The participants are selected based on their residence and earning-spending patterns in Mexico and the United States. I present the participants with a choice of peso and dollar interest rates on hypothetical loans. I derive the probabilities of choosing dollars over pesos for borrowing given a set of personal characteristics and expected and current exchange rates for each of the seven decision situations. These probabilities are derived from the participants' responses to the interest rate choice set of questions when presented with a hypothetical choice of peso and dollar interest rates. I also estimate indifference rates for switching from dollar borrowing to peso borrowing in the interest rate choice question.

My paper attempts to address the currency selection problem faced by dual currency income earners. They frequently must decide between borrowing in their national currency and borrowing in a reserve currency such as the U.S. dollar, given current and expected foreign exchange rates, and interest rates on loans denominated in local currency and foreign currency. The unique setting in my paper is in the fact that U.S.-Mexico dual residents earn their income and have the ability to keep their assets in dollars or pesos. They also have access to banking accounts both in the U.S. and in Mexico and have financial transactions in both currencies on a daily basis. I focus on identifying the indifference rate - the rate in dollars, which participants compare to the fixed peso rate and switch to peso borrowing from previously choosing dollar borrowing. I explore heterogeneity based on the borrowers' time and risk preferences, as well as income and spending composition by currency. Finally, the paper tests the nominal uncovered interest parity condition in the household/individual agent setting, which is largely unexplored in the existing literature.

I first introduce a 2-period representative agent model, in which agents choose loans in dollars and pesos to maximize the utility of consumption. I find that income and time discounting have no effect on the borrowing shares. I discover that when the exchange rate is expected to stay the same, it is optimal to borrow fully in dollars when the dollar interest rate is lower than in pesos and to borrow fully in pesos when the interest rate in dollars exceeds the peso interest rate, both in cases of all-peso and all-dollar consumption. When the dollar is expected to appreciate (and the peso is expected to depreciate), the dollar interest rate at which it is optimal to borrow fully in dollars is lower compared to the previous case in case when the consumption is in pesos only. When the consumption is only in dollars, it is optimal to borrow in pesos in all scenarios. When the dollar is expected to depreciate and the peso is expected to appreciate, it is optimal to borrow in dollars in all cases. When the interest rates are equal, it is optimal to borrow fully in USD when dollar depreciation is expected and fully in pesos when dollar appreciation (peso depreciation) is expected, both in case of all-peso consumption and in case of all-dollar consumption.

Comparative statics involving relative risk aversion show that when the exchange rate is not expected to change and the interest rates in dollars and pesos are equal, for all but the most risk-averse borrowers, who should be borrowing in dollars over pesos. This may be related to the relative safety of the dollar compared to the peso, as discussed in some existing literature (see the Mechanisms section). When the peso is expected to depreciate, it is optimal to borrow fully in pesos, except for the group of risk-neutral and close to risk-neutral borrowers (RRA of 0-0.5). When the peso is expected to appreciate, most borrowers should allocate their loans fully to dollars, except for the risk-neutral and close to risk-neutral borrowers.

The model simulation with inputs collected from the online survey. The predictions for the peso-only consumption model match the actual choices more closely when $R_{USD} > R_{MX}$. The model predicts that the borrowers should be switching to peso borrowing even when $R_{USD} = R_{MX}$, if all of their consumption is in pesos. However, since the borrowers in the survey consume in both currencies, and most of them primarily in dollars, they start switching to peso borrowing only when the dollar interest rate exceeds the peso interest rate in the survey questions. For the dollar-only consumption model, the predictions for the peso-only consumption model match the actual choices more closely when $R_{USD} = R_{MX}$. This result follows existing empirical evidence that households with a big proportion of foreign currency income (in this case the dollar) prefer foreign currency borrowing, all else equal (see Aiba, Odajima, and Khou 2018).

My survey shows that participants mostly spend in dollars, and the majority reside in the United States. However, more than half of respondents earn their income in both the United States and

Mexico, and the majority (over 90%) spend in both countries. While most respondents report having checking and savings accounts in both countries (52% and 80% respectively), the majority only have credit cards in the United States (69%). The credit card balances are higher for dollar-denominated credit cards. Among all 3 term groups (3, 6, and 12 months as a reference point for exchange rate prediction, past borrowing, and time value of money questions), participants exhibit high degrees of impatience, or high discount rates (over 100% annually), and have average relative risk aversion of 1.4.

When presented with a choice of either a base rate in pesos (either from the past borrowing experience if previously borrowed in pesos) or a central bank rate of 11% (which is close to the average rate on bank loans in pesos)[1], or a dollar rate that takes various values as a function of the peso rate, most borrowers switch from dollars to pesos when the dollar rate is equal to the 110% of the peso rate. Contrary to the theoretical model results, Higher relative risk aversion significantly decreases the probability of borrowing in USD and is associated with a decrease of nine percentage points in the indifference rate - the rate in dollars that is compared to the base peso rate of 11%. A 1 p.p. increase in the income share in dollars is associated with a .03 p.p. decrease in the indifference rate, while a higher share in pesos is associated with an equivalent increase in the indifference rate. Spending share increases of 1 p.p. in dollars and pesos are associated with a .04 p.p. decrease and a .04 p.p. increase respectively in the indifference rate, as well as a 4.5% decrease and a 4.7% increase in the odds of choosing USD.

Time discounting has significant effects on the estimated frequency of choosing dollars mostly in extreme rate comparison cases. Higher time discount rate from the USD task increases the estimated frequency of choosing a dollar rate by more than 100% when the dollar rate is 50-75% of the peso rate and decreases the estimated frequency by over 100% when the dollar rate is 150% of the peso rate. Higher time discount rate from the peso task decreases the estimated frequency of choosing a dollar rate by more than 100% when the dollar rate is 50-75% of the peso rate and increases odds by over 100% when the dollar rate is 150% of the peso rate. In a specification with time discounting and income shares, there is an 11.3% increase in the estimated frequency of choosing USD associated with the time discount from the dollar task and a 6.6% decrease in the estimated frequency associated with the time discount from the peso task when the interest rates are equal.

Among the two exchange rate variables - the exchange rate on the day of the survey and the exchange rate predictions by survey participants - only the latter has an effect on the propensity of borrowing in dollars over pesos. In case when the participants had to choose between the 110% of the peso rate in USD and the base peso rate, a 1 peso per $1 increase in the exchange rate prediction decreased the estimated frequency of borrowing in USD by 57.5%. However, the predicted exchange rate is not associated with a significant shift in the indifference rate and thus the switching point for the dollar and peso choices.

2 Literature review

2.1 Motivation

Emerging literature emphasizes dollar borrowing and macroeconomic shocks that affect borrowing decisions of households. Households outside of the U.S. can obtain short-term and long-term financing in foreign currency through local commercial banks and lending institutions. Compared to local currency-denominated loans, foreign currency-denominated loans offer lower interest rates [42] [43] [27] [25]. Another major advantage for certain consumer debt types like mortgages is having a fixed interest rate for at least the first year of the mortgage [43]. In Mexico, the borrowers have a choice between dollar-denominated and peso-denominated loans.

The foreign currency of choice in my experimental setting is the U.S. dollar. The U.S. dollar is the dominant currency in lending worldwide, including household debt. U.S. GDP makes up for 24.4% of the world GDP (World Bank, 2019 data), and dollar-denominated loans make up for 80% of cross-border loans to emerging market economies [11]. In Estonia and Latvia, 2 small Baltic economies that are a part of the European Union, dollar debt made up for 70-80% of all private debt as of 2010 [9]. The global preference for the dollar is unlikely to change in the near future, even if the

---

[1]The average nominal interest rate for bank loans in Mexico in July 2024 was 11.48%. The central bank rate was used due to less variability across time. Source: The Central Bank of Mexico.

U.S. Federal Reserve policies aren't particularly strong [36]. Compared to other major currencies, the dollar has been supported by well-established infrastructure [30], which in fact allowed other currencies, such as the euro, to be broadly used due to the incumbency effect [33] [35].

Dollarization of financial operations is relevant to many emerging countries due to macroeconomic instability; the dollar is often seen as a hedge against potential losses in local currency assets. In some cases, there is also a high degree of substitutability between the dollar and the local currency. Trade openness and financial liberalization tend to increase dollarization [37]. NAFTA adoption by Mexico increased the degree of dollarization among Mexican workers and households [10].

2.1.1 Currency mismatch

The key friction in foreign currency borrowing arises from the exchange rate risk. While in some emerging economies pegged exchange rates minimize the exchange rate risk [9], this is not the case for most borrowers around the world. The currency mismatch arises when borrowers earn their income in a domestic currency and have to repay their debt in another currency (and vice versa), making them vulnerable to exchange rate shocks. Given information about contemporaneous and predicted exchange rates, domestic and foreign inflation, and borrowing rates, borrowers essentially face a problem of having to match their future domestic currency-denominated income to interest payments and debt principal in a foreign currency to minimize their financing and foreign exchange conversion costs. If there is an exchange rate shock (i.e. the domestic currency gets severely devalued) after they borrow, without (sufficient) hedging, borrowers are faced with higher interest and principal repayments than expected. In my setting, this friction is resolved by the fact that surveyed workers all have earnings in dollars, which can be exactly matched to dollar-denominated debt payments.

2.1.2 Currency revaluations

As briefly discussed earlier, foreign currency-denominated debt makes borrowers vulnerable to periodic currency revaluations and in more extreme cases, currency crises in their respective home countries. Recent literature discusses the effects of such exchange rate shocks on consumer credit and other household finance metrics. In Hungary, the 2008 forint devaluation crisis was associated with rise in default rates even for households with soft (local) currency debt only, decline in housing prices, and decline in durable and non-durable consumption [42]. At the start of the 2014 Russian ruble crisis, many borrowers experienced a "payment shock" with their ruble-denominated incomes being insufficient to repay foreign currency loans (the majority of which were in U.S. dollars) [43] [27].

While payment shocks may not be a major concern for immigrant workers earning their income in dollars, they nevertheless face the challenge of maximizing their utility from the loan given the peso-dollar exchange rate volatility. When the peso is severely devalued, it may make more sense to borrow in pesos, as the dollar earnings are now worth more in pesos. This makes interest payments more affordable for dollar earners.

2.1.3 Banking coverage

Banking access and coverage by immigrant workers is an important factor affecting dollar earnings remittances. Paulson and Rhine (2008) show that Hmong refugee households more likely to use currency exchanges and less likely to use savings accounts and credit cards than non-immigrant workers [34]. In 2000-2002, 35% of Mexican immigrants had bank accounts in the United States [2].

Banking may affect remittances and subsequently, dollar assets and liabilities that Mexican workers hold back in their home countries. On the one hand, having a U.S. bank account may signify reduced ties with Mexico, which leads to lower earnings remittances. However, U.S. account ownership may also mean higher chances of having a bank account in Mexico to which the immigrant is transferring money to support the family. In fact, banked immigrants bring home 3 times the earnings of unbanked immigrants [2]. Bank accounts provide easier access to money as well: the immigrant's family or himself can use an ATM to withdraw money from the debit account. This is more convenient and safer than cashing in a money order/transfer or using informal means to remit money (money in mail, personal delivery, etc.).

2.1.4 Dollar earnings remittances

One of the main sources for dollarization of assets by Mexican households comes from dollar earnings remittances by Mexican immigrant workers. Mexican immigrants tend to send at least some of their U.S. dollar earnings back home [2]. Several well-documented mechanisms include household consumption smoothing, target and precautionary saving, insurance in case the immigrant loses employment, and the need for personal loan repayment. In 2009, the volume of remittances reached $21.2 billion in over 67,000 transactions, in contrast with $4 billion in 13,000 transactions in 1996, according to the Bank of Mexico data [40]. The average remittance value per transaction has not changed much: it was $320 in 1996 and $317 in 2009.

There are various channels for remittances: bank deposits and transfers, money orders and money transfers, other electronic payment transfers, and unofficial channels without a "paper trace", such as cash included in regular mail or personal deliveries of cash by designated persons to the families back in Mexico. 70% of transfers were done through money transfer firms in the early 2000s. This changed after the 2000s, when preferences switched mostly to bank transfers, even among illegal immigrants. $20.5 billion in remittances in 2009 was sent via wire transfers, which makes up for about 96.7% of total remittances [40]. The switch to wire transfers from money orders is associated with a broader acceptance of *matricula consular* card[2] as a form of identification required to open a U.S. banking account. [40] While documented immigrants transfer more money than undocumented immigrants, longer tenure in the U.S. is associated with lower rates of remittances.

Earnings remittances also have important macroeconomic effects for the Mexican economy [39]. Shocks to remittances have a positive effect on domestic money demand. There is a documented bi-directional relationship between remittances and the exchange rate. Remittances tend to appreciate the Mexican peso on the one hand; on the other hand, peso depreciation increases remittances. This leads to lower holdings of U.S. dollars and higher peso holdings, as families tend to convert dollar earnings into pesos during peso depreciation. But this relationship between peso depreciation and remittance rates is not always obvious. Ruiz and Vargas-Silva (2009) show that if peso is devalued substantially, those with ordinary, non-urgent consumption needs and those close to retirement may decrease remittances, as the higher value of the dollar allows them to match their financial goals with fewer dollars (while the value of the income when converted to pesos stays the same). However, if the worker has investments in both Mexico and the United States, remittances may increase to allow for higher contributions in pesos (especially if Mexican investments have been performing well). Those with urgent consumption needs also tend to increase remittances [39].

2.2 Contribution to existing literature

While the bulk of recent literature mostly focuses on the macroeconomic foundations of the optimal currency choice in depositing and borrowing, I attempt to understand the microeconomic and behavioral foundations of the actual/imputed currency choice by households. While there are papers that study effects of certain macroeconomic shocks on the corporations' decisions to borrow in foreign currency, such as Keller (2019) [24], there are no similar papers that study household decisions. I attempt to reconcile the export- and import-related theory of currency choice proposed in corporate finance literature with behavioral tests. Gyongyozi and Verner (2021) use macroeconomic shocks and change in foreign currency debt burden of households as a channel for change in political preferences, but do not explore the question of foreign currency debt choice in the first place. Rather, the foreign currency borrowing is used as an instrument [16]. Verner and Gyongyozi (2020) exploit variation in exposure to foreign currency debt by Hungarian households and revaluation of debt burdens to find effects on various macroeconomic indicators. [42]

3 Demographics

3.1 Statistics on border crossings

The demographic reach of my study is largely defined by the border crossing statistics provided by the U.S. Bureau of Transportation Statistics. The agency tracks entries for every legal U.S.-Mexico border crossing through designated checkpoints. Figure 1 indicates the locations of all official border crossings as of October 2022. The heat spots indicate the monthly volume of individuals at every border crossing, with yellow spots being the most populated border crossings.

---

[2] *Matricula consular* card is an identification card issued by the Mexican government to citizens residing outside Mexico.

San Diego, CA, Imperial County, CA, and El Paso, TX constitute the 3 largest border crossings by the number of people entering every month. In October 2022, 4 checkpoints located in San Diego County served roughly 3.9 million travelers. 3 checkpoints in El Paso County served 2.3 million people. These numbers are equivalent to 9.9% and 7.9% of the state population for California and Texas respectively. Figure 2 summarizes border crossings by county located at the U.S.-Mexico border.

Figure 1: U.S.-Mexico border crossing locations and entry volume. Data: U.S. Bureau of Transportation Statistics, October 2022.
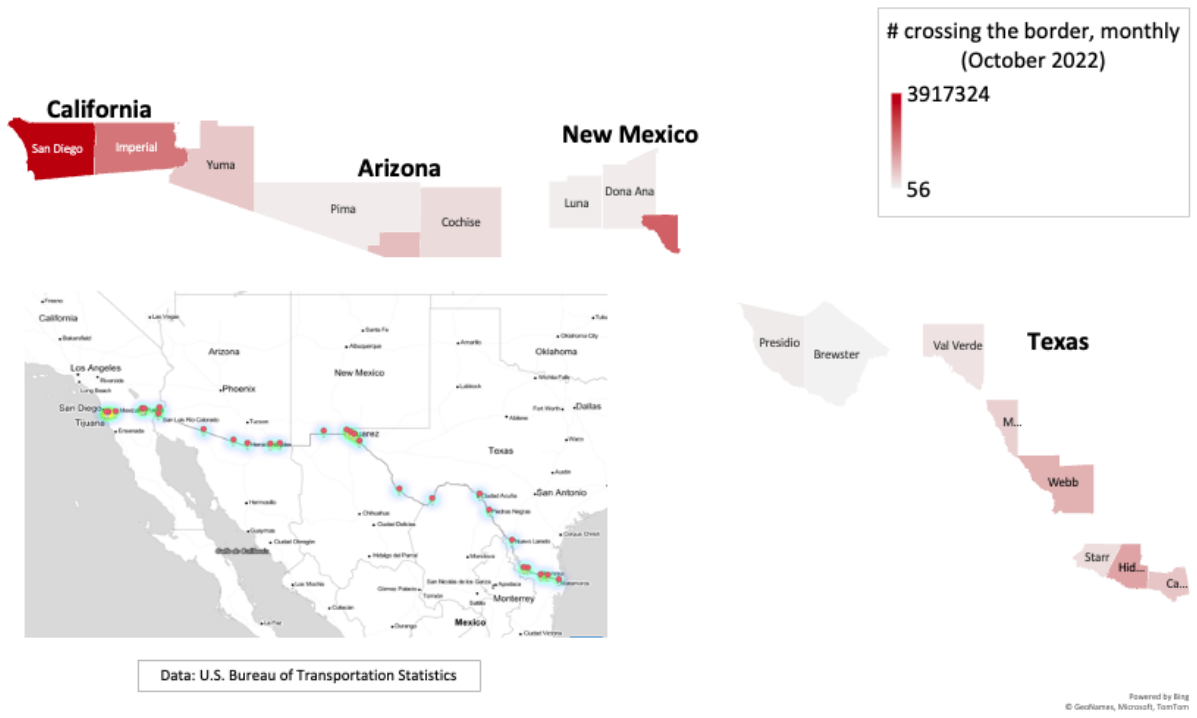
Figure 2: Monthly border crossings by county, October 2022. Data: U.S. Bureau of Transportation Statistics, October 2022.

4 Theoretical framework

4.1 Optimal dollar borrowing

Several papers have attempted to derive the optimal dollar position and level of dollar borrowing. Montamat (2020) defines optimal real wealth and net position in dollars in her model, which establishes optimal real wealth in dollars as a function of 3 terms: an uncovered interest parity term, a

price hedging term, and an income hedging term. The model setup involves savers and borrowers: borrowers are more risk-averse (typically households), while borrowers have higher tolerance for risk (typically corporations and entrepreneurs). The U.S. dollar offers households and entrepreneurs a hedge against exchange rate pass-through into prices and income risk. While dollar savings can partially hedge against exchange rate risk, households are more negatively exposed to exchange rate risk than the firms. [32] In Ize and Yeyati (2003), dollarization is defined as a dollar share of the optimized mean-variance asset portfolio and flows into the dollar share of the borrowers' optimal portfolio. Other variables are included in the term that involves the coefficient of risk aversion, the lending rate differential, and the variance of the interest rate differential. Dollar loans can optimize credit portfolios. [21] Higher deposit dollarization leads to higher borrowing in dollars, while higher risk aversion is correlated with lower dollar borrowing. Basso et al. (2011) similarly find that higher mean-variance portfolio dollarization leads to higher deposit and loan dollarization. [5]

4.2 Measures of risk aversion with incentives

As a part of my survey, I conduct a risk aversion assessment of the participants. I specifically utilize methodology by Holt and Laury (2002), which allows for measuring risk aversion with incentives and also estimation of a utility functional form. Unlike earlier papers on the subject, such as Binswanger (1980) [7], the lottery involves cash prizes that are actually to be paid to the select experiment participants. [20] While I don't follow the payout structure suggested by Holt and Laury, the $25 incentive serves as a reward for completing the survey task fully and accurately. In this paper, the lottery will be conducted in 1 round. There are 8 paired lottery choices.

5 Model

5.1 Literature

In this section, I introduce a representative agent model that is inspired by corporate borrowing models with 2 currencies. The model introduced in this paper incorporates an uncovered interest parity-driven borrowing framework of McBrady and Schill (2007) [29] and the approach of profit maximization post-dual currency debt repayment of Luca and Petrova (2008) [31]. I introduce risk aversion and consumption shares in dollars and pesos. Agents have non-rational expectations around the currency path. There are also personal time preferences, captured by individual discount rate factors.

5.2 Setup

- 2 periods (0 and 1); t=0 is certain, t=1 is uncertain
- Consume at t=0 and t=1
- Only consume in 1 currency (either peso or dollar)
- Fixed bundle of goods
- Borrow today to consume today, income today and tomorrow
- Only source of uncertainty is the exchange rate
- Repay the loan in the second period t=1
- Risk-averse agents: $\gamma > 0$, $\gamma \neq 0$ (strict condition)
- 2 states: u and d
- Non-rational expectations: $E_0[S_1] = S_0(1 + \varepsilon_s^S)$
- No heterogeneity in need for borrowing, model parameters are not affected by the personal motivation for borrowing

5.3 State-contingent exchange rate at t=1

- $E_0[S_0] = S_0$

- $E_0[S_1] = S_0(1 + E_0[\varepsilon_s^S])$ - individual-level expectation of S_1 that the agents have at t=0

- $S_1^u = S_0(1 + \varepsilon_u^S), S_1^u > S_0$

- $S_1^d = S_0(1 + \varepsilon_d^S), S_1^d < S_0$

- $S_1^u > S_1^d, S_1^d < S_0 < S_1^u$

5.4 UIP condition

The uncovered interest parity condition satisfies

$$1 + R^{MX} = E(S_1/S_0)(1 + R^\$), \tag{1}$$

or in continuous compounding terms,

$$r^{MX} = r^\$ + E_0(S_1 - S_0). \tag{2}$$

If UIP holds, then the borrowers cannot have any gains from borrowing in foreign currency over domestic currency and vice versa:

$$\Delta^U \equiv (r^{MX} - r^\$) - E(S_1 - S_0) = 0. \tag{3}$$

If UIP does not hold, then the borrowers can enjoy the following cost savings per 1 unit of debt borrowed when borrowing in one currency over another:

$$\Delta^U \equiv (r^{MX} - r^\$) - E(S_1 - S_0) > 0 \rightarrow \text{borrow in \$}, \tag{4}$$

$$\Delta^U \equiv (r^{MX} - r^\$) - E(S_1 - S_0) < 0 \rightarrow \text{borrow in pesos}. \tag{5}$$

5.5 Income

At time 0:

$$I_0^{MX} + I^\$ * S_0 = I_0^{tot} - \text{total income in \$ and pesos, denominated in pesos} \tag{6}$$

At time 1:

$$I_1^{MX} + I_1^\$ * S_1 = I_1^{tot} - \text{total income in \$ and pesos, denominated in pesos} \tag{7}$$

$$i_0^\$ = \frac{I^\$ * S_0}{I^{tot}} - \text{fraction of income in \$}, i^\$ + i^{MX} = 1 \tag{8}$$

$$i_1^\$ = \frac{I_1^\$ * E_0[S_1]}{I_1^{tot}} = \frac{I_1^\$ * S_0(1 + \varepsilon_{u,d}^S)}{I_1^{tot}} \tag{9}$$

5.6 Consumption

At time 0:

$$C_0^{MX} + C_0^\$ * S_0 = C_0^{tot} - \text{total consumption in \$ and pesos, denominated in pesos} \tag{10}$$

At time 1:

$$C_1^{MX} + C_1^\$ * S_1 = C_1^{tot} - \text{total consumption in \$ and pesos, denominated in pesos} \tag{11}$$

$$c_0^\$ = \frac{C^\$ * S_0}{C^{tot}} - \text{fraction of consumption in \$}, c^\$ + c^{MX} = 1 \tag{12}$$

$$c_1^\$ = \frac{C_1^\$ * E_0[S_1]}{C_1^{tot}} = \frac{C_1^\$ * S_0(1 + \varepsilon_{u,d}^S)}{C_1^{tot}} \tag{13}$$

5.7 Loans

- L_0^{MX}, $L_0^\$$ - loans in $ and pesos

- $R^{MX} * L_0^{MX}$ - interest payment on the peso loan at time 1

- $R^\$ * L_0^\$ * S_1$ - interest payment on dollar loan at time 1

$$L_0^{tot} = L_0^{MX} + L_0^\$ * S_0 - \text{total debt in \$ and pesos, denominated in pesos} \tag{14}$$

$$l^\$ = \frac{L_0^\$ * S_0}{L_0^{tot}} - \text{fraction of borrowing denominated in \$}, l^\$ + l^{MX} = 1 \tag{15}$$

5.8 Net income

$$NI_0^{tot} = I_0^{MX} + I_0^\$ * S_0 - C_0^{MX} - C_0^\$ * S_0 + L_0^{MX} + L_0^\$ * S_0 \tag{16}$$

$$NI_1^{tot} = I_1^{MX} + I_1^\$ * S_0 * (1 + E_0[\varepsilon_s^S]) - (1 + R^{MX}) * L_0^{MX} - (1 + R^\$) * L_0^\$ * S_0 * (1 + E_0[\varepsilon_s^S]) \tag{17}$$

5.9 Maximization problem

Choose L_0^{MX}, $L_0^\$$ ($l^\$, l^{MX}$), $C_0^{MX}, C_0^\$$ to maximize

$$U(C_0^{tot}, C_1^{tot}) = \frac{(C_0^{tot})^{1-\gamma}}{1-\gamma} + \beta * \frac{E_0[C_{s,1}^{tot}]^{1-\gamma}}{1-\gamma} \tag{18}$$

s.t. (6), (7), (10), (11), (14); $\beta = \frac{1}{1+\delta}$

5.10 Case 1: Peso-only consumption

5.10.1 Maximization problem

The problem reformulated with probabilities, where $\pi_{s,1}$ - probability of state occurring at t=1:

$$U(C_0^{MX}, C_{s,1}^{MX}) = \frac{(C_0^{MX})^{1-\gamma}}{1-\gamma} + \beta * \pi_{s,1} \frac{(C_{s,1}^{MX})^{1-\gamma}}{1-\gamma} \tag{19}$$

Budget at t=0:

$$C_0^{MX} \leq I_0^{MX} + I_0^\$ * S_0 + L_0^{MX} + L_0^\$ * S_0 \tag{20}$$

Budget at t=1:

$$C_{s,1}^{MX} \leq I_1^{MX} + I_1^\$ * S_0(1 + \varepsilon_s^S) - L_0^{MX}(1 + R^{MX}) - L_0^\$(1 + R^\$) * S_0(1 + \varepsilon_s^S) \tag{21}$$

5.10.2 Analytical solution

The budget constraints become strict equalities:

$$C_0^{MX} = I_0^{MX} + I_0^\$ * S_0 + L_0^{MX} + L_0^\$ * S_0, \tag{22}$$

$$C_{s,1}^{MX} = I_1^{MX} + I_1^\$ * S_0(1 + \varepsilon_s^S) - L_0^{MX}(1 + R^{MX}) - L_0^\$(1 + R^\$) * S_0(1 + \varepsilon_s^S). \tag{23}$$

The first-order conditions produce the following 2 equalities:

$$C_0^{MX-\gamma} = \beta E[C_1^{MX-\gamma} * (1 + R^{MX})], \tag{24}$$

$$C_0^{MX-\gamma} = \beta E[C_1^{MX-\gamma} * (1 + R^\$)S_1]. \tag{25}$$

5.10.3   Interest rate dynamics

Figure 3 represents the relationship between borrowing shares and the interest rate in dollars when it is compared against the flat peso rate of 11%. The loan value is set at 100,000 pesos. The time discount factor is set at 0.95, and risk aversion is set at 1. The annual income in dollars is set at $60,000, consistent with the sample collected from the survey. The annual income in pesos is set at 60,000 pesos. When the exchange rate is not expected to change, it is optimal to borrow fully in dollars when the dollar interest rate is below the peso interest rate and fully in pesos when the dollar interest rate exceeds the peso interest rate. In case when the peso is expected to depreciate $(S_0 < S_1)$, it is only optimal to borrow fully in dollars when the interest rate in dollars is up to 75% of the peso rate. After that point, the optimal decision turns to peso borrowing. Finally, when the peso is expected to appreciate $(S_0 > S_1)$, it is optimal to borrow in dollars in all scenarios.

Figure 3: Interest rate dynamics for the peso-only consumption case

5.10.4 Risk aversion dynamics

Figure 4 represents the relationship between the RRA coefficient and the borrowing shares in dollars and pesos. Both interest rates are set at 11%. The loan value is set at 100,000 pesos, or $5,880. The time discount factor is set at 0.95. The annual income in dollars is set at $60,000, consistent with the sample collected from the survey. The annual income in pesos is set at 60,000 pesos. S_0 is set at 17 pesos per $1. In case when the exchange rate is not expected to change, a 50-50 split between the currencies is optimal, unless the borrower is extremely risk-averse (RRA of 2.5 and above). This result may be consistent with the idea of the dollar being a "safer" and more stable currency than the peso, thus being a better choice for risk-averse borrowers, discussed in existing

literature. However, this is contrary to the empirical results of higher risk aversion decreasing the probability of borrowing in dollars (see table 33 in Appendix B) and lowering the indifference rate in dollars, which indicates a faster switch to pesos in the hypothetical borrowing scenarios even when the rate in dollars is quite low relative to the flat peso rate (see table 13). In case of expected peso depreciation, all-peso borrowing is optimal for almost all borrowers, except for those who are less risk averse (RRA of 0-0.5). In case of expected peso appreciation, all-dollar borrowing is optimal for almost all cases, except for the risk-neutral group and those close to risk neutrality.

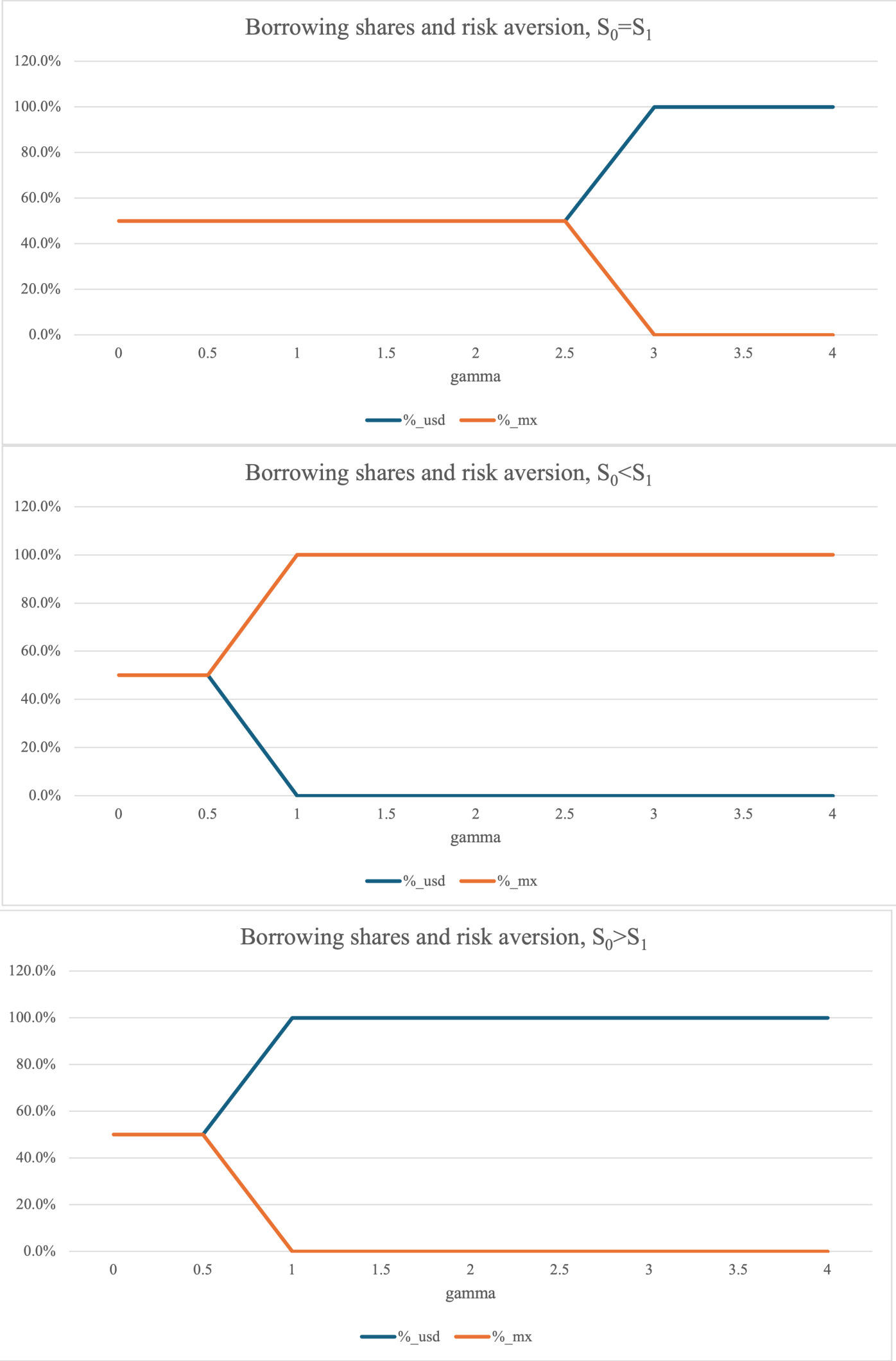Figure 4: Risk aversion-related dynamics for the peso-only consumption case

5.10.5 Exchange rate dynamics

Figure 5 represents the relationship between the expected exchange rate and borrowing shares in dollars and pesos. Both interest rates are set at 11%. The loan value is set at 100,000 pesos. The

time discount factor is set at 0.95, and risk aversion is set at 1. The annual income in dollars is set at \$60,000, consistent with the sample collected from the survey. The annual income in pesos is set at 60,000 pesos. The dollar is the optimal choice for borrowing when the peso is expected to appreciate. It is optimal to borrow in dollars when the peso is expected to appreciate relative to the dollar and in pesos when the peso is expected to depreciate. This result is consistent with the idea that peso depreciation creates a bigger currency mismatch - if the borrower were to select dollars, the loan repayment would be costlier in the future if the borrower has partial income in pesos. The empirical results suggest that the increase in the predicted exchange rate indeed has a negative effect on the probability of borrowing in dollars in most scenarios (see table 38 in Appendix B).

Figure 5: Exchange rate-related dynamics for the peso-only consumption case

5.11 Case 2: Dollar-only consumption

5.11.1 Maximization problem

The problem reformulated with probabilities, where $\pi_{s,1}$ - probability of state occurring at t=1:

$$U(C_0^\$, C_{s,1}^\$) = \frac{(C_0^\$)^{1-\gamma} * S_0}{1-\gamma} + \beta * \pi_{s,1} \frac{(C_{s,1}^\$)^{1-\gamma} * S_0(1+\varepsilon_s^S)}{1-\gamma} \tag{26}$$

Budget at t=0:

$$C_0^\$ * S_0 \leq I_0^{MX} + I_0^\$ * S_0 + L_0^{MX} + L_0^\$ * S_0 \tag{27}$$

Budget at t=1:

$$C_{s,1}^\$ * S_0(1+\varepsilon_s^S) \leq I_1^{MX} + I_1^\$ * S_0(1+\varepsilon_s^S) - L_0^{MX}(1+R^{MX}) - L_0^\$(1+R^\$) * S_0(1+\varepsilon_s^S) \tag{28}$$

5.11.2 Analytical solution

The budget constraints become strict equalities:

$$C_0^\$ * S_0 = I_0^{MX} + I_0^\$ * S_0 + L_0^{MX} + L_0^\$ * S_0, \tag{29}$$

$$C_{s,1}^\$ * S_1 = I_1^{MX} + I_1^\$ * S_0(1+\varepsilon_s^S) - L_0^{MX}(1+R^{MX}) - L_0^\$(1+R^\$) * S_0(1+\varepsilon_s^S). \tag{30}$$

The first-order conditions produce the following 2 equalities:

$$C_0^{\$-\gamma} = \beta E[C_1^{\$-\gamma} * (1+R^{MX})\frac{1}{S_0}], \tag{31}$$

$$C_0^{\$-\gamma} = \beta E[C_1^{\$-\gamma} * (1+R^\$)\frac{S_1}{S_0}]. \tag{32}$$
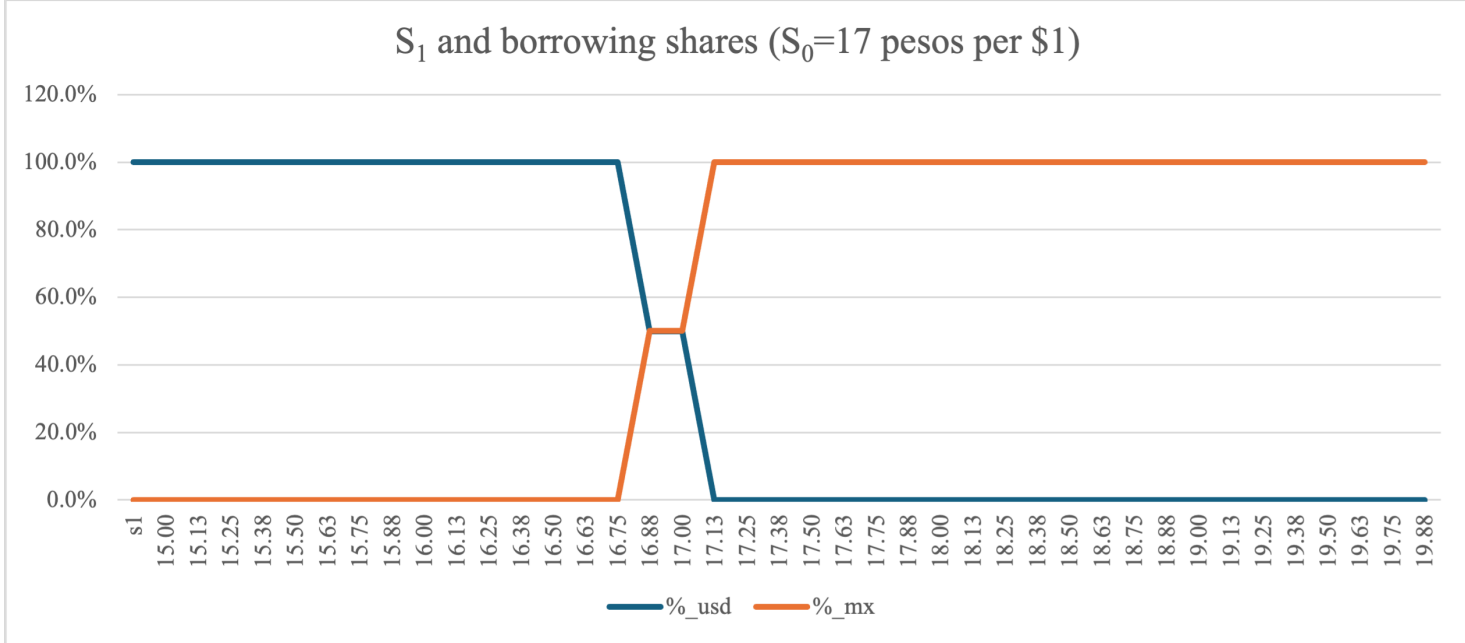
14

5.11.3   Interest rate dynamics

Figure 6 represents the relationship between the interest rate in dollars and borrowing shares in dollars and pesos. The peso rate is set at 11%, and S_0 is set at 17 pesos per \$1. The loan value is set at 100,000 pesos. The time discount factor is set at 0.95, and risk aversion is set at 1. The annual income in dollars is set at \$60,000, consistent with the sample collected from the survey. The top graph represents the case when the exchange rate is not expected to change. When the interest rate in dollars is lower, it is optimal to borrow fully in USD. When the interest rates are equal, the borrowers should be indifferent between the two currencies. When the interest rate in USD exceeds the peso interest rate, borrowing should be fully done in pesos. When the peso is expected to depreciate relative to the dollar ($S_0 < S_1$), it is optimal to borrow in pesos, no matter what the interest rate is in dollars. The exchange rate is the only driver in case that $S_0 > S_1$: it is optimal to borrow in dollars in all cases.
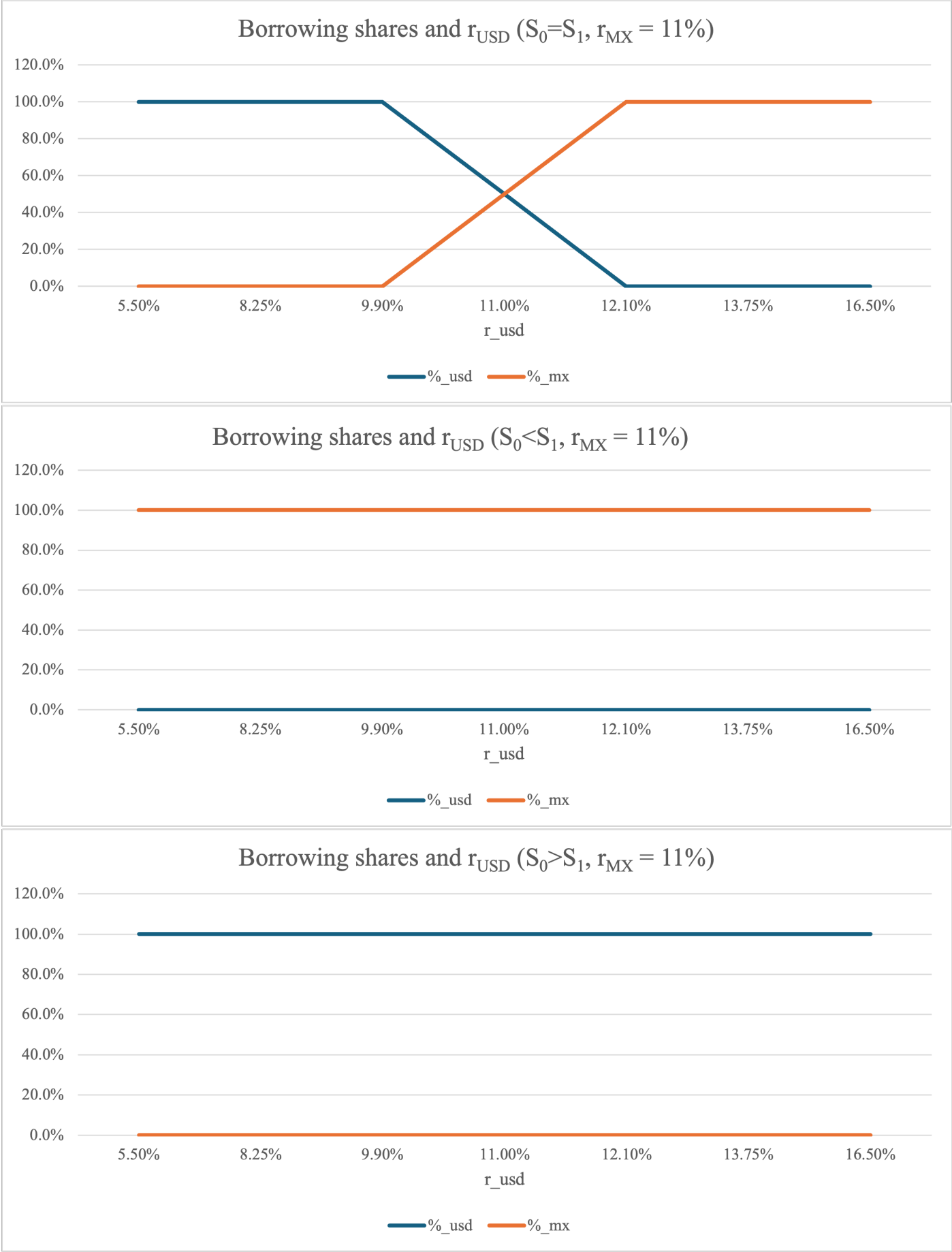
Figure 6: Interest rate dynamics for the dollar-only consumption case

5.11.4 Risk aversion dynamics

Figure 7 represents the relationship between the RRA coefficient and the borrowing shares in dollars and pesos. Both interest rates are set at 11%. The loan value is set at 100,000 pesos, or $5,880. The time discount factor is set at 0.95. The annual income in dollars is set at $60,000, consistent with the sample collected from the survey. The annual income in pesos is set at 60,000 pesos. S_0 is set at 17 pesos per $1. In case when the exchange rate is not expected to change, a 50-50 split between the currencies is optimal, unless the borrower is extremely risk-averse (RRA of 3.5 and above). This result may be consistent with the idea of the dollar being a "safer" and more stable currency than the peso, thus being a better choice for risk-averse borrowers, discussed in existing literature. However, this is contrary to the empirical results of higher risk aversion decreasing the probability of borrowing in dollars (see table 33 in Appendix B) and lowering the indifference rate

in dollars, which indicates a faster switch to pesos in the hypothetical borrowing scenarios even when the rate in dollars is quite low relative to the flat peso rate (see table 13). In case of expected peso depreciation, all-peso borrowing is optimal for all borrowers but the risk-neutral individuals (RRA=0). In case of expected peso appreciation, all-dollar borrowing is optimal for almost all cases, except for the risk-neutral group.
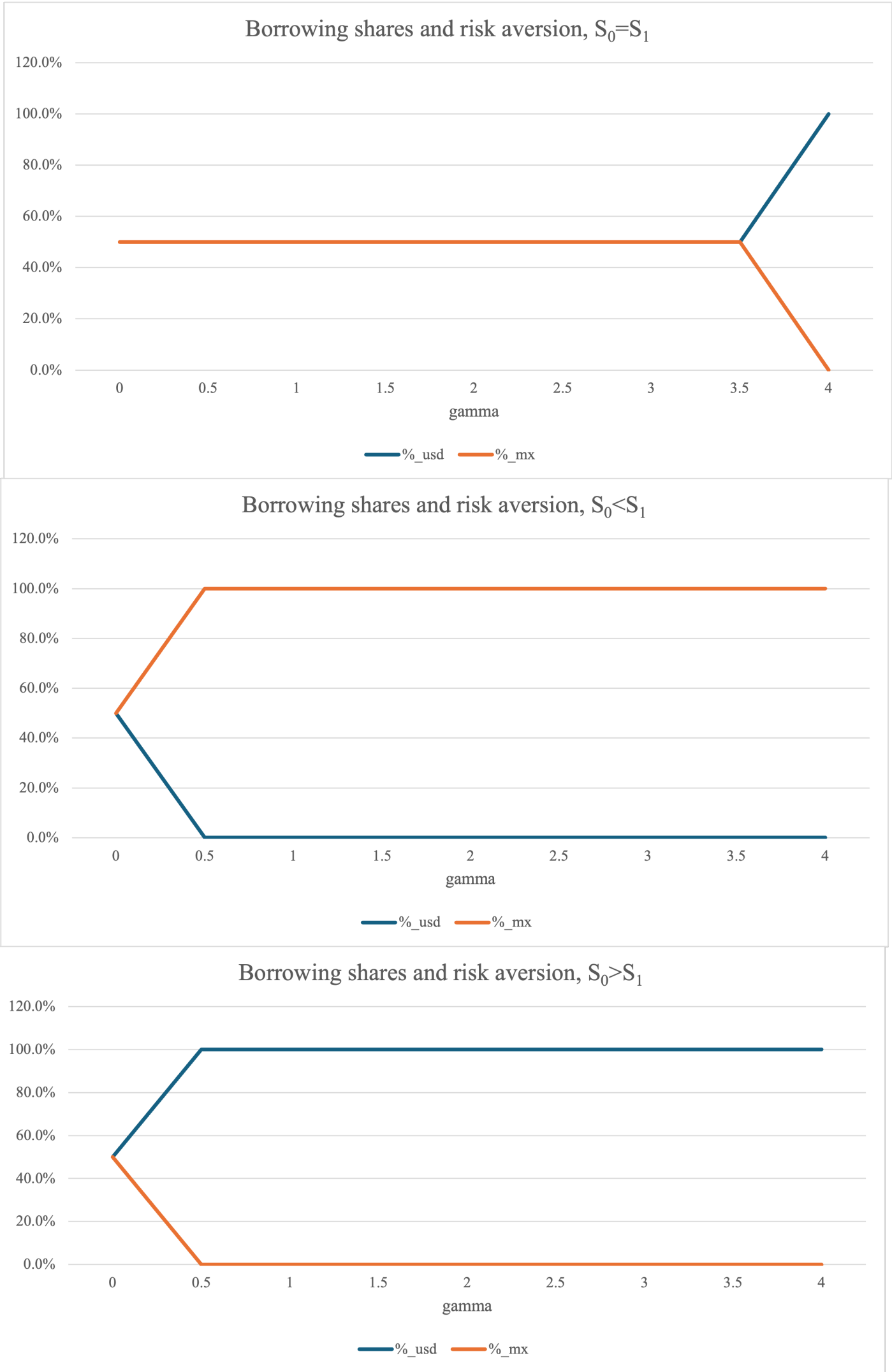
Figure 7: Risk aversion-related dynamics for the dollar-only consumption case

5.11.5 Exchange rate dynamics

Figure 8 represents the relationship between the expected exchange rate and borrowing shares in dollars and pesos. Both interest rates are set at 11%. The loan value is set at 100,000 pesos. The

time discount factor is set at 0.95, and risk aversion is set at 1. The annual income in dollars is set at $60,000, consistent with the sample collected from the survey. The annual income in pesos is set at 60,000 pesos. The dollar is the optimal choice for borrowing when the peso is expected to appreciate. It is optimal to borrow in dollars when the peso is expected to appreciate relative to the dollar and in pesos when the peso is expected to depreciate. Similarly to the all-peso consumption case, the result is consistent with the idea that peso depreciation creates a bigger currency mismatch - if the borrower were to select dollars, the loan repayment would be costlier in the future if the borrower has partial income in pesos.
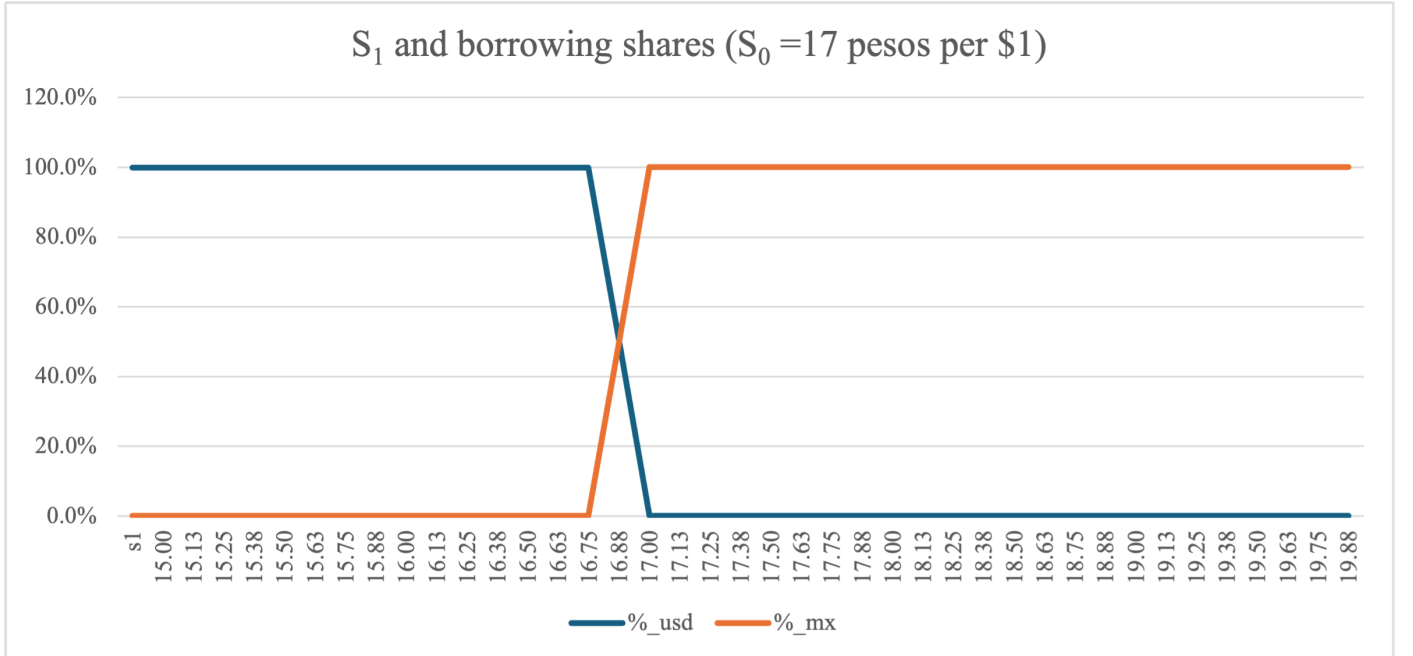
Figure 8: Exchange rate-related dynamics for the dollar-only consumption case

5.12 Model simulation: predicted vs actual borrowing shares

5.12.1 Peso-only consumption model

Figures 9-14 plot actual decisions to borrow in USD for each survey participant who responded to the choice questions where $R_{USD} = R_{MX}$ and $R_{USD} > R_{MX}$ (dollar rate being 110% of the peso rate) and predicted decisions from the peso-only consumption model. The participant responses to the personal finance and select behavioral questions serve as inputs for the model.

Generally speaking, the model predictions match the actual choices more closely when $R_{USD} > R_{MX}$. The model predicts that the borrowers should be switching to peso borrowing even when $R_{USD} = R_{MX}$, if all of their consumption is in pesos. However, since the borrowers in the survey consume in both currencies, and most of them primarily in dollars, they start switching to peso borrowing only when the dollar interest rate exceeds the peso interest rate in the survey questions. Figures 9 and 10 plot actual and predicted decisions by income in USD and level of RRA. Higher income correlates with higher RRA. More risk-averse individuals prefer peso borrowing when $R_{USD} > R_{MX}$ (see figure 10). Figures 11 and 12 plot actual and predicted decisions by income in USD and predicted future exchange rate. Higher income tends to coincide with more optimistic predictions for the peso movement/more pessimistic predictions for the dollar (expecting peso appreciation). Figures 13 and 14 plot actual and predicted decisions by income in USD and personal time discount rate. Those with higher income discount tend to have lower discount rates. When $R_{USD} > R_{MX}$, most borrowers make an optimal borrowing choice, except those with the higherst dollar incomes (suboptimally choosing to borrow in pesos).

Figure 9: Actual and predicted USD borrowing choices by income in USD and RRA, $R_{USD} = R_{MX}$

Figure 10: Actual and predicted USD borrowing choices by income in USD and RRA, $R_{USD} > R_{MX}$

20

Figure 11: Actual and predicted USD borrowing choices by income in USD and predicted exchange rate, $R_{USD} = R_{MX}$
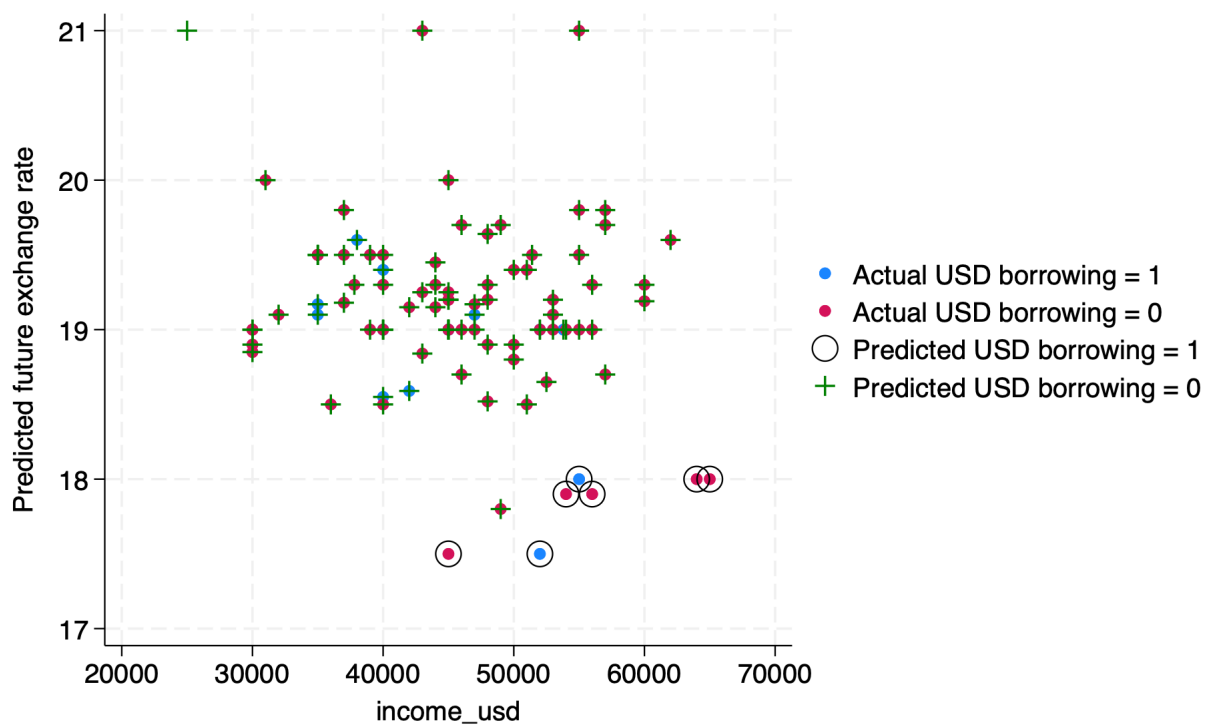
Figure 12: Actual and predicted USD borrowing choices by income in USD and predicted exchange rate, $R_{USD} > R_{MX}$
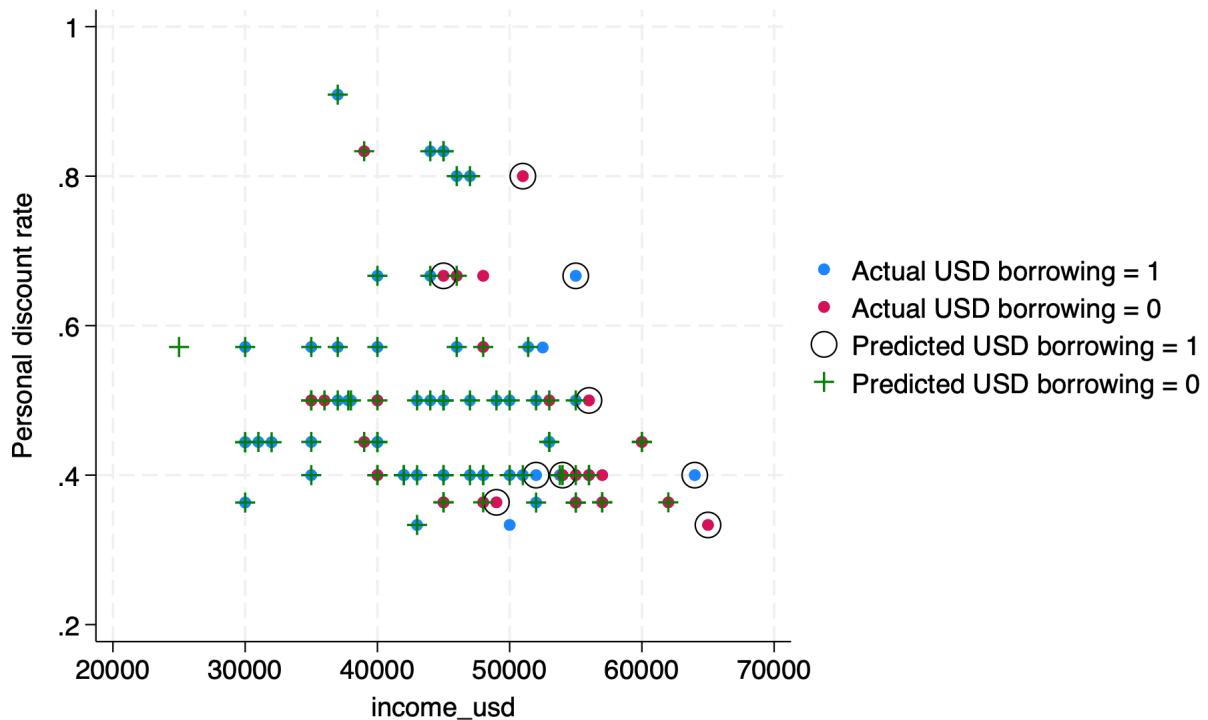
Figure 13: Actual and predicted USD borrowing choices by income in USD and personal time discount rate, $R_{USD} = R_{MX}$
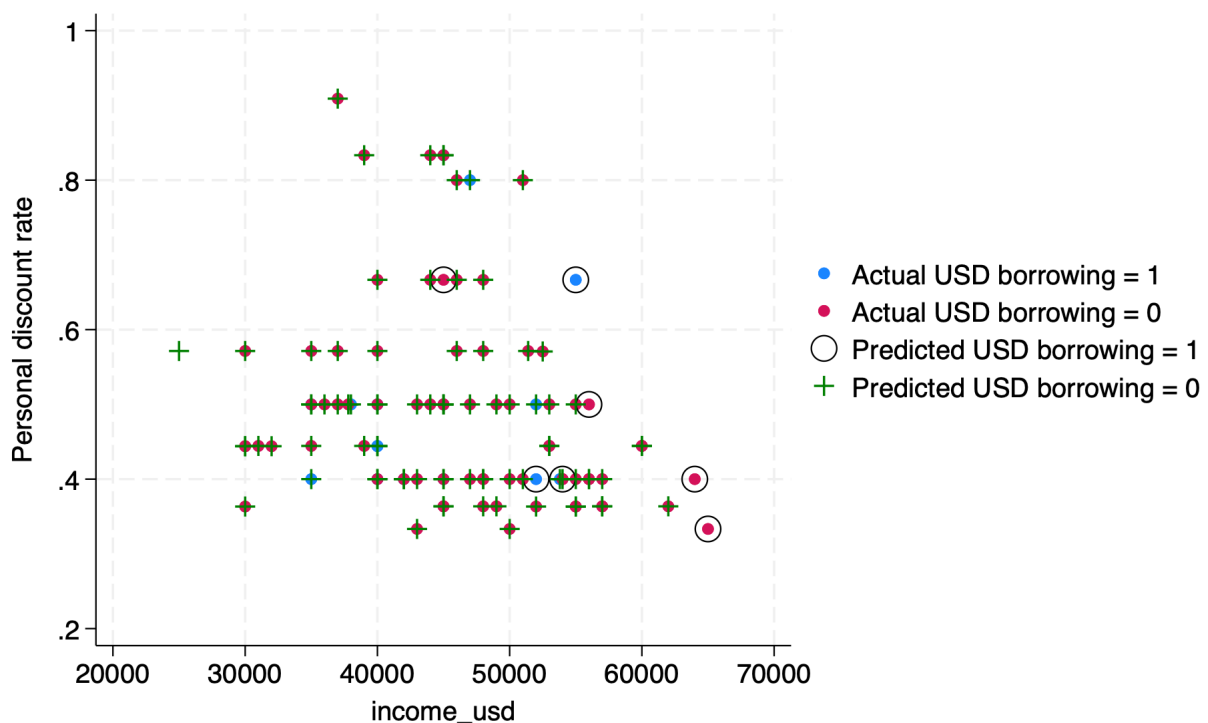
Figure 14: Actual and predicted USD borrowing choices by income in USD and personal time discount rate, $R_{USD} > R_{MX}$

5.12.2 Dollar-only consumption model

Figures 15-20 plot actual decisions to borrow in USD for each participant who responded to the choice questions where $R_{USD} = R_{MX}$ and $R_{USD} > R_{MX}$ (dollar rate being 110% of the peso rate) and predicted decisions from the dollar-only consumption model. The participant responses to the personal finance and select behavioral questions serve as inputs for the model.

The model predictions match the actual choices more closely when $R_{USD} = R_{MX}$, which is different from the peso-only consumption model. This result follows existing empirical evidence that households with a big proportion of foreign currency income (in this case the dollar) prefer foreign currency borrowing (see Aiba, Odajima, and Khou 2018). Figures 15 and 16 plot actual and predicted decisions by income in USD and level of RRA. Higher income correlates with higher RRA. But while those in the middle range of the RRA scale and higher incomes optimally choose to borrow in dollars, the respondents on the upper end of the RRA scale suboptimally choose peso borrowing

(see Figure 15). Figures 17 and 18 plot actual and predicted decisions by income in USD and predicted future exchange rate. Higher income tends to coincide with more optimistic predictions for the peso movement/more pessimistic predictions for the dollar - expected depreciation of the dollar. Results seem to be inconsistent for the actual vs predicted choices. Figures 19 and 20 plot actual and predicted decisions by income in USD and personal time discount rate. Those with higher income tend to have lower discount rates and are suboptimally choosing pesos for borrowing (see figure 19).
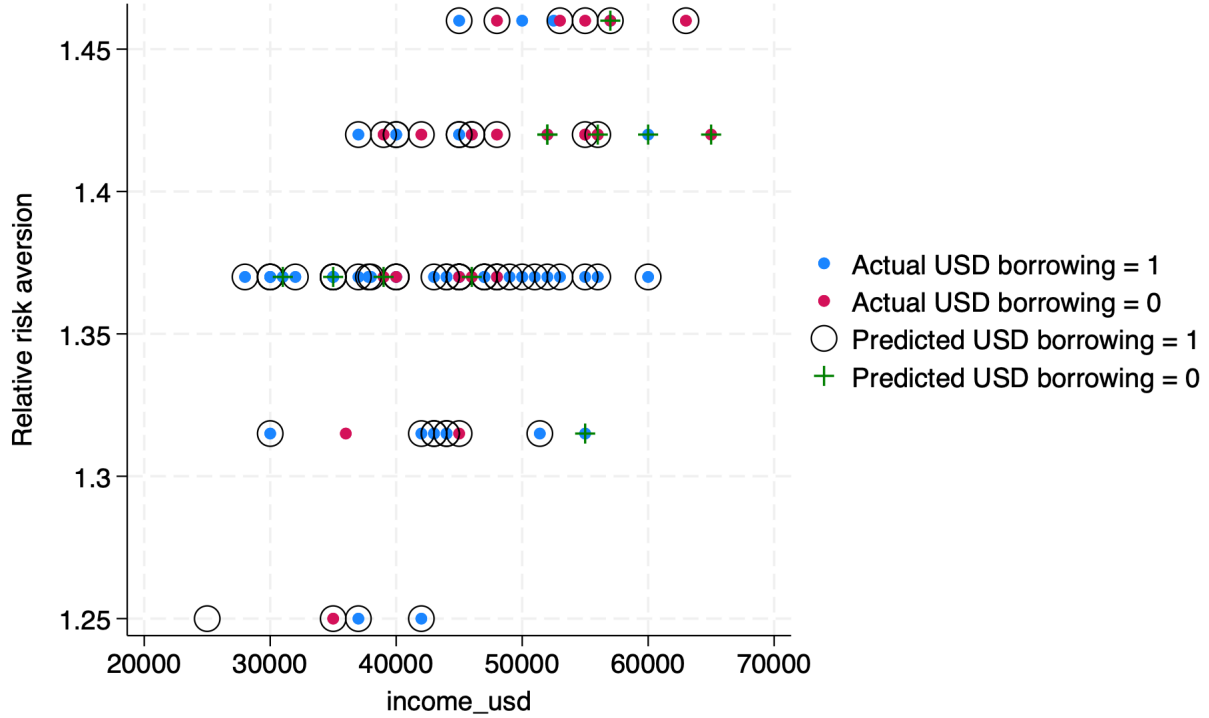
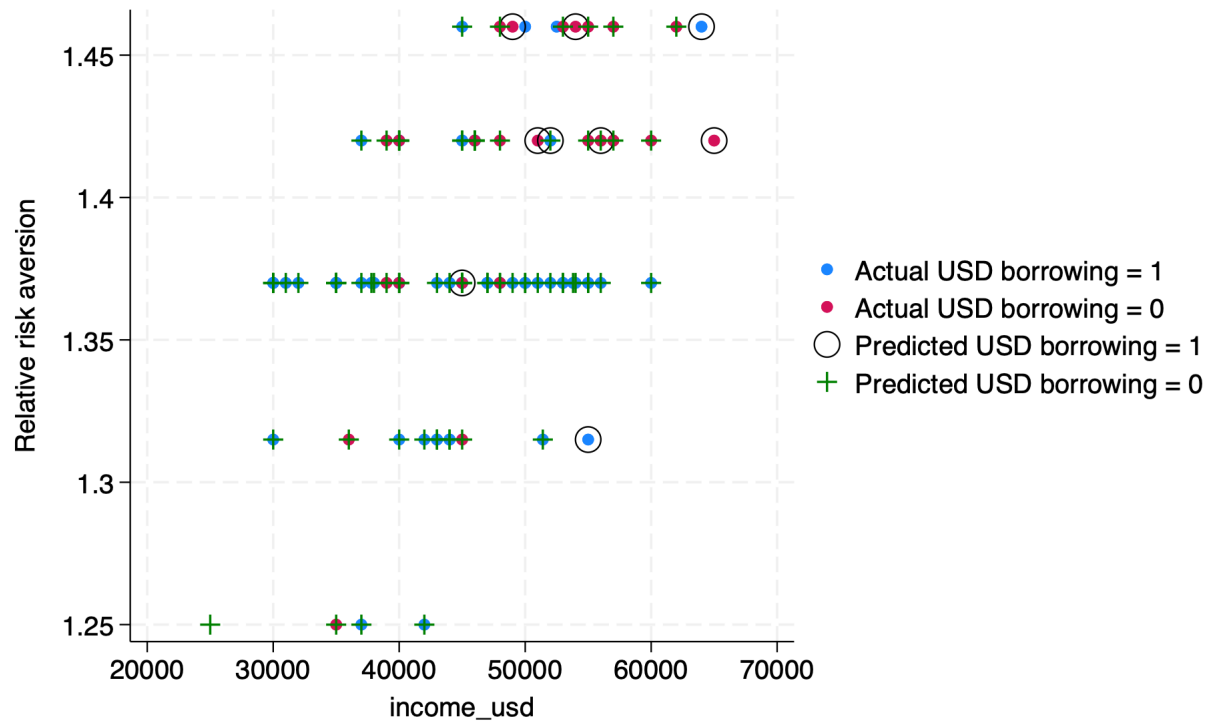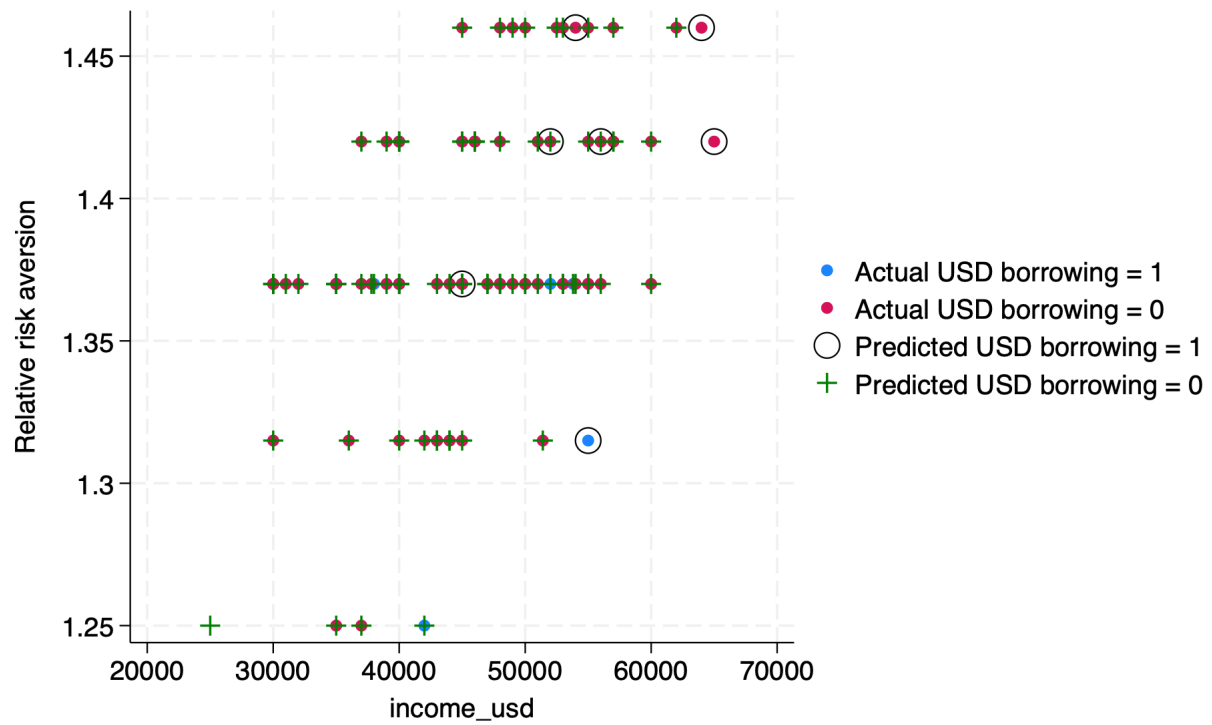Figure 15: Actual and predicted USD borrowing choices by income in USD and RRA, $R_{USD} = R_{MX}$
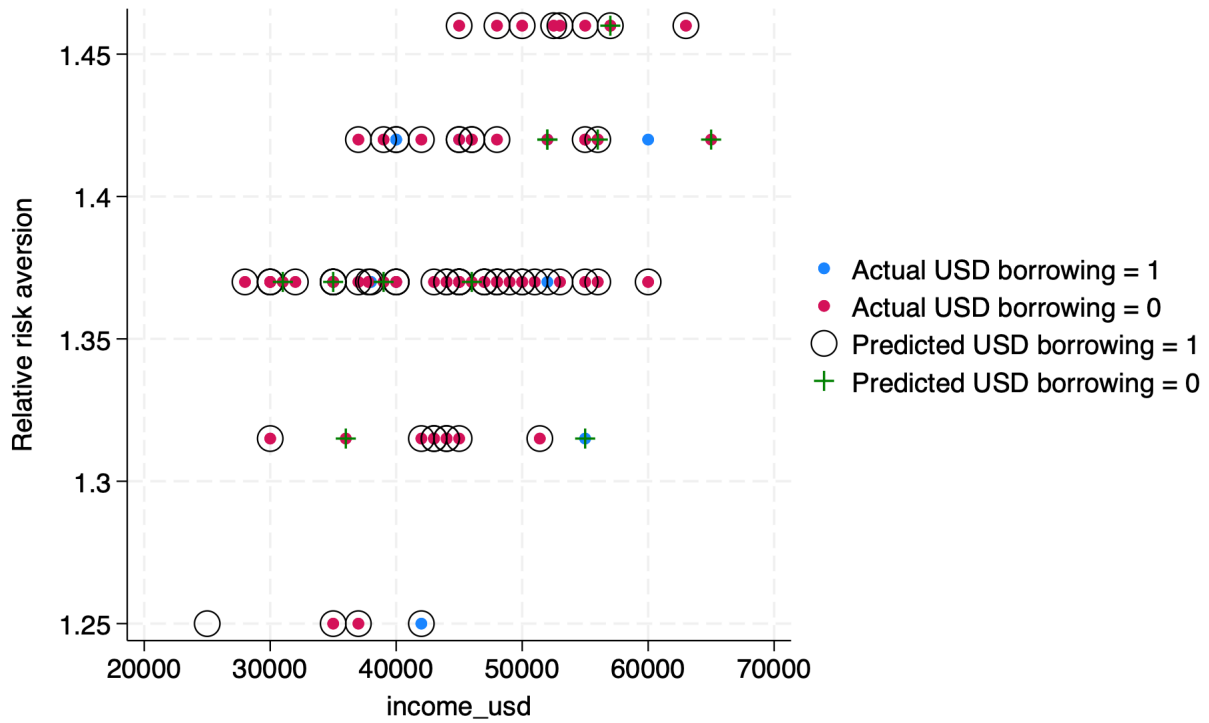
Figure 16: Actual and predicted USD borrowing choices by income in USD and RRA, $R_{USD} > R_{MX}$
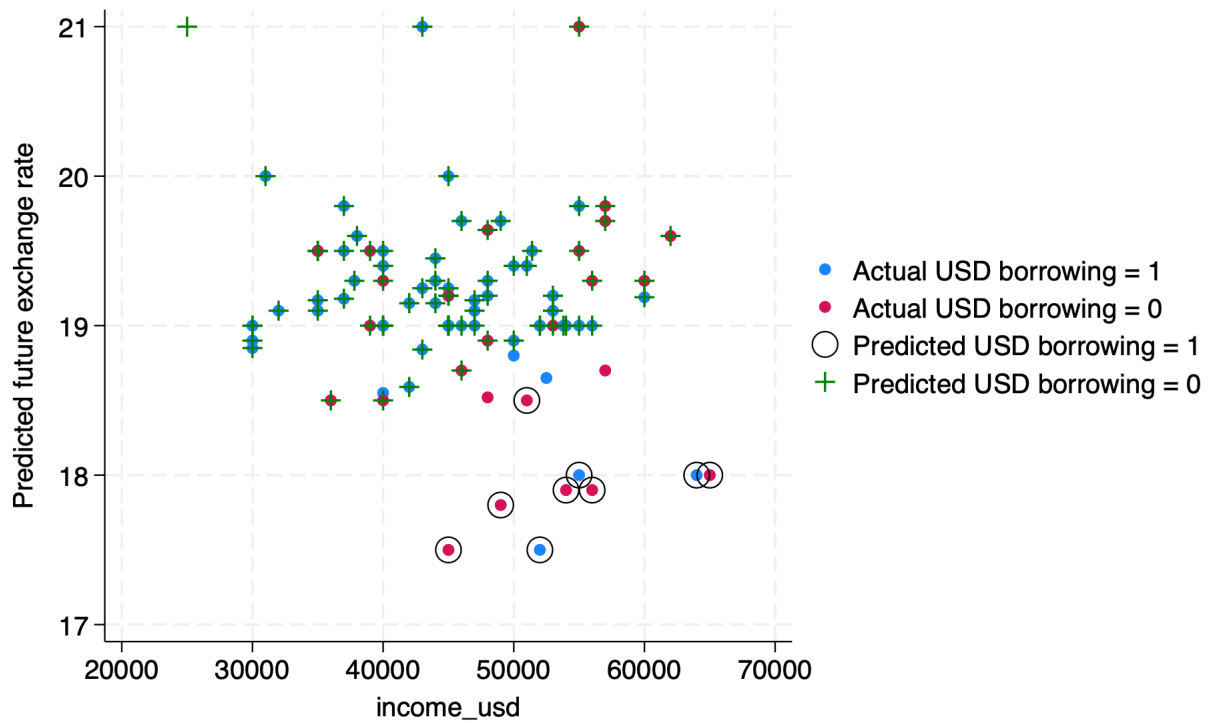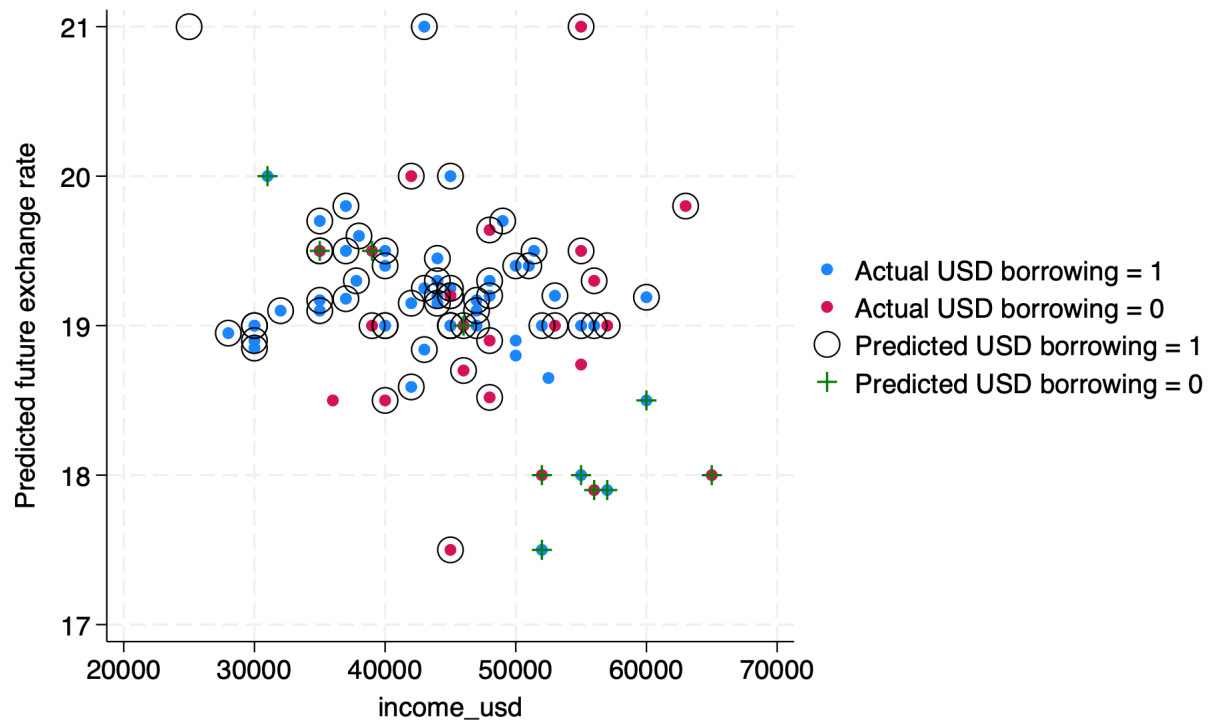
Figure 17: Actual and predicted USD borrowing choices by income in USD and predicted exchange rate, $R_{USD} = R_{MX}$
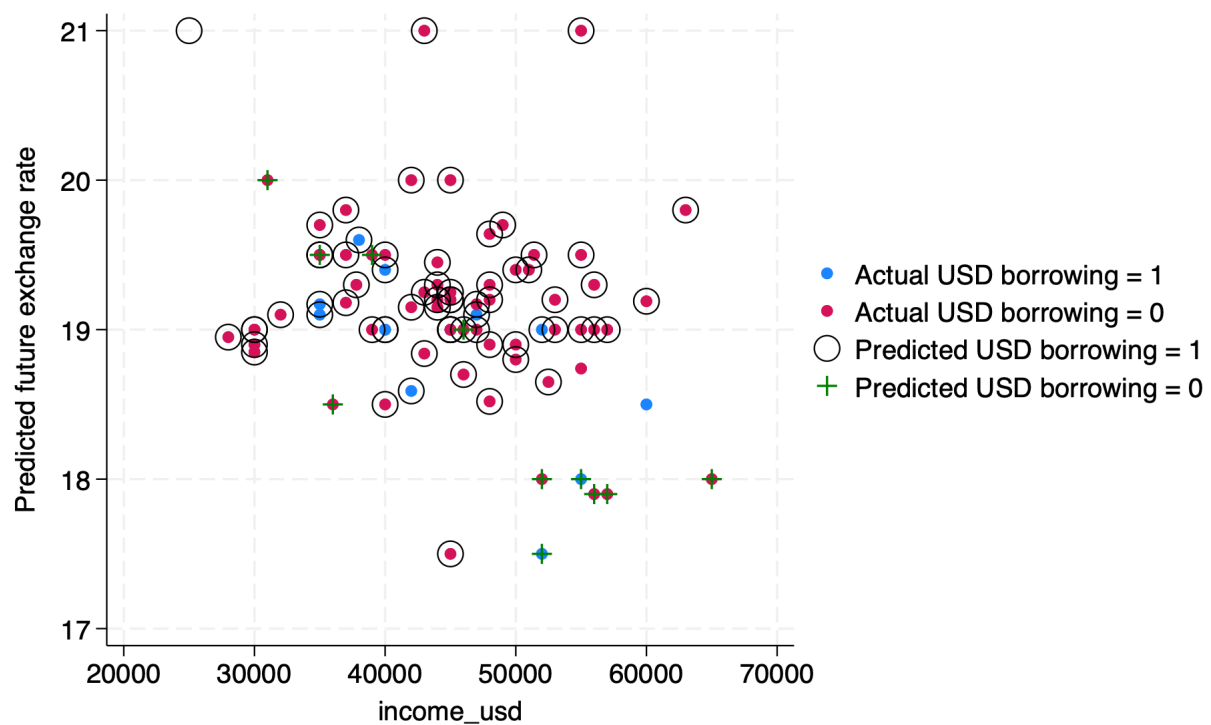
Figure 18: Actual and predicted USD borrowing choices by income in USD and predicted exchange rate, $R_{USD} > R_{MX}$
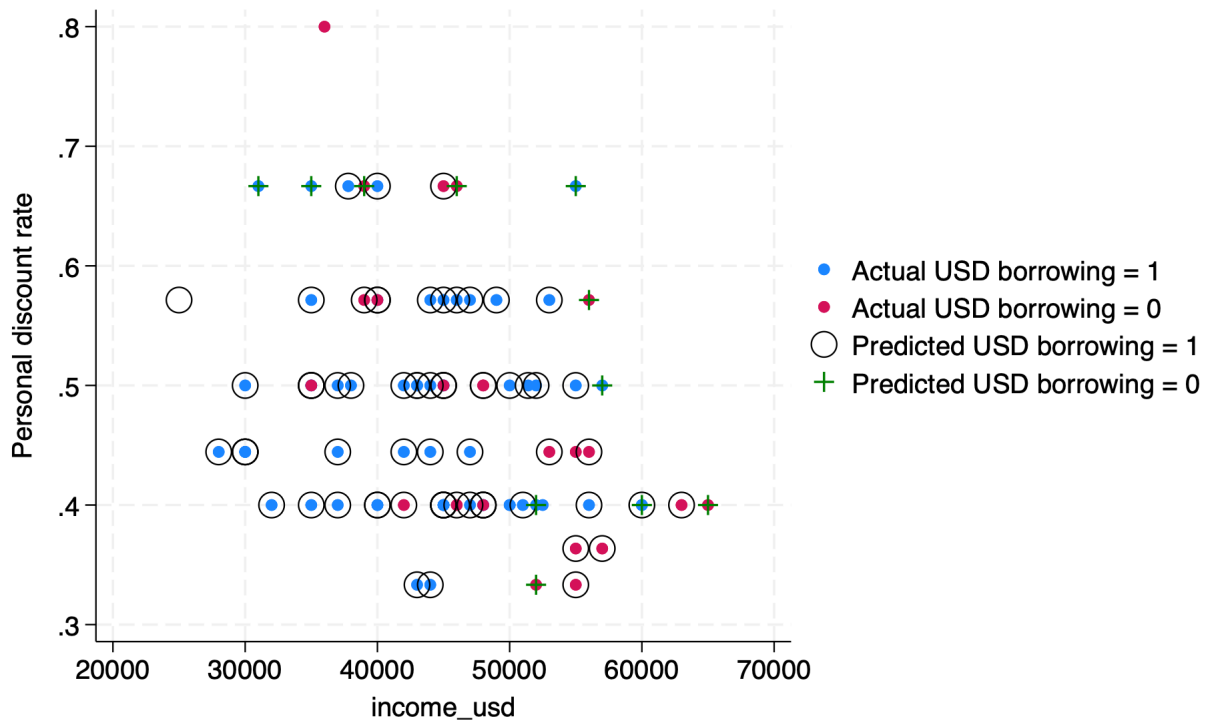
Figure 19: Actual and predicted USD borrowing choices by income in USD and personal time discount rate, $R_{USD} = R_{MX}$
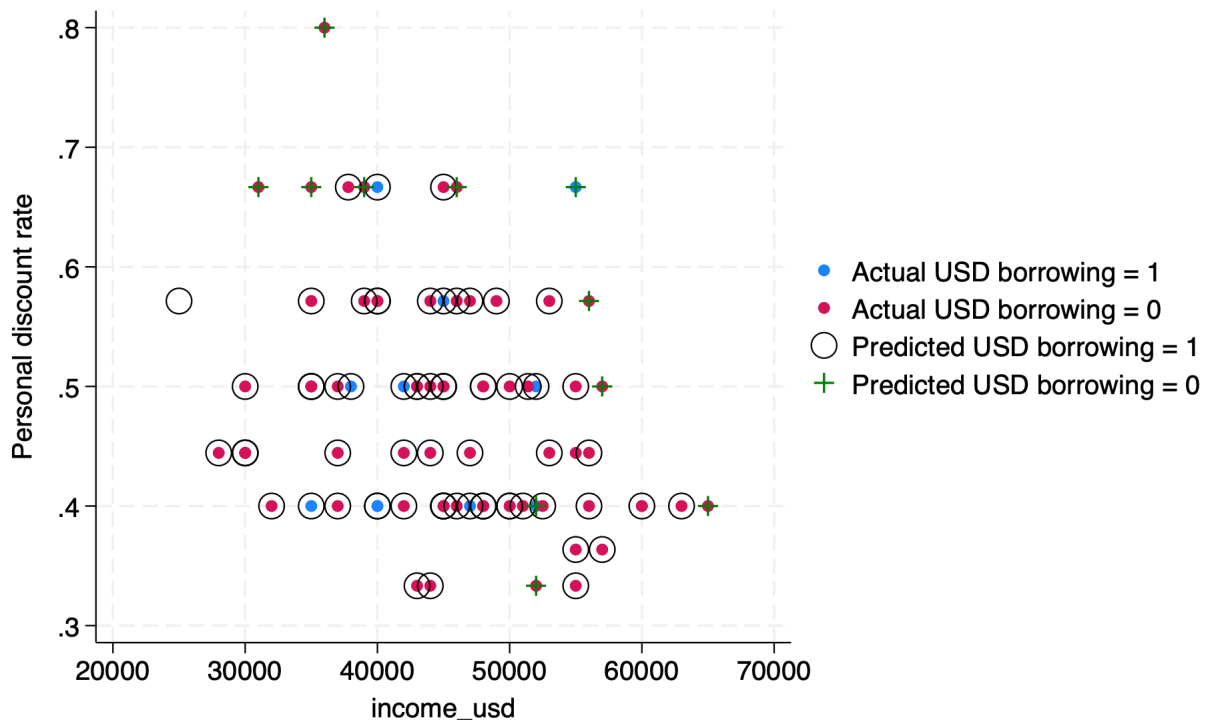
Figure 20: Actual and predicted USD borrowing choices by income in USD and personal time discount rate, $R_{USD} > R_{MX}$

6 Survey

6.1 Eligibility criteria

The survey was conducted with a sample of U.S-Mexico dual residents. To be eligible for the survey, the participant needs to conduct at least one of the three activity types - residing, earning money, or spending money - in both the United States and Mexico. The participants were recruited via Facebook targeted advertisements that appear in the home page feed, as well as in video break segments on Facebook and Instagram reels. The ad and the survey are in English.

6.2 Recruitment strategy

I used targeted Facebook advertisements via the Meta Business Suite to recruit the experiment participants. Facebook as a recruitment platform is optimal for my setting for 3 reasons: (1) ease

of use for setting up the marketing campaign, (2) low cost, and (3) large number of Hispanic users on the platform. As of April 2023, there were 2.9 billion active users globally and an estimated 239 million users in the U.S. According to the IPSOS MediaCT survey that was commissioned by Meta, Facebook is the number 1 platform for the Hispanic population in the U.S., which is currently estimated at 53 million. 71% use Facebook on a daily basis, and 60 percent use Messenger on a daily basis. The descriptive statistics for the final survey show that I was able to reach the target demographic through this recruiting method. Across 3 survey implementations, I spent about $300 on advertisements.

6.3 Survey design

The interest rate anchoring task exploring the borrowing currency shift involves a choice between equivalent peso and dollar interest rates. 138 participants completed the final version of a personal credit survey in exchange for a $25 Amazon digital gift card at the end of July and beginning of August 2024. The two pilot surveys in June and July 2024 included 31 and 30 respondents respectively. The pilot surveys were conducted in order to understand the demographic reach of the survey and to calibrate the values in time discount, risk preference, and interest rate choice questions.

The respondents were asked questions about their residence and the countries where they earn and spend money, as well as the currency composition of their earning and spending. These questions are followed by 3 blocks of preference questions: time preferences (today vs. tomorrow), risk preferences (certain vs. risky, following the methodology by Holt and Laury 2002), and interest rate preferences. Finally, the respondents answered a set of basic demographic questions (age, gender, education, marital status, number of people in the household). The main survey was conducted on the Qualtrics platform, and the payment form was disbursed in RedCap due to IRB and Information Security office regulations. Qualtrics responses were fully anonymized. To prevent the respondents from participating in the survey multiple times, I used RelevantID software that prevents fraudulent responses and detects bot responses.

6.4 Personal finance survey

6.4.1 Survey design

I use Qualtrics to design a personal credit survey. The characteristics reported by the participants include income and spending, age, gender, education level, and marital status. There are also questions on citizenship and countries where spending and earning are conducted. Income and expenses are broken down by currency of denomination (pesos and dollars). I also ask about bank account and credit card ownership in both countries, as well as credit card balances. I use instructional language similar to Andreoni and Sprenger (2012) to provide details on the survey and payoffs, as well as information collection guidelines, to the participants. Participants received a $25 digital Amazon gift card for survey completion. The actual survey questions, displayed in order of appearance, are included in Appendix C.

The first part of the assessment involves two time preference tasks with sixteen paired choices. More specifically, the participants will choose between a fixed amount of money today versus a larger sum of money tomorrow. The first task is denominated in dollars and the second one is denominated in pesos. Participants are randomized into 3, 6, and 12-month reference point groups. The second part of the assessment involves a risk aversion assessment with one round of eight paired choices, following Holt and Laury (2002).

The third part of the survey focuses on interest rate and currency preferences. Participants are presented with seven paired choices of interest rates for dollar and peso loans, with an anchor rate in one of the currencies. The anchor rate is defined in my study as the rate reported by the participants in the introductory part of the survey (rate on the most recently obtained loan). If the participants did not report any previous loans either in dollars or in pesos, they were assigned the peso base rate. This is due to the fact that I try to identify the switching point at which the borrowers would be willing to move their currency of choice from dollars, which for most respondents is the main currency for all financial transactions, to pesos, if given a flat peso rate in comparison to varying dollar rates. The rates in the opposing currency are then generated using various multipliers, ranging from 50% to 150% of the anchor rate. The current exchange rate is reported as of the day when the survey is conducted. Finally, the respondents are asked to answer various demographic questions

(age, gender, education, and number of people in the household). Then participants proceed to the payment information form on Redcap to comply with the IRB requirements.

7 Empirical analysis

7.1 Data quality check

Online surveys, especially the ones that are distributed via open social media channels and offer monetary compensation for participation, are subject to bot attacks and a high possibility of fraudulent and duplicate responses. Bonett et al. (2024) document that depending on the fraud detection methodology, only 40-55% of responses in the online survey can be deemed valid [8]. Keeping all of these issues in mind, I established a multi-step process for cleaning data and identifying fraudulent responses. First, I remove all responses that were flagged as duplicate in the Qualtrics data. Secondly, I use numeric values for the Google-designed Recaptcha score to identify bot responses. The scale for the scores is from 0 to 1. Per recommendation from Qualtrics, scores below .5 indicate bot responses. I remove these observations from the data as well. Finally, I utilize Qualtrics fraud scores to identify fraudulent responses. This technology utilizes web browser data for every respondent and calculates the probability for the response being fraudulent. The scores range from 0 to 130, with 130 indicating the response being fraudulent for sure.[3] Generally, Qualtrics specialists recommend filtering out any responses with scores over 30. However, upon the manual review of responses across the two pilot surveys and respondent email validity checks,[4] I determined that scores between 30 and 50 frequently defined responses as fraudulent incorrectly. Thus, I filter out all responses with scores above 50. The resulting number of valid observations - 138 out of 249[5] - is consistent with the percentage of valid responses using the standard Qualtrics fraud detection methodology mentioned in Bonett et al. (2024) [8].

7.2 Summary statistics

In total, 138 respondents were identified as valid in the survey. Table 1 describes their financial and personal characteristics. All respondents earned income in USD, with an average being just under $60,000 per year. 127 respondents also have income in pesos. The average income in pesos is just under $16,000 in dollar equivalent, meaning that the average respondent's total income would be around $76,000. In comparison, the average total annual income was around $85,000 and $69,000 in the two pilot samples. The majority of the participants - over 75% - hold a bachelor's degree or equivalent, and 8% hold advanced degrees, which are defined as master's, doctoral, or their equivalent (see table 6). The average age is around 40, and the average household size, which is defined as number of persons living under one roof, is around 4.[6] Most respondents are men (77%), which is consistent with the two pilot surveys, where 81% and 83% of respondents were male.

While the majority of the sample (73.9%) reports their residence as USA-only, the spending and earning patterns look more diversified across the two countries. The average proportion of spending in dollars is just under two-thirds of all spending done by the respondent (see table 1). Table 3 describes sample statistics for residence, earning, and spending patterns. Most respondents earn money in both countries (56%), and an overwhelming majority of participants spend their earnings in both countries (91%). Table 4 describes formal bank account and credit card ownership. While most respondents report having checking and savings accounts in both countries (52% and 80% respectively), the majority only have credit cards in the United States (69%). Among those who do have credit cards, 32 respondents report either carrying a balance or not being sure if they carry a balance. 27 respondents opted into responding to the question about credit card balances in dollars and pesos. The average balance on dollar credit cards is higher than on peso credit cards - $11,609 versus $4,320. It is possible that the higher balances on USD-based credit cards are related to more spending being done in dollars and within the U.S. than in pesos and within Mexico.

Only ten respondents reported having any kind of a personal loan within the designated period of time (3, 6, or 12 months, which was assigned randomly). The statistics on loan characteristics are reported in Tables 7 and 8. Nine out of ten reported loans were denominated in dollars and five out of ten were mortgages.

---

[3]Qualtrics does not disclose how the scores are calculated exactly, as the technology is proprietary.

[4]The validity checks included email address checks against first and last name, misspellings checks, address structure checks, and active/inactive account checks.

[5]Meaning 55.4% of all responses are deemed as valid.

[6]This is similar to the statistics from the two pilot surveys.

7.3 Time value of money task and implied interest rates

Tables 20-25 in Appendix A report statistics for participant responses to the two time discount tasks with 16 choice situations each. The task in dollars used $100 as the base value (option A) and then increased the value by a certain amount of interest in various increments. The task in pesos used 1,000 pesos (approximately $52-55) as the baseline value. To generate interest rates for 3- and 6-month terms, I used simple interest conversion from annual rates to quarterly and semi-annual rates. The number of switchers (column 4 in tables 20-25, Appendix A) is defined as the cumulative number of people switching from option A to option B. Numbers in brackets () identify cumulative switching from option B to option A.

The task results show that the three-month group has the highest discount rates on an annualized basis, thus exhibiting higher degrees of impatience. For both dollar and peso 3-month tasks, the biggest participant switch from option today to option in the future occurs at the 37.5% discount rate on 3-month basis, or 150% discount rate on annual basis. In comparison, for the 6-month tasks, the biggest switch occurs between 50-62.5% (100-125% annually) for the dollar task and at 50% (100% annually) for the peso task. For the 12-month task, the biggest switch is between 75-100% for the dollar task and at 100% for the peso task. I use the sequence of answers for every participant to calculate individual discount rates that are later used in the logistic regression specifications, where I predict the propensity of borrowing in dollars.

In total, I was able to generate reliable discount rates for 90 participants from the dollar task data and for 97 participants from the peso task data across all discount periods. For each participant, discount rates are calculated at the point where the answers switch from A to B. For instance, if a participant chooses A for the first six questions and B for the next ten questions, the discount rate is equal to answer B in question 7 divided by the baseline value from answer A. As not all participants displayed such consistency in their responses, I was only able to generate discount rates for 65-70% of all observations. The rest of the observations may display discounting patterns that are informed by unique biases which are impossible to track in my survey. The discount rate distributions for the 3 term groups can be seen in table 9.

7.4 Risk aversion estimations

Table 26 in Appendix A describes the results of the risk aversion/lottery task. Every single participant received the same questions with the same instructional language, regardless of what term group they were in. Option A presented a guaranteed payoff of $50, and option B presented a payoff of $100 with varying probabilities across eight choices. The number of switchers (column 4 in table 26 in Appendix A) is defined as the cumulative number of people switching from option A to option B. Numbers in brackets () identify cumulative switching from option B to option A.

I use a system of equations in Matlab to numerically estimate the upper and lower bounds of the relative risk aversion for every participant. The equations are as follows:

$$lb = \frac{50^{1-r}}{1-r} > p^B * \frac{100^{1-r}}{1-r}, \tag{33}$$

$$ub = \frac{50^{1-r}}{1-r} < p^B * \frac{100^{1-r}}{1-r}, \tag{34}$$

where r is the coefficient of relative risk aversion and p^B is the probability of payoff in option B. To generate the numeric solutions, I assume that all respondents are risk averse ($r \geq 0$). I then take the average of the upper and lower bounds to calculate the relative risk aversion coefficient for every observation. These values are later used in the logistic regression specification as one of the predictor variables, where I predict the propensity of borrowing in dollars. I only generate RRA values for respondents with consistent response patterns (all A responses followed by all B responses after a certain point). Following this methodology, I am able to obtain RRA coefficient values for 108 participants (78.2% of all respondents). The summary statistics for the RRA coefficients (averages calculated from the lower and upper bounds) are demonstrated in table 10. The average RRA coefficient is 1.38, consistent with the major switching point being at question 6, where option B offered an expected payoff of $80.

7.5   Borrowing in dollars or pesos with peso anchor rate

The final task in the survey involves the interest rate choice between dollar rates and peso rates. Tables 27-31 in Appendix A report statistics for participant responses to the seven choice situations for the variants of questions with the dollar anchor rate and the peso anchor rate. As there were only ten participants who were assigned to the dollar anchor rate set of questions, I did not include detailed statistics by term groups. Table 28 in Appendix A reports the results for the peso anchor rate set of questions for all term groups. The base rate in pesos was 11% for all but one participant, as most participants had no previous borrowing experience and a central bank of Mexico rate was used instead. The dollar rates were generated as percentages of the peso rate. Most participants make a switch to selecting peso borrowing at choice situation 5 - the point where the dollar rate is 110% of the peso rate. This is consistent across all term groups (see tables 29-31 in Appendix A). The distribution of switchers for each task is reported in figures 21-24. Switchers are defined as the cumulative number of participants switching from dollar to peso borrowing at every task. Negative values represent switching from choosing pesos to choosing dollars.

Variable	N	mean	min	max	p25	p50	p75	SD
Annual income, $	138	59,438	0	300,000	40,000	49,000	60,000	38,438
Annual income, pesos (USD equivalent)[7]	127	15,627	0	175,596	0	13,382	20,747	22,127
% spent in USD	138	64.5	21.0	99.0	55.0	60.0	79.0	16.0
Credit card debt in USD	27	11,609	0	100,000	400	3,000	5,000	26,231
Credit card debt in pesos (USD equivalent)[8]	27	4,320	0	53,586	21	260	520	13,587
Age	138	39.6	19.0	57.0	35.0	38.0	44.0	7.3
Household size	138	4.1	2.0	8.0	3.0	4.0	5.0	1.1

Table 1: Financial and personal characteristics for survey respondents

Exchange rate in...	N	mean	min	max	p25	p50	p75	SD
3 months from the day of the survey	39	19.07	18.00	21.00	18.74	19.00	19.30	0.52
6 months from the day of the survey	50	19.19	17.80	22.00	18.90	19.10	19.50	0.68
12 months from the day of the survey[9]	49	18.58	1.87	21.00	18.46	19.00	19.30	2.53

Table 2: Expectation for pesos per \$1 for different terms[10]

Respondent %	Mexico only	USA only	Mexico and USA
Lives in...	-	73.9	26.1
Earns in...	0.7	43.5	55.8
Spends in...	5.1	4.3	90.6

Table 3: Living, earning, and spending statistics

---

[7]According to the exchange rate of 19.24 pesos per \$1 as of August 7, 2024.

[8]According to the exchange rate of 19.24 pesos per \$1 as of August 7, 2024.

[9]Without the outlier of 1.87 (which was likely a typo), the mean for this group is 18.93.

[10]Participants were randomized into 3 different "term" groups: 3 months, 6 months, and 12 months. The exchange rate ranged from 18.46 to 18.80 pesos per \$1 for the duration of the study.

Respondent %	Mexico only	USA only	Mexico and USA
Has a checking account in...	4.3	43.5	52.2
Has a savings account in...	1.5	18.8	79.7
Has a credit card in...	8.0	69.3	22.6

Table 4: Bank account and credit card ownership statistics

Gender	% respondents
Male	76.8
Female	22.5
Non-binary	0.7

Table 5: Gender composition of respondents

Education level	% respondents
Below high school	0.7
High school or equivalent	2.2
Technical/community college or equivalent	12.3
Bachelor's degree or equivalent	76.8
Master's degree or equivalent	7.3
PhD or equivalent	0.7

Table 6: Education status of respondents

Statistic	Value
Had a personal loan within past 3, 6, or 12 months, %	7.2
Loan was denominated in dollars, %	90.0
Loan was a mortgage, %	50.0
Loan was obtained through a bank or a credit union, %	60.0
Average interest rate on reported dollar loans, %	8.7
Average interest rate on reported peso loans, %	7.0
Average value for reported dollar loans, $	52,500
Average value for reported peso loans, $	260

Table 7: Reported loan characteristics

Statistic	Value
Would have had access to loans in another currency **for sure**, %	30.0
Would have had a higher interest rate, %	66.7
Would have a lower interest rate, %	33.3

Table 8: Alternative loan options

Discount rate	N	mean	min	max	p25	p50	p75	SD
Dollar task, 3 months	26	.349	.013	.500	.313	.375	.375	.109
Peso task, 3 months	27	.311	.013	.438	.313	.375	.375	.130
Dollar task, 6 months	32	.625	.250	1.000	.500	.563	.750	.180
Peso task, 6 months	40	.583	.100	1.000	.438	.625	.750	.262
Dollar task, 12 months	32	.859	.500	1.500	.750	.750	1.000	.304
Peso task, 12 months	30	.982	.200	2.000	.750	1.000	1.250	.375

Table 9: Task 1: Distribution of discount rates across term groups and currencies (in decimal terms)

Variable	N	mean	min	max	p25	p50	p75	SD
Relative risk aversion coefficient	108	1.38	1.25	1.46	1.37	1.37	1.42	.05

Table 10: Task 2: RRA coefficient summary statistics
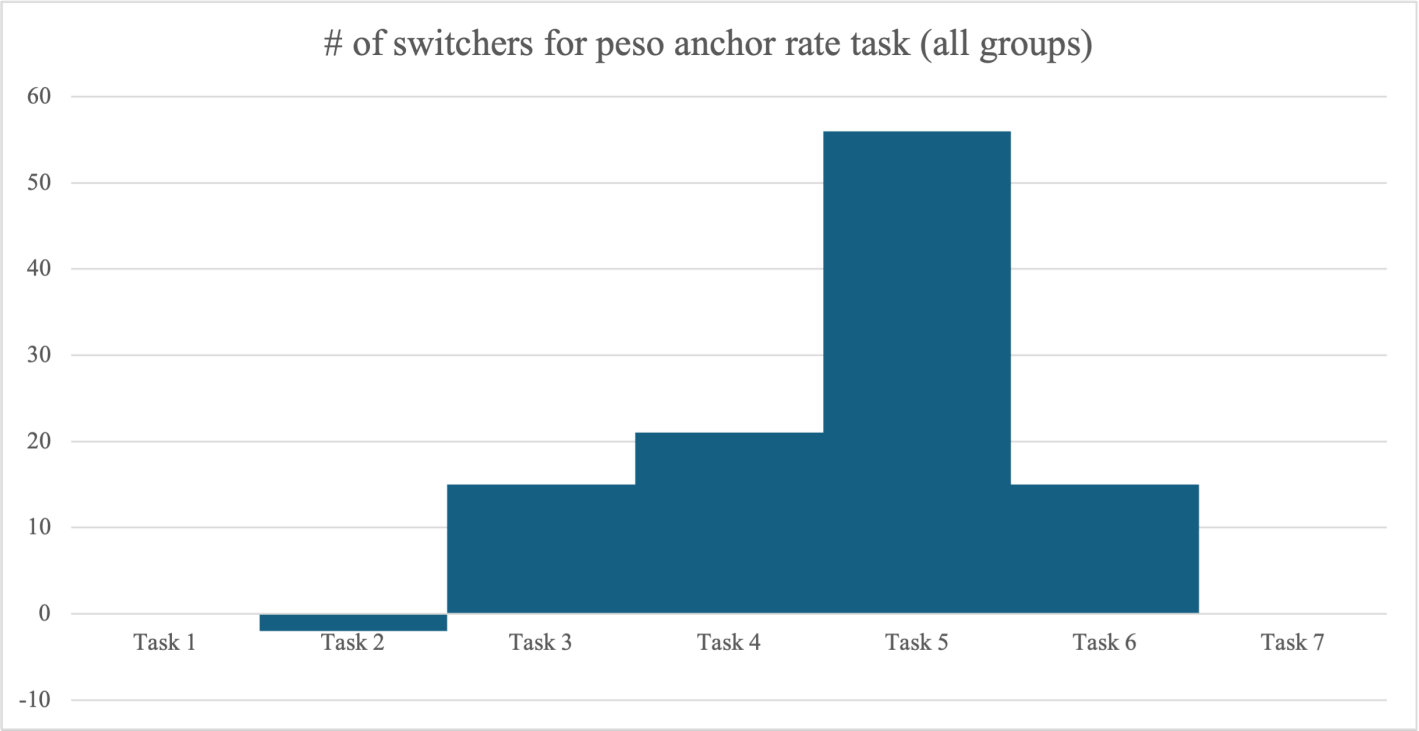
Figure 21: Distribution of switchers in the interest rate task (peso anchor, all time horizon groups)
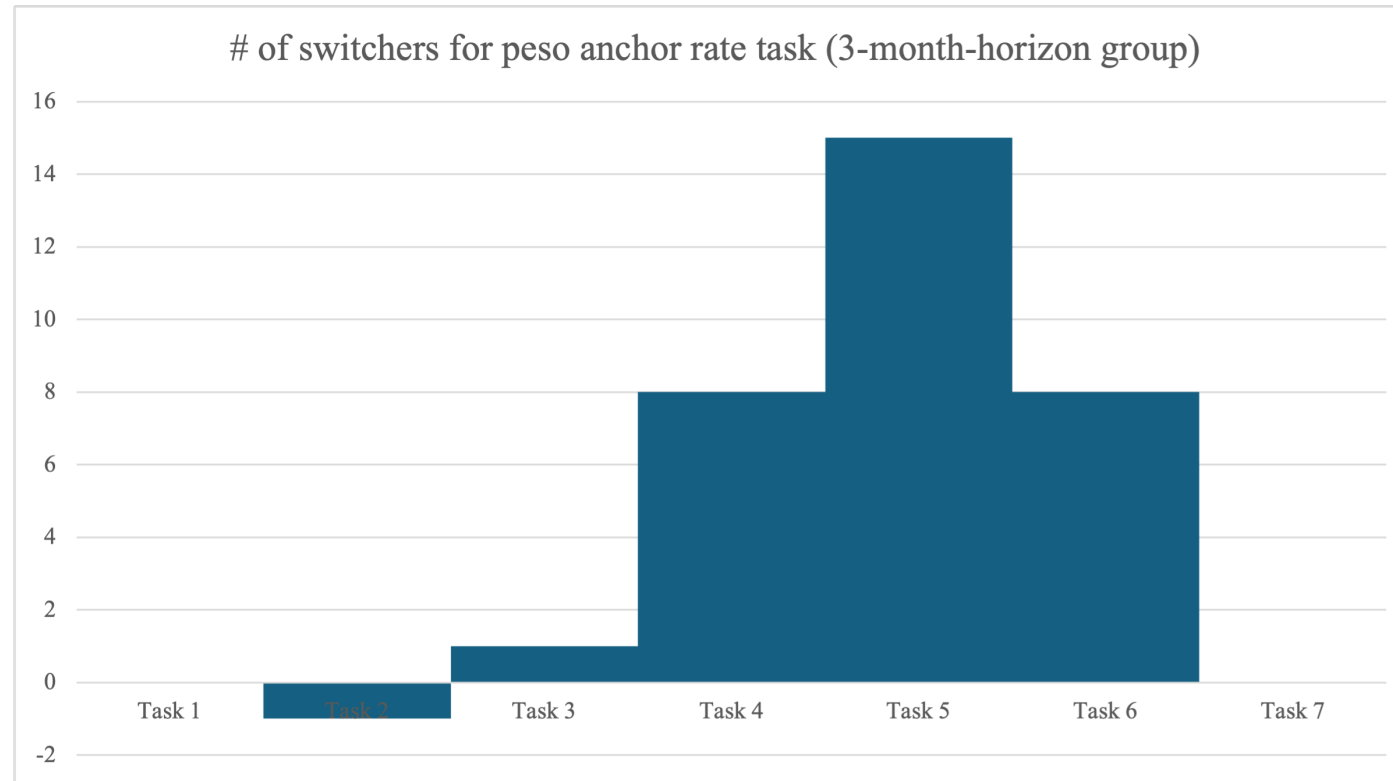
Figure 22: Distribution of switchers in the interest rate task (peso anchor, 3-month-horizon group)
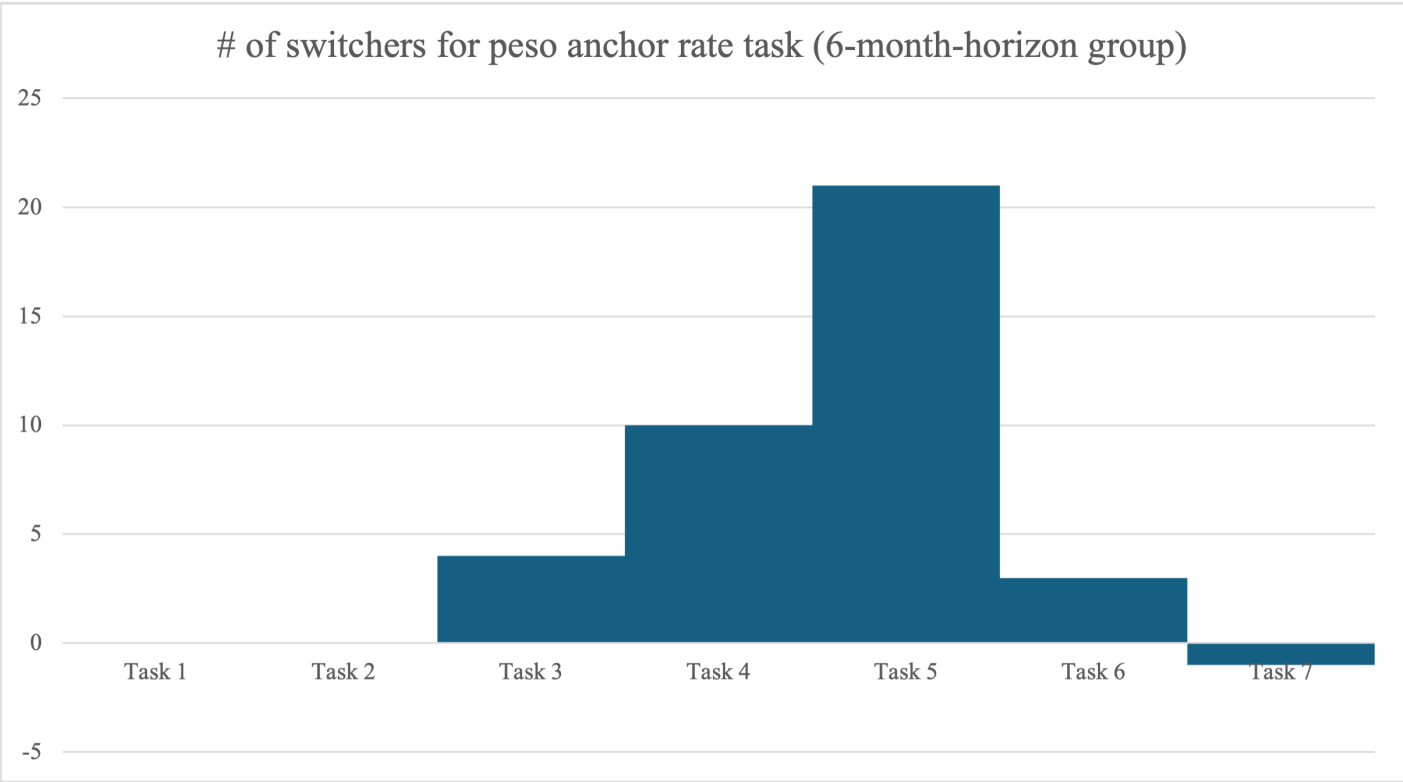
Figure 23: Distribution of switchers in the interest rate task (peso anchor, 6-month-horizon group)
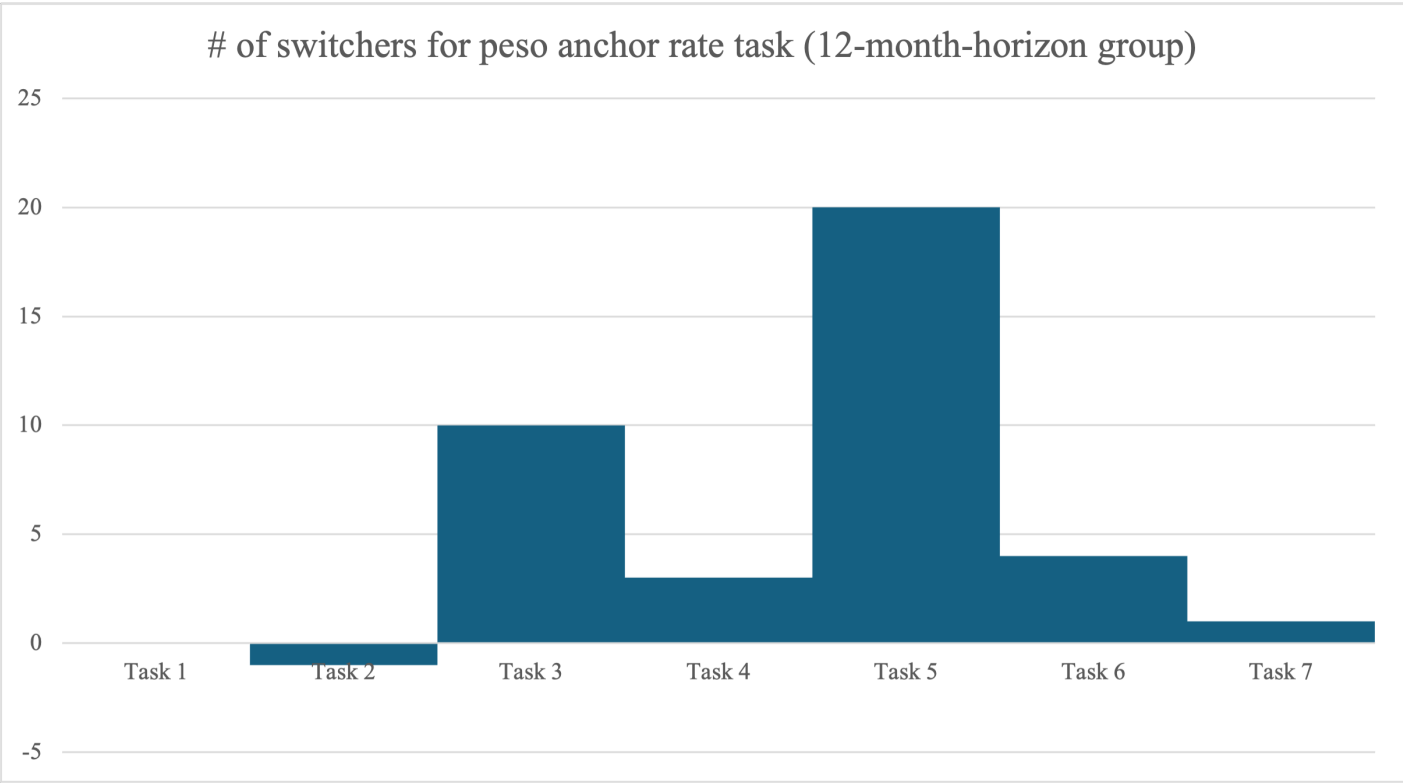
Figure 24: Distribution of switchers in the interest rate task (peso anchor, 12-month-horizon group)

7.6 Estimating the indifference rate

To quantify the choices in the interest rate task, I estimate the indifference rate for each participant. The indifference rate is estimated as the average between the two dollar rates: the rate in the last task in the sequence where the participant chooses option A and the rate in the first task in the sequence where the participant chooses option B. For instance, if the participant chooses dollar borrowing in tasks 1-3 and peso borrowing in tasks 4-7, I take the average of the dollar rates in tasks 3 and 4. The rates are estimated only for participants with consistent answer patterns (a sequence of As followed by a sequence of Bs, with no switching back to As).

Figure 25 demonstrates the distribution of the indifference rate values among 106 participants, for whom it could be estimated. The average indifference rate is 11.23% and the median is 11.55% (see table 11). This is consistent with the bulk of the participants switching to peso choice after task 4, with the task 5 offering a choice between 110% of peso rate in dollars and the base peso rate, which was 11% in most cases. Figures 26 and 27 break down the indifference rate distribution by annual income in pesos and dollars, as well as residence, earning, and spending patterns. Most of the observations fall into the category of "USA, 1, 1" (residing in the USA only, earning mostly in dollars, and spending mostly in dollars). The indifference rate for that group of survey participants ranges from 6 to 15 percent, with most observations clustered in the 10 - 12% range. For the group of respondents who reside in the USA only, are primarily peso earners, but spend mostly in dollars ("USA, 0, 1"), the indifference rate ranges from 8 to 12 percent, signifying higher sensitivity to increases in the dollar rate compared to the flat peso rate.
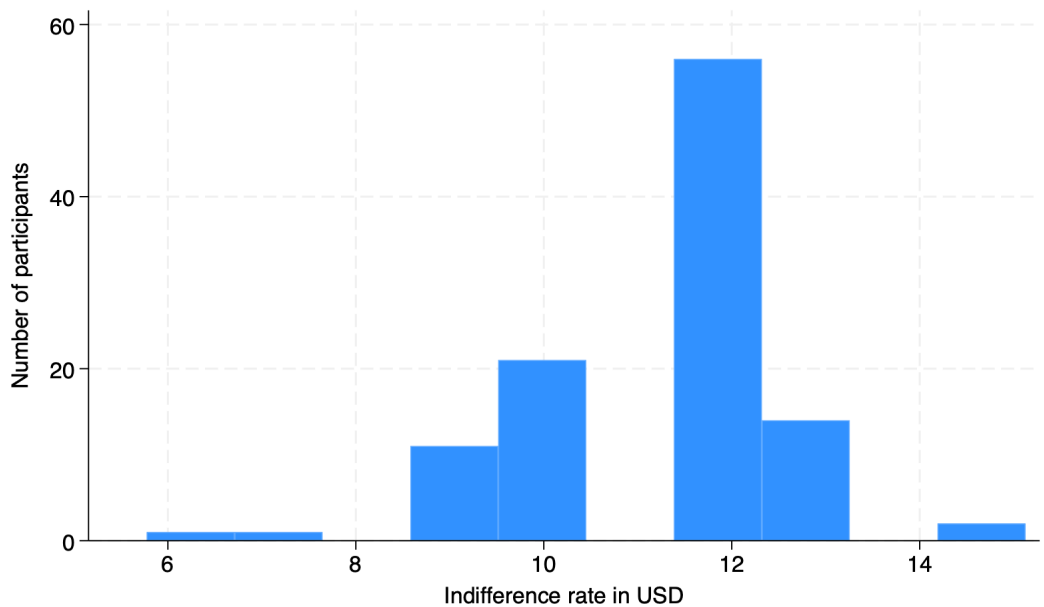
Figure 25: Indifference rate distribution from the interest rate task (peso anchor, all groups)

Variable	N	mean	min	max	p25	p50	p75	SD
Indifference rate, %	106	11.23	5.78	15.13	10.45	11.55	11.55	1.34

Table 11: Task 3: Indifference rate summary statistics
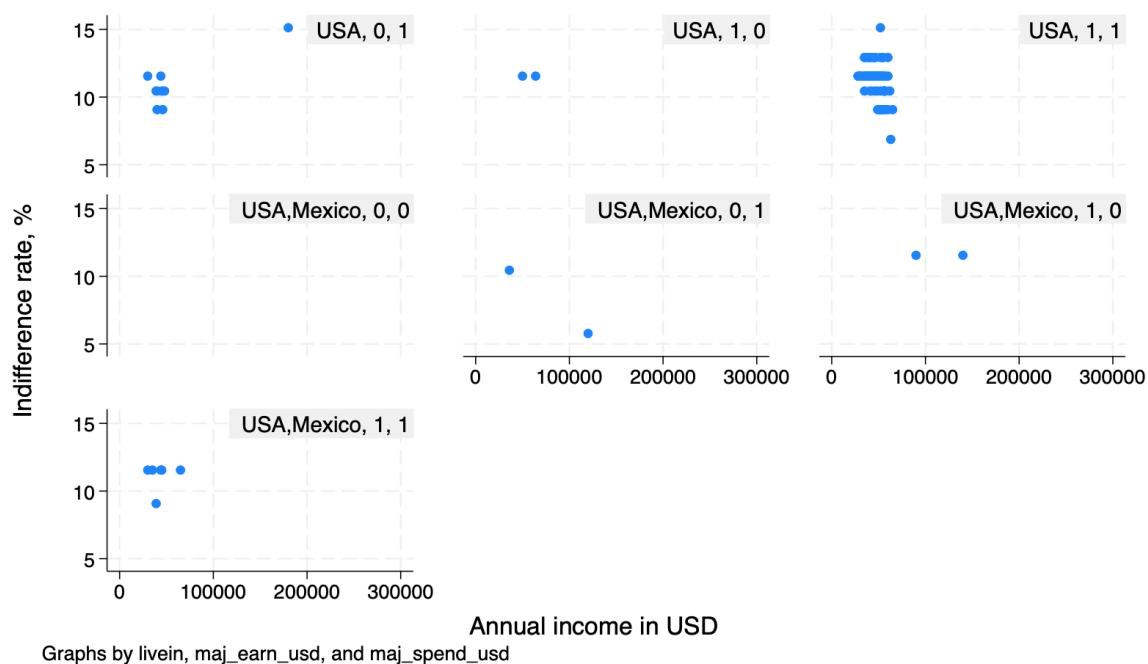
Figure 26: Indifference rate distribution from the interest rate task by dollar income, residence, and spending and earning patterns
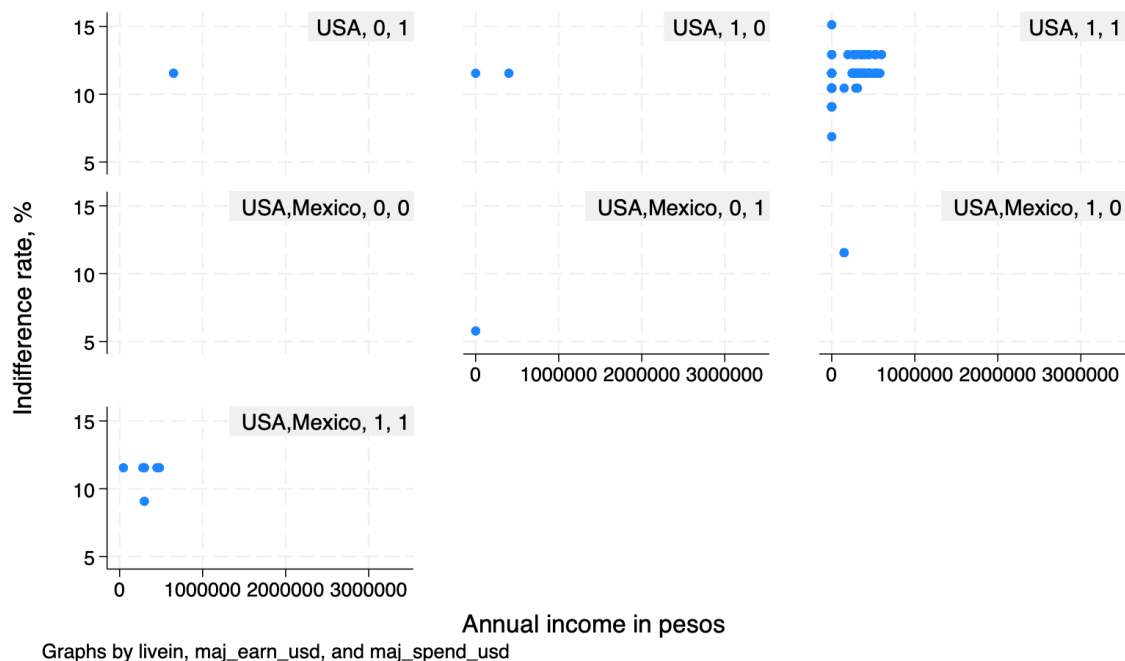
Figure 27: Indifference rate distribution from the interest rate task by peso income, residence, and spending and earning patterns

7.7 Regression design

To estimate the probability of borrowing in dollars based on the survey responses and the interest rate anchoring experiment, I use the following regression specification:

$$ln[\frac{p_{USD,i}}{1 - p_{USD,i}}] = \alpha_i + \beta_1 * X_i + \beta_2 * Z_i + \beta_3 * F_i + \epsilon_i, \tag{35}$$

- $p_{USD,i}$ - probability of borrowing in dollars;

- X_i - a vector of personal characteristics inferred from the survey;

- Z_i - a vector of economic variables;

- F_i - a vector of demographic variables.

38

X_i is defined as

$$X_i = (\gamma_i, T_i^\$, T_i^{MX}, I_{0,i}^\$, I_{0,i}^{MX}, I_{1,i}^\$, I_{1,i}^{MX}, i_{0,i}^\$, i_{0,i}^{MX}, C_{0,i}^\$, E[S_1]_i, Loan_i, R_i^{\$,hist}, R_i^{MX,hist}), \qquad (36)$$

where γ_i is the risk aversion level of the respondent, T_i are the personal time discount factors of the respondent from the two time value of money tasks, $I_{0,i}^\$, I_{0,i}^{MX}, I_{1,i}^\$$, and $I_{1,i}^{MX}$ are the current and anticipated incomes in dollars and pesos, $i_{0,i}^\$, i_{0,i}^{MX}$ are the current proportions of total income in dollars and pesos, $C_{0,i}^\$$ is the present day proportion of spending in dollars, $E[S_1]_i$ is the inferred respondent's exchange rate expectation, $Loan_i$ is the indicator variable for the past borrowing experience, and $R_i^{\$,hist}, R_i^{MX,hist}$ are the reported interest rates from the past borrowing experience.

Z_i is defined as

$$Z_i = (S_0, R_i^\$ - R_i^{MX}), \qquad (37)$$

where S_0 is the dollar-peso exchange rate at the time of the survey implementation, $R_i^\$$ and R_{MXi} are the interest rates at which the survey respondent switches from one currency to another.

F_i is defined as

$$F_i = (Age_i, MXResident_i, USResident_i, EarnUS_i, EarnMX_i, SpendUS_i, SpendMX_i, \qquad (38)$$

$$CheckingUS_i, CheckingMX_i, SavingsUS_i, SavingsMX_i, CCUS_i, CCMX_i,$$

$$Education_i, NHH_i, Gender_i),$$

where Age_i is the respondent's age, $MXResident_i$ and $USResident_i$ are the indicator variables for residence in Mexico and the United States, $EarnUS_i$ and $EarnMX_i$ are indicator variables for whether the respondent earns money in the United States and Mexico, $SpendUS_i$ and $SpendMX_i$ are indicator variables for whether the respondent spends money in the United States and Mexico, $CheckingUS_i$ and $CheckingMX_i$ are the indicator variables for checking account ownership in the United States and Mexico, $SavingsUS_i$ and $SavingsMX_i$ are the indicator variables for savings account ownership in the United States and Mexico, $CCUS_i$ and $CCMX_i$ are the indicator variables for credit card ownership in the United States and Mexico, $Education_i$ is the education level variable, NHH_i is the number of members in the respondent i's household, and $Gender_i$ is the respondent's gender.

The demographic variables come from survey answers by participants. Individual time discount rates are calculated using methodology outlined in section 6.3. Relative risk aversion coefficients are calculated using the method described in section 6.4. The expected income in dollars and pesos is calculated using 12-month federal funds rates for the U.S. and Mexico (5 and 11% respectively).

To estimate the variables' effects on the indifference rate, I use the following OLS specification:

$$IndiffRate_{USD,i} = \alpha_i + \beta_1 * X_i + \beta_2 * Z_i + \beta_3 * F_i + \epsilon_i, \qquad (39)$$

- $p_{USD,i}$ - probability of borrowing in dollars;

- X_i - a vector of personal characteristics inferred from the survey;

- Z_i - a vector of economic variables;

- F_i - a vector of demographic variables.

X_i is defined as

$$X_i = (\gamma_i, T_i^\$, T_i^{MX}, I_{0,i}^\$, I_{0,i}^{MX}, I_{1,i}^\$, I_{1,i}^{MX}, i_{0,i}^\$, i_{0,i}^{MX}, C_{0,i}^\$, E[S_1]_i, Loan_i, R_i^{\$,hist}, R_i^{MX,hist}), \qquad (40)$$

where γ_i is the risk aversion level of the respondent, T_i are the personal time discount factors of the respondent from the two time value of money tasks, $I_{0,i}^\$, I_{0,i}^{MX}, I_{1,i}^\$$, and $I_{1,i}^{MX}$ are the current and anticipated incomes in dollars and pesos, $i_{0,i}^\$, i_{0,i}^{MX}$ are the current proportions of total income in dollars and pesos, $C_{0,i}^\$$ is the present day proportion of spending in dollars, $E[S_1]_i$ is the inferred respondent's exchange rate expectation, $Loan_i$ is the indicator variable for the past borrowing experience, and $R_i^{\$,hist}, R_i^{MX,hist}$ are the reported interest rates from the past borrowing experience.

Z_i is defined as

$$Z_i = (S_0), \tag{41}$$

where S_0 is the dollar-peso exchange rate at the time of the survey implementation.

F_i is defined as

$$F_i = (Age_i, MXResident_i, USResident_i, EarnUS_i, EarnMX_i, SpendUS_i, SpendMX_i, \tag{42}$$

$$CheckingUS_i, CheckingMX_i, SavingsUS_i, SavingsMX_i, CCUS_i, CCMX_i,$$

$$Education_i, NHH_i, Gender_i),$$

where Age_i is the respondent's age, $MXResident_i$ and $USResident_i$ are the indicator variables for residence in Mexico and the United States, $EarnUS_i$ and $EarnMX_i$ are indicator variables for whether the respondent earns money in the United States and Mexico, $SpendUS_i$ and $SpendMX_i$ are indicator variables for whether the respondent spends money in the United States and Mexico, $CheckingUS_i$ and $CheckingMX_i$ are the indicator variables for checking account ownership in the United States and Mexico, $SavingsUS_i$ and $SavingsMX_i$ are the indicator variables for savings account ownership in the United States and Mexico, $CCUS_i$ and $CCMX_i$ are the indicator variables for credit card ownership in the United States and Mexico, $Education_i$ is the education level variable, NHH_i is the number of members in the respondent i's household, and $Gender_i$ is the respondent's gender.

7.7.1 Adjustments to the regression design

Due to a low number of participants reporting previous borrowing, I exclude the associated variables from all regression specifications.

8 Predictions

8.1 Behavioral variables' effects on the estimated frequency of borrowing in dollars over pesos

Tables 32-34 in Appendix B report the results of the logistic regression, where the behavioral variables are independent variables. Table 32 in Appendix B reports the results for a specification with all behavioral variables. Table 33 in Appendix B reports the results for a specification with relative risk aversion only, and table 34 in Appendix B reports the results for a specification with time discount variables only. Higher relative risk aversion decreases the probability of choosing dollars by over 100% in case when the dollar rate is 90% of the peso rate and when it's equal to the peso rate, while effects are mixed for the time discounting variables (see table 32 in Appendix B). In the standalone specification reported in table 33 in Appendix B, a 1-unit increase in relative risk aversion decreases the probability of choosing dollars by over 100% in all decision situations. These results are also associated with lower predicted probability of choosing dollars over pesos when the interest rates are equal compared to the specification with time discounting (.740 vs .783). One potential economic explanation for such effect may be risk hedging motivations - the dollar may be seen as an inherently riskier currency, prompting the participants with higher risk aversion to choose pesos. It's also possible that seeing a fixed rate in pesos and a variable rate in dollars in the menu of choices prompts individuals to choose the option that does not have variability.

Time discounting mostly affected p_{USD} in 3 extreme cases: the case when the USD rate is 50% of the peso rate, 75% of the peso rate, and 150% of the peso rate. In the first two cases, a 1 p.p. increase in the time discount from the USD task increases the probability of choosing dollars by over 100%, while the time discount from the peso task has the opposite effect. In the last decision situation, the effects are flipped: time discount from the USD task decreases the probability of choosing dollars by over 100%, while the time discount from the peso task substantially increases p_{USD} (see table 34 in Appendix B). It's possible that there is a link between impatience (as indicated by higher personal discount rates) and the currency choice for borrowing - perhaps individuals who are shown to be highly impatient when answering questions linked to one of the currencies react stronger to the interest rate differentials compared to the more patient participants.

Tables 35-36 in Appendix B report the results of the logistic regression with behavioral, income, and spending variables. The specification in table 35 in Appendix B utilizes income levels, while the specification in table 36 in Appendix B utilizes income and spending shares in dollars and pesos. Income levels have no effect on the odds of borrowing in dollars over pesos (see table 35 in Appendix B), while income shares do have some effect on p_{USD} (see table 36 in Appendix B). When the participant has to decide between 90% of peso rate in USD and the base peso rate, a 1 p.p. increase in the income share in USD increases the probability of choosing dollar borrowing by 27.6%. A 1 p.p. increase in the spending share in USD decreases the probability of choosing dollar borrowing by 24.5%. A 1 p.p. increase in the income share and spending share in pesos create a 21.7% decrease and a 32.4% increase in the probability of choosing dollars over pesos for borrowing. When the interest rates are equal, a 1 p.p. increase in the income share in USD decreases the probability of choosing dollar borrowing by 13.5%. A 1 p.p. increase in the income share in pesos increases the probability of choosing dollar borrowing by 15.6%. Spending shares have no statistically significant effects in the case when the two currency interest rates are equal. The estimated probability of borrowing in dollars when the two interest rates are equal is .965-.973 and .193 at the main switching point (110% of the peso rate in USD vs base peso rate).

8.2 Exchange rates' effects on estimated frequency of borrowing in dollars over pesos

Tables 37 and 38 in Appendix B show the results of the logistic regression with exchange rates as independent variables. The specification in table 37 in Appendix B includes the rate differential and the contemporaneous and predicted exchange rates. The specification in table 38 in Appendix B includes exchange rates only. The predicted future exchange rate is the only variable with statistically significant effects on the estimated frequency of borrowing in dollars over pesos. In case when the participants had to choose between the 110% of the peso rate in USD and the base peso rate, a 1 peso per $1 increase in the exchange rate prediction decreased the estimated frequency of borrowing in USD by 57.5%. In the extreme comparison case when the participants had to choose between the 150% of the peso rate in USD and the base peso rate, a 1 peso per $1 increase in the exchange rate prediction decreased the estimated frequency of borrowing in USD by 21.3%. However, the predicted exchange rate is not associated with a significant shift in the indifference rate and thus the switching point for the dollar and peso choices (see section 8.7 and table 14). When the dollar and peso interest rates are equal, the two specifications involving exchange rates predict a 67.2% probability of choosing dollars for borrowing.

8.3 Income and spending shares' effects on the estimated frequency of borrowing in dollars over pesos

Table 39 in Appendix B shows the results of the logistic regression with income and spending shares in both currencies as independent variables. The most notable result is that for the set of the three dollar rates that are the closest to the base peso rate (90% of the peso rate, equal to the peso rate, and 110% of the peso rate), a 1 p.p. increase in the income share in USD leads to a 2.4-5.5% decrease in the probability of choosing USD for borrowing. A 1 p.p. increase in the income share in pesos leads to a 2.5-5.8% increase in the probability of choosing USD for borrowing. These behaviors may be consistent with risk hedging motivations described in existing literature (see Mechanisms section). When the interest rates are equal, the probability of choosing USD is estimated at .684-.750. At the main switching point of 110% of the peso rate in USD, the probability of choosing USD is .228-.238.

8.4 Demographic variables' effects on the estimated frequency of borrowing in dollars over pesos

Table 40 in Appendix B introduces the results of the logistic regression with all demographic variables as independent variables. Across all decision situations, there are no consistent patterns as to which variables affect the probability of choosing dollars over pesos. For instance, when the dollar interest rate is substantially lower than the peso interest rate (first two decision situations), respondents who reported having checking and savings accounts in Mexico and spent money in Mexico displayed higher estimated frequency of borrowing in dollars over pesos, while having credit cards in Mexico substantially decreased the estimated frequency in the case when the dollar rate is the lowest compared to the base peso rate (50% of the peso rate in USD vs base peso rate). It's possible that this pattern is indicative of risk hedging behaviors discussed in section 9.1. Another indication of such behavior may be shown in case when the rates are equal - those who earn in

Mexico are 15 times more likely to borrow in dollars. But in that instance, the borrowing choice also appears to be linked to spending and residence - living and spending in Mexico substantially decreases the estimated frequency of choosing dollars for borrowing. The predicted probability of borrowing in dollars in case when the interest rates in both currencies are equal is estimated at 77%. In case when the dollar rate significantly exceeds the peso rate (150% of the peso rate in USD vs base peso rate), being a Mexican resident increases the frequency of borrowing in dollars by 17 times. Other demographic variables mostly have no statistically significant effects on the estimated frequency of borrowing in dollars over pesos.

8.5 Indifference rate and all variables

Table 12 represents results of the OLS regression of the indifference rate on most variables in the dataset. Several variables were omitted due to collinearity. A 1 p.p. increase in the time discount increases the indifference rate by .01 p.p., while the time discount from the peso task decreases the indifference rate by .01 p.p. The direction of the effects is consistent with the specification with behavioral variables only (see table 13). Income variables have no substantial effects on the indifference rate in this specification. Among demographic variables, higher age is associated with a .05 p.p. decrease in the indifference rate and higher household size is associated with a .43 p.p. increase in the indifference rate. Living in Mexico is associated with a .99 p.p. decrease in the indifference rate and a subsequent faster switch to peso borrowing. I explore effects of specific groups of variables on the indifference rates in the further sections.

Table 12: OLS regression results for the effects of all variables on the indifference rate

Independent variable	OLS coefficient
Relative risk aversion coefficient	-2.229
	(3.177)
Time discount from USD task	.012*
	(.007)
Time discount from peso task	-.011**
	(.005)
Income in pesos (current)	$<.001$
	$(<.001)$
Income in dollars (current)	$<-.001$*
	$(<.001)$
Income in pesos (expected)	omitted
Income in dollars (expected)	omitted
Exchange rate on the day of the survey	-.224
	(1.895)
Predicted future exchange rate	-.550
	(.411)
Age	-.048*
	(.027)
Household size	.434**
	(.193)
Gender	
Male	.228
	(.360)
Education	
Master's degree or equivalent	.097
	(.423)
Technical/community college degree or equivalent	-.129
	(.785)
Lives in the USA	omitted
Lives in Mexico	-.985**
	(.401)
Earns in the USA	omitted
Earns in Mexico	.502
	(.930)

Spends in the USA	omitted
Spends in Mexico	omitted
Checking account in the USA	omitted
Checking account in Mexico	-.325
	(.495)
Savings account in the USA	omitted
Savings account in Mexico	-.588
	(.516)
Credit cards in the USA	-.345
	(.422)
Credit cards in Mexico	.280
	(.300)

8.6 Effects of behavioral variables on the indifference rate

Table 13 represents the OLS regression results for the effects of behavioral variables on the indifference rate. Time discounts from both currency tasks have no statistically significant effects on the indifference rate. Generally, lower patience/higher discount rate in the dollar task is associated with a higher indifference rate in dollars, while time discounting in the peso task creates the opposite effect. In the specification with RRA as the only independent variable, I observe a 9.1 p.p. decrease in the indifference rate following a 1-unit increase in RRA, meaning that the participants with higher risk aversion are very eager to switch from dollars to pesos for borrowing. In the specification with all behavioral variables, the effect is less sharp - a 4.3 p.p. decrease in the indifference rate.

Independent variable	OLS coefficient				
Specification	(1)	(2)	(3)	(4)	(5)
Relative risk aversion coefficient	-4.254	-9.058***			
	(2.799)	(2.582)			
Time discount from USD task, %	.008		.001	<.001	
	(.008)		(.010)	(.007)	
Time discount from peso task, %	-.007		-.005		-.005
	(.005)		(.006)		(.004)

Table 13: OLS regression results for the effects of behavioral variables on the indifference rate

All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

8.7 Effects of the exchange rate on the indifference rate

Table 14 represents the OLS regression results for the effects of two peso-dollar exchange rates (current and predicted) on the indifference rate. There is a 1.2 p.p. increase in the indifference rate associated with a 1 peso per dollar increase in the exchange rate on the day of the survey (specifications 1 and 2). The exchange rate throughout the survey period ranged from 18.46 pesos per \$1 to 19.18 pesos per \$1. The effect is not statistically significant. The predicted future exchange rate does not have any statistically significant effects on the indifference rate.

Independent variable	OLS coefficient		
Specification	(1)	(2)	(3)
Exchange rate on the day of the survey	1.234	1.158	
	(.896)	(.784)	
Predicted future exchange rate	-.067		.012
	(.281)		(.260)

Table 14: OLS regression results for the effects of exchange rate variables on the indifference rate

All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

8.8 Effects of income and spending shares on the indifference rate

Income and spending shares appear to have relatively minor, but statistically significant effects on the indifference rate. Tables 15 reports the results of the OLS regression of the indifference rate on income and spending share variables. Results for specifications 3-6 indicate that higher income and spending shares in USD result in lower indifference rates, while 1 p.p. increases in income and spending shares in pesos result in higher indifference rates and a later switch to peso choice.

Independent variable	OLS coefficient					
Specification	(1)	(2)	(3)	(4)	(5)	(6)
Income share in USD, %	-.031*** (.010)		-.034*** (.008)			
Income share in pesos, %		.031*** (.010)		.034*** (.008)		
Spending share in USD, %	-.007 (.011)				-.038*** (.009)	
Spending share in pesos, %		.007 (.011)				.038*** (.009)

Table 15: OLS regression results for the effects of income and spending shares on the indifference rate

All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

8.9 Effects of demographic variables on the indifference rate

Table 16 represents OLS regression results for the effects of demographic variables on the indifference rate. Several variables were omitted due to collinearity issues. Residing in Mexico is associated with a 1.5 p.p. decrease in the indifference rate, leading to an earlier switch to the peso borrowing choice in task 3. On the other hand, participants who reported earning their income in Mexico have a 1.4 p.p. higher indifference rate, leading to a later switch. Having a checking account in the USA leads to an earlier switch to peso borrowing (a 1.5 p.p. decrease in the indifference rate), while having a checking account in Mexico leads to a .5 p.p. increase in the indifference rate. Savings account ownership in Mexico decreases the indifference rate by 1 p.p. Notably, having credit cards in both countries prolongs dollar choice with an increase in the indifference rate by .5 p.p. and .1 p.p. Among standard demographic variables, only one indicator for education (having a PhD) has a statistically significant effect of a 5.1 p.p. increase in the indifference rate. However, since there is only one participant in the survey with a reported PhD degree, this result is highly biased.

Table 16: OLS regression results for the effects of demographic variables on the indifference rate

Independent variable	OLS coefficient
Age	.010 (.034)
Household size	-.023 (.176)
Gender	
Male	.055 (.252)
Education	
Technical/community college or equivalent	-.241 (.499)
Master's degree or equivalent	.214 (.319)
PhD or equivalent	5.144*** (1.457)
Lives in the USA	omitted
Lives in Mexico	-1.463** (.661)
Earns in the USA	omitted

Earns in Mexico	1.432**
	(.608)
Spends in the USA	-.287
	(1.292)
Spends in Mexico	-1.116
	(.866)
Checking account in the USA	-1.525**
	(.766)
Checking account in Mexico	.455
	(.384)
Savings account in the USA	omitted
Savings account in Mexico	-.997**
	(.483)
Credit cards in the USA	.472**
	(.211)
Credit cards in Mexico	.146
	(.251)

All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

9   Mechanisms

9.1   Risk hedging: income levels channel and education-income-spending channel

Foreign currency debt can serve as a hedging device by households for price-level/consumption and income motives. Aiba, Odajima, and Khou (2018) find that Cambodian households with a lot of foreign currency income tend to borrow more in foreign currency to resolve currency mismatch issues. However, currency of debt choices are also correlated with the level of education. Highly educated households tend to make currency choices consistent with risk hedging and resolution of currency mismatch. In contrast, less educated households tend to borrow in the currency in which most purchases are made [1]. Beckmann and Stix (2015) find that better knowledge about exchange rate risks among borrowers in Central and Eastern Europe decreases demand for foreign currency-denominated loans [6].

I test the education-currency channel in two ways: with relation to the relative spending in dollars and pesos and with relation to income matching. Those with higher educational degrees should have a lower indifference rate if their income is mostly in pesos and a higher indifference rate if their income is mostly in dollars. Those with lower educational degrees should have a higher indifference rate if they mostly spend in dollars and a lower indifference rate (stronger preference for peso borrowing) if they mostly spend in pesos. I define lower educational degrees as degrees below a bachelor's degree or equivalent and higher educational degrees as a bachelor's degree or higher. In total, there are 21 participants with lower educational degrees and 117 participants with higher educational degrees. I generate an indicator variable for lower and higher educational degrees based on my classification. I also generate indicator variables for earning and spending mostly in USD.

Table 17 describes the results of an OLS regression of indifference rate on the earning and spending indicator variables by education category. My findings are opposite to those by Aiba, Odajima, and Khou (2018). Participants with lower educational degrees who spend mostly in dollars have a sharper decrease in the indifference rate of 0.9 p.p. compared to those with higher educational degrees, who have a decrease of 0.3 p.p. Earning mostly in dollars generates a lower increase in the indifference rate for higher educational degrees compared to lower educational degrees.

Education category	Independent variable	OLS coefficient
Lower educational degrees	Earns mostly in USD	.859
		(.586)
	Spends mostly in USD	-.950**
		(1.287)
Higher educational degrees	Earns mostly in USD	.811
		(.884)
	Spends mostly in USD	-.263*
		(.144)

Table 17: Earning and spending and indifference rate by education category

All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

9.2 Time discounting-income channel

One of the features in my survey is measuring the relationship between time preferences and currency choice for borrowing. Wang, Rieger, and Hens (2016) study short and long-term time discounting in 53 countries. They show that there is more heterogeneity between different countries' time discounting factors when the time horizon is short. The authors also show that cultural factors affect time discounting. For instance, high levels of uncertainty avoidance are associated with stronger hyperbolic discounting, while higher degrees of individualism and long-term orientation predict higher propensity to wait for bigger payoffs [44]. Countries with higher pace of time, as defined by characteristics like better punctuality and higher walking speed, are more likely to wait for higher returns. In particular, Mexican participants in the experiment were on the lower end of the patience scale when asked to choose between a sum of money "this month" and a higher sum of money "next month." [44] The survey participants in my study also exhibit high degrees of impatience, as seen in tables 20-25 in Appendix A. However, time discounting only appears to substantially affect choices at extreme comparison values - (1) 50% of peso rate in USD vs base peso rate, (2) 75% of peso rate in USD vs base peso rate, and (3) 150% of peso rate in USD vs base peso rate, as shown in table 34 in Appendix B. There is no statistically significant effect of time discounting on the indifference rate, as shown in table 13.

Other literature focuses on the relationships between various demographic characteristics and time preferences. Higher wealth is associated with higher patience (Harrison, Lau, and Williams, 2002; Hausman, 1979; Lawrance, 1991; Yesuf and Bluffstone, 2009). [18] [19] [28] [45] There are also several studies that find no relationship between wealth and discount rates: Anderson, Dietz, Gordon, and Klawitter (2004) and Kirby et al. (2002). [3] [26] In the context of my study, dual residency workers with more wealth may be more likely to have longer planning horizons and thus prefer higher payoffs in the future when presented with the options today and at some future date.

Table 18 shows that in my sample of survey participants, this hypothesis does not seem to hold true. Income in both currencies - the dollar and the peso - has minimal effects on time discounting. The results on income being affected by time discounting are inconsistent (see table 19). Higher time discounting in the dollar task (1 p.p. increase in the discount rate) increases dollar income by $160 and decreases peso income by 2,550 pesos. Higher time discounting in the peso task decreases dollar income by $85 and increases peso income by 33 pesos. Thus, the income-time discount channel (both directions) is unlikely to be a reliable factor in the currency choice.

Dependent variable:	Time discount in USD, %	Time discount in pesos, %
Independent variable	**OLS coefficient**	
Current income in USD	<.001*	<.001
	(<.001)	(<.001)
Current income in pesos	<.001***	<.001***
	(<.001)	(<.001)

Table 18: Effects of income on time discounting

All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

Dependent variable:	Current income in dollars	Current income in pesos
Independent variable	**OLS coefficient**	
Time discount in USD, %	159.905*	-2,549.457
	(90.220)	(1,596.610)
Time discount in pesos, %	-85.456*	33.277
	(50.613)	(775.296)

Table 19: Effects of time discounting on income levels

All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

10 Conclusion

This paper focuses on a long-standing question of how households with dual residence and income and spending in two currencies make currency choices for debt. The online survey of 138 individuals confirmed that they indeed deal with two currencies on a daily basis as a part of their banking accounts, earning, spending, and using credit cards. Relative risk aversion, income and spending shares in dollars and pesos, and time discounting have the most important effects on the indifference rate and odds of choosing dollars for borrowing. Potential explanations include observing a fixed interest rate vs a variable one, which affects the decision to borrow in one currency over another, and risk hedging motivations to match income to spending. Among the two tested mechanisms, there are mixed results. There is no evidence for time discounting affecting income and vice versa in the sample. The risk hedging mechanism seems to work differently from what is described in the previous literature.

References

[1] Aiba, D., Odajima, K. and Khou, V. *Foreign currency borrowing and risk-hedging behavior: Evidence from Cambodian households.* Journal of Asian Economics, 2018, 58, pp.19-35.

[2] Amuedo-Dorantes, C., Bansak, C. and Pozo, S. *On the remitting patterns of immigrants: Evidence from Mexican survey data.* Economic Review, 2005, 90(1), pp.37-58.

[3] Anderson, C. Leigh, M.D., A. Gordon, and M. Klawitter. *Discount rates in Vietnam.* Economic development and cultural change, 2004, 52, no. 4: 873-887.

[4] Andreoni, J. and Sprenger, C. *Estimating time preferences from convex budgets.* American Economic Review, 2012, 102(7), pp.3333-3356.

[5] Basso, H.S., Calvo-Gonzalez, O. and Jurgilas, M. *Financial dollarization: The role of foreign-owned banks and interest rates.* Journal of Banking & Finance, 2011, 35(4), pp.794-806.

[6] Beckmann, E. and Stix, H. *Foreign currency borrowing and knowledge about exchange rate risk.* Journal of Economic Behavior Organization, 2015, 112, pp.1-16.

[7] Binswanger, H.P. *Attitudes toward risk: Experimental measurement in rural India.* American journal of agricultural economics, 1980, 62(3), pp.395-407.

[8] Bonett, S. et al. *Assessing and Improving Data Integrity in Web-Based Surveys: Comparison of Fraud Detection Systems in a COVID-19 Study.* JMIR formative research vol. 8 e47091. 12 Jan. 2024, doi:10.2196/47091

[9] Bordo, M.D., C.M. Meissner, and D. Stuckler. *Foreign currency debt, financial crises and economic growth: A long-run view.* Journal of International Money and Finance, 2010, 29(4), pp.642-665.

[10] Borjas, G.J. and Fisher, E.O.N. *Dollarization and the Mexican labor market.* Journal of Money, Credit and Banking, 2001, pp.626-647.

[11] Brauning, F., and V. Ivashina. *U.S. Monetary Policy and Emerging Market Credit Cycles.* NBER Working Paper #25185, 2018.

[12] Brown, M., Ongena, S. and Yeşin, P., *Information asymmetry and foreign currency borrowing by small firms.* Comparative Economic Studies, 2014, 56(1), pp.110-131.

[13] Bryan, G., D. Karlan and A. Osman. *Big Loans to Small Businesses: Predicting Winners and Losers in an Entrepreneurial Lending Experiment.* Working paper, 2022.

[14] Castañeda, J.G. *Mexico at the Brink.* Foreign Affairs, 1985, 64(2), pp.287-303.

[15] Fidrmuc, J., M. Hake, and H. Stix. *Households' foreign currency borrowing in Central and Eastern Europe.* Journal of Banking and Finance, 2013, 37: pp. 1880-1897.

[16] Gyongyosi, G. and Verner, E. *Financial crisis, creditor-debtor conflict, and populism.* Journal of Finance, 2022, 77(4): pp. 2471-2523.

[17] Hake, M., Lopez-Vicente, F. and Molina, L. *Do the drivers of loan dollarization differ between CESEE and Latin America? A Meta-analysis.* Focus on European Economic Integration, 2014, (1), pp.8-35.

[18] Harrison, G, W., M. I. Lau, and M. B. Williams. *Estimating Individual Discount Rates in Denmark: A Field Experiment.* American Economic Review, 2002, 92 (5): 1606–1617.

[19] Hausman, J. A. *Individual Discount Rates and the Purchase and Utilization of Energy-Using Durables.* The Bell Journal of Economics, 1979, 10(1), 33–54.

[20] Holt, C.A. and Laury, S.K. *Risk aversion and incentive effects.* American Economic Review, 2002, 92(5), pp.1644-1655.

[21] Ize, A. and E. L. Yeyati. *Financial dollarization.* Journal of International Economics, 2003, 59: pp. 323-347.

[22] Jann, B., J. E. Brand, and Y. Xie. *Heterogeneous Treatment Effect Analysis.* Presentation at the German Stata Users Group Meeting, 2010.

[23] Kahneman, D. and A. Tversky. *Prospect Theory: An Analysis of Decision Under Risk.* Econometrica, 1979, 47, pp. 263–291.

[24] Keller, L. *Capital controls and risk misallocation: evidence from a natural experiment.* Jacobs Levy Equity Management Center for Quantitative Financial Research Paper, 2019.

[25] Keloharju, M. and M. Niskanen. *Why Do Firms Raise Foreign Currency Denominated Debt? Evidence from Finland.* European Financial Management, 2001, 7: pp. 481-496.

[26] Kirby, K. N., R. Godoy, V. Reyes-Garcıa, E. Byron, L. Apaza, W. Leonard, E. Perez, V. Vadez, and D. Wilkie. *Correlates of delay-discount rates: Evidence from Tsimane'Amerindians of the Bolivian rain forest.* Journal of Economic Psychology 2002, 23, no. 3: 291-316.

[27] Klepikova, E. and N. Rogozhina. *Residential Mortgage Lending, Risk Management, and Affordable Housing Market Development in Russia.* From *Housing Finance: New and Old Models in Central Europe, Russia, and Kazakhstan.* Local Government and Public Service Reform Initiative, Open Society Institute-Budapest, 2015, 237-254.

[28] Lawrance, E.C. *Poverty and the Rate of Time Preference: Evidence from Panel Data.* Journal of Political Economy, 1991, 99, 54 - 77.

[29] McBrady, M.R. and Schill, M.J. *Foreign currency-denominated borrowing in the absence of operating incentives.* Journal of Financial Economics, 2007, 86(1), pp.145-177.

[30] McKinnon, R. *The euro versus the dollar: resolving a historical puzzle.* Journal of Policy Modeling, 2002, 24: 355-359.

[31] Luca, A. and Petrova, I. *What drives credit dollarization in transition economies?.* Journal of banking & finance, 2008, 32(5), pp.858-869.

[32] Montamat, G. *Stubborn dollarization: Love for the Dollar and Fear of the Peso.* Job market paper, 2020.

[33] Otero-Iglesias, M., and F. Steinberg. *Reframing the euro vs. dollar debate through the perceptions of financial elites in key dollar-holding countries.* Review of International Political Economy, 2013, 20(1): 180-214.

[34] Paulson, A. and Rhine, S.L. *The financial assimilation of an immigrant group: Evidence on the use of checking and savings accounts and currency exchanges.* Journal of Family and Economic Issues, 2008, 29(2), pp.264-278.

[35] Posen, A.S. *Why the Euro Will Not Rival the Dollar.* International Finance, 2008, 11 (1): 75-100.

[36] Prasad, E. *The dollar reigns supreme – by default.* Nikkei Asian Review, 2014.

[37] Raheem, I.D. and Asongu, S.A. *Extending the determinants of dollarization in Sub-Saharan Africa: The role of easy access to foreign exchange earnings.* Research in International Business and Finance, 2018, 45, pp.106-120.

[38] Rahman, A. and Jiban, M.J.H. *Trend of Foreign Currency Earnings by the Garment Sectors in Bangladesh.* Working paper, 2015.

[39] Ruiz, I. and Vargas-Silva, C. *To send, or not to send: That is the question-a review of the literature on workers' remittances.* Journal of Business Strategies, 2009.

[40] Ruiz, I. and Vargas-Silva, C. *Exploring the causes of the slowdown in remittances to Mexico.* Empirical Economics, 2012, 42, pp.745-766.

[41] Vargas-Silva, C. *Are remittances manna from heaven? A look at the business cycle properties of remittances.* The North American Journal of Economics and Finance, 2008, 19(3), pp.290-303.

[42] Verner, E., and G. Gyöngyözi. *Household Debt Revaluation and the Real Economy: Evidence from a Foreign Currency Debt Crisis.* American Economic Review, 2020, 110(9), pp.2667-2702.

[43] Vlasov, A.V. and L.A. Mishina. *Refinancing of mortgage loans in Russia: methodology and conceptual approaches. (in Russian)* Entrepreneur's Guide, 2014, vol. XXV.

[44] Wang, M., Rieger, M. O., and Hens, T.. *How time preferences differ: Evidence from 53 countries.* Journal of Economic Psychology, 2016, 52, 115–135

[45] Yesuf, M., R. A Bluffstone. *Poverty, risk aversion, and path dependence in low-income countries: Experimental evidence from Ethiopia.* American Journal of Agricultural Economics, 2009, 91(4): 1022-1037.

11 Appendix A: Task 1, 2, and 3 response distribution summaries

Question	A	B	# of switchers	Implied discount rate
A: $100 today; B: $100 in 3 months	100.0% (39/39)	- (0/39)	-	-
A: $100 today; B: $101.25 in 3 months	89.7%(35/39)	10.3% (4/39)	4	1.25%
A: $100 today; B: $101.88 in 3 months	92.3% (36/39)	7.7% (3/39)	(1)	-
A: $100 today; B: $102.50 in 3 months	87.2% (34/39)	12.8% (5/39)	2	2.50%
A: $100 today; B: $103.13 in 3 months	92.3% (36/39)	7.7% (3/39)	(2)	-
A: $100 today; B: $103.75 in 3 months	87.2% (34/39)	12.8% (5/39)	2	3.75%
A: $100 today; B: $104.38 in 3 months	92.3% (36/39)	7.7% (3/39)	(2)	-
A: $100 today; B: $105.00 in 3 months	89.7% (35/39)	10.3% (4/39)	1	5.00%
A: $100 today; B: $106.25 in 3 months	87.2% (34/39)	12.8% (5/39)	1	6.25%
A: $100 today; B: $112.50 in 3 months	87.2% (34/39)	12.8% (5/39)	-	-
A: $100 today; B: $118.75 in 3 months	79.5% (31/39)	20.5% (8/39)	3	18.75%
A: $100 today; B: $125.00 in 3 months	82.0% (32/39)	18.0% (7/39)	(1)	-
A: $100 today; B: $131.25 in 3 months	56.4% (22/39)	43.6% (17/39)	10	31.25%
A: $100 today; B: $137.50 in 3 months	28.2% (11/39)	71.8% (28/39)	11	37.50%
A: $100 today; B: $143.75 in 3 months	18.0% (7/39)	82.0% (32/39)	4	43.75%
A: $100 today; B: $150.00 in 3 months	7.7% (3/39)	92.3% (36/39)	4	50.00%

Table 20: Task 1: Money today or in 3 months? (Task in dollars)

Question	A	B	# of switchers	Implied discount rate
A: 1000 pesos today; B: 1000 pesos in 3 months	94.9% (37/39)	5.1% (2/39)	-	-
A: 1000 pesos today; B: 1013 pesos in 3 months	92.3%(36/39)	7.7% (3/39)	1	1.30%
A: 1000 pesos today; B: 1019 pesos in 3 months	89.7% (35/39)	10.3% (4/39)	1	1.90%
A: 1000 pesos today; B: 1025 pesos in 3 months	87.2% (34/39)	12.8% (5/39)	1	2.50%
A: 1000 pesos today; B: 1031 pesos in 3 months	87.2% (34/39)	7.7% (5/39)	-	-
A: 1000 pesos today; B: 1038 pesos in 3 months	84.6% (33/39)	15.4% (6/39)	1	3.80%
A: 1000 pesos today; B: 1044 pesos in 3 months	92.3% (36/39)	7.7% (3/39)	(3)	-
A: 1000 pesos today; B: 1050 pesos in 3 months	79.5% (31/39)	20.5% (8/39)	5	5.00%
A: 1000 pesos today; B: 1063 pesos in 3 months	74.4% (29/39)	25.6% (10/39)	2	6.30%
A: 1000 pesos today; B: 1125 pesos in 3 months	74.4% (29/39)	25.6% (10/39)	-	-
A: 1000 pesos today; B: 1188 pesos in 3 months	71.8% (28/39)	28.2% (11/39)	1	18.80%
A: 1000 pesos today; B: 1250 pesos in 3 months	66.7% (26/39)	33.3% (13/39)	2	25.00%
A: 1000 pesos today; B: 1313 pesos in 3 months	56.4% (22/39)	43.6% (17/39)	4	31.30%
A: 1000 pesos today; B: 1375 pesos in 3 months	23.1% (9/39)	76.89% (30/39)	13	37.50%
A: 1000 pesos today; B: 1438 pesos in 3 months	7.7% (3/39)	92.3% (36/39)	6	43.80%
A: 1000 pesos today; B: 1500 pesos in 3 months	5.1% (2/39)	94.9% (37/39)	1	50.00%

Table 21: Task 1: Money today or in 3 months? (Task in pesos)

Question	A	B	# of switchers	Implied discount rate
A: $100 today; B: $100 in 6 months	98.0% (49/50)	2.0% (1/50)	-	-
A: $100 today; B: $102.50 in 6 months	92.0%(46/50)	8.0% (4/50)	3	2.50%
A: $100 today; B: $103.75 in 6 months	92.0%(46/50)	8.0% (4/50)	-	-
A: $100 today; B: $105.00 in 6 months	90.0%(45/50)	10.0% (5/50)	1	5.00%
A: $100 today; B: $106.25 in 6 months	94.0%(47/50)	6.0% (3/50)	(2)	-
A: $100 today; B: $107.50 in 6 months	90.0%(45/50)	10.0% (5/50)	2	7.50%
A: $100 today; B: $108.75 in 6 months	94.0%(47/50)	6.0% (3/50)	(2)	-
A: $100 today; B: $110.00 in 6 months	88.0%(44/50)	12.0% (6/50)	3	10.00%
A: $100 today; B: $112.50 in 6 months	96.0%(48/50)	4.0% (2/50)	(4)	-
A: $100 today; B: $125.00 in 6 months	90.0%(45/50)	10.0% (5/50)	3	25.00%
A: $100 today; B: $137.50 in 6 months	86.0%(43/50)	14.0% (7/50)	2	37.50%
A: $100 today; B: $150.00 in 6 months	58.0%(29/50)	42.0% (21/50)	14	50.00%
A: $100 today; B: $162.50 in 6 months	48.0%(24/50)	52.0% (26/50)	5	62.50%
A: $100 today; B: $175.00 in 6 months	18.0%(9/50)	82.0% (41/50)	15	75.00%
A: $100 today; B: $187.50 in 6 months	20.0%(10/50)	80.0% (40/50)	(1)	-
A: $100 today; B: $200.00 in 6 months	4.0%(2/50)	96.0% (48/50)	8	100.00%

Table 22: Task 1: Money today or in 6 months? (Task in dollars)

Question	A	B	# of switchers	Implied discount rate
A: 1000 pesos today; B: 1000 pesos in 6 months	90.0% (45/50)	10.0% (5/50)	-	-
A: 1000 pesos today; B: 1025 pesos in 6 months	98.0%(49/50)	2.0% (1/50)	(4)	-
A: 1000 pesos today; B: 1038 pesos in 6 months	90.0% (45/50)	10.0% (5/50)	4	3.80%
A: 1000 pesos today; B: 1050 pesos in 6 months	92.0% (46/50)	8.0% (4/50)	(1)	-
A: 1000 pesos today; B: 1063 pesos in 6 months	90.0% (45/50)	10.0% (5/50)	1	6.30%
A: 1000 pesos today; B: 1075 pesos in 6 months	84.0% (42/50)	16.0% (8/50)	3	7.50%
A: 1000 pesos today; B: 1088 pesos in 6 months	92.0% (46/50)	8.0% (4/50)	(4)	-
A: 1000 pesos today; B: 1100 pesos in 6 months	84.0% (42/50)	16.0% (8/50)	4	10.00%
A: 1000 pesos today; B: 1125 pesos in 6 months	76.0% (38/50)	24.0% (12/50)	4	12.50%
A: 1000 pesos today; B: 1250 pesos in 6 months	74.0% (37/50)	26.0% (13/50)	1	25.00%
A: 1000 pesos today; B: 1375 pesos in 6 months	68.0% (34/50)	32.0% (16/50)	3	37.50%
A: 1000 pesos today; B: 1500 pesos in 6 months	48.0% (24/50)	52.0% (26/50)	10	50.00%
A: 1000 pesos today; B: 1625 pesos in 6 months	44.0% (22/50)	56.0% (28/50)	2	62.50%
A: 1000 pesos today; B: 1750 pesos in 6 months	26.0% (13/50)	74.0% (37/50)	9	75.00%
A: 1000 pesos today; B: 1875 pesos in 6 months	8.0% (4/50)	92.0% (46/50)	9	87.50%
A: 1000 pesos today; B: 2000 pesos in 6 months	6.0% (3/50)	94.0% (47/50)	1	100.00%

Table 23: Task 1: Money today or in 6 months? (Task in pesos)

Question	A	B	# of switchers	Implied discount rate
A: $100 today; B: $100 in 12 months	93.9% (46/49)	6.1% (3/49)	-	-
A: $100 today; B: $105.00 in 12 months	87.8%(43/49)	12.2% (6/49)	3	5.00%
A: $100 today; B: $107.50 in 12 months	89.8%(44/49)	10.2% (5/49)	(1)	-
A: $100 today; B: $110.00 in 12 months	89.8%(44/49)	10.2% (5/49)	-	-
A: $100 today; B: $112.50 in 12 months	85.7%(42/49)	14.3% (7/49)	2	12.50%
A: $100 today; B: $115.00 in 12 months	87.8%(43/49)	12.2% (6/49)	(1)	-
A: $100 today; B: $117.50 in 12 months	98.0%(48/49)	2.0% (1/49)	(5)	-
A: $100 today; B: $120.00 in 12 months	83.7%(41/49)	16.3% (8/49)	7	20.00%
A: $100 today; B: $125.00 in 12 months	91.8%(45/49)	8.2% (4/49)	(4)	-
A: $100 today; B: $150.00 in 12 months	75.5%(37/49)	24.5% (12/49)	8	50.00%
A: $100 today; B: $175.00 in 12 months	49.0%(24/49)	51.0% (25/49)	13	75.00%
A: $100 today; B: $200.00 in 12 months	24.5%(12/49)	75.5% (37/49)	12	100.00%
A: $100 today; B: $225.00 in 12 months	28.6%(14/49)	71.4% (35/49)	(2)	-
A: $100 today; B: $250.00 in 12 months	12.2%(6/49)	87.8% (43/49)	8	150.00%
A: $100 today; B: $275.00 in 12 months	18.4%(9/49)	81.6% (40/49)	(3)	-
A: $100 today; B: $300.00 in 12 months	4.1%(2/49)	95.9% (47/49)	7	200.00%

Table 24: Task 1: Money today or in 12 months? (Task in dollars)

Question	A	B	# of switchers	Implied discount rate
A: 1000 pesos today; B: 1000 pesos in 12 months	91.8% (45/49)	8.2% (4/49)	-	-
A: 1000 pesos today; B: 1050 pesos in 12 months	93.9%(46/49)	6.1% (3/49)	(1)	-
A: 1000 pesos today; B: 1075 pesos in 12 months	89.8% (44/49)	10.2% (5/49)	2	7.50%
A: 1000 pesos today; B: 1100 pesos in 12 months	91.8% (45/49)	8.2% (4/49)	(1)	-
A: 1000 pesos today; B: 1125 pesos in 12 months	87.8% (43/49)	12.2% (6/49)	2	12.50%
A: 1000 pesos today; B: 1150 pesos in 12 months	91.8% (45/49)	8.2% (4/49)	(2)	-
A: 1000 pesos today; B: 1175 pesos in 12 months	83.7% (41/49)	16.3% (8/49)	4	17.50%
A: 1000 pesos today; B: 1200 pesos in 12 months	79.6% (39/49)	20.4% (10/49)	2	20.00%
A: 1000 pesos today; B: 1250 pesos in 12 months	81.6% (40/49)	18.4% (9/49)	(1)	-
A: 1000 pesos today; B: 1500 pesos in 12 months	75.5% (37/49)	24.5% (12/49)	3	50.00%
A: 1000 pesos today; B: 1750 pesos in 12 months	63.3% (31/49)	36.7% (18/49)	6	75.00%
A: 1000 pesos today; B: 2000 pesos in 12 months	34.7% (17/49)	65.3% (32/49)	14	100.00%
A: 1000 pesos today; B: 2250 pesos in 12 months	24.5% (12/49)	75.5% (37/49)	5	125.00%
A: 1000 pesos today; B: 2500 pesos in 12 months	14.3% (7/49)	85.7% (42/49)	5	150.00%
A: 1000 pesos today; B: 2750 pesos in 12 months	24.5% (12/49)	75.5% (37/49)	(5)	-
A: 1000 pesos today; B: 3000 pesos in 12 months	8.2% (4/49)	91.8% (45/49)	8	200.00%

Table 25: Task 1: Money today or in 12 months? (Task in pesos)

Question	A	B	# of switchers	Implied risk aversion for switchers
A: $50 with 100% chance. B: $100 with 30% chance.	89.1% (123/138)	10.9% (15/138)	-	-
A: $50 with 100% chance. B: $100 with 40% chance.	94.2% (130/138)	5.8% (8/26)	(7)	0.00
A: $50 with 100% chance. B: $100 with 50% chance.	91.3% (126/138)	8.7% (12/138)	4	0.00 - 2.00
A: $50 with 100% chance. B: $100 with 60% chance.	88.4% (122/138)	11.6% (16/138)	4	0.50 - 2.00
A: $50 with 100% chance. B: $100 with 70% chance.	80.4% (111/138)	19.6% (27/138)	10	0.63 - 2.00
A: $50 with 100% chance. B: $100 with 80% chance.	38.4% (53/138)	61.6% (85/138)	58	0.74 - 2.00
A: $50 with 100% chance. B: $100 with 90% chance.	18.2% (25/138)	81.8% (113/138)	28	0.84 - 2.00
A: $50 with 100% chance. B: $100 with 100% chance.	8.7% (12/138)	91.3% (126/138)	13	0.92 - 2.00

Table 26: Task 2: Guaranteed money, or a lottery?

Question	A	B
A: base rate in USD; B: 50% of the USD rate in pesos	55.6%(5/9)	44.4% (4/9)
A: base rate in USD; B: 75% of the USD rate in pesos	22.2%(2/9)	77.8% (7/9)
A: base rate in USD; B: 90% of the USD rate in pesos	66.7%(6/9)	33.3% (3/9)
A: base rate in USD; B: USD rate in pesos	88.9%(8/9)	11.1% (1/9)
A: base rate in USD; B: 110% of the USD rate in pesos	44.4%(4/9)	55.6% (5/9)
A: base rate in USD; B: 125% of the USD rate in pesos	77.8%(7/9)	22.2% (2/9)
A: base rate in USD; B: 150% of the USD rate in pesos	55.6%(5/9)	44.4% (4/9)

Table 27: Task 3: Borrow in pesos, or dollars? (dollar anchor rate, all groups of borrowers)

Question	A	B	# of switchers
A: 50% of the peso rate in dollars; B: base rate in pesos	93.0% (120/129)	7.0% (9/129)	-
A: 75% of the peso rate in dollars; B: base rate in pesos	94.6% (122/129)	5.4% (7/129)	(2)
A: 90% of the peso rate in dollars; B: base rate in pesos	83.0% (107/129)	17.0% (22/129)	15
A: peso rate in dollars; B: base rate in pesos	66.7% (86/129)	33.3% (43/129)	21
A: 110% of peso rate in dollars; B: base rate in pesos	23.3% (30/129)	76.7% (99/129)	56
A: 125% of peso rate in dollars; B: base rate in pesos	11.6% (15/129)	88.4% (114/129)	15
A: 150% of peso rate in dollars; B: base rate in pesos	11.6% (15/129)	88.4% (114/129)	0

Table 28: Task 3: Borrow in pesos, or dollars? (peso anchor rate, all groups of borrowers)

Question	A	B	# of switchers
A: 50% of the peso rate in dollars; B: base rate in pesos	91.9% (34/37)	8.1% (3/37)	-
A: 75% of the peso rate in dollars; B: base rate in pesos	94.6% (35/37)	5.4% (2/37)	(1)
A: 90% of the peso rate in dollars; B: base rate in pesos	91.9% (34/37)	8.1% (3/37)	1
A: peso rate in dollars; B: base rate in pesos	70.3% (26/37)	29.7% (11/37)	8
A: 110% of peso rate in dollars; B: base rate in pesos	29.7% (11/37)	70.3% (26/37)	15
A: 125% of peso rate in dollars; B: base rate in pesos	8.1% (3/37)	91.9% (34/37)	8
A: 150% of peso rate in dollars; B: base rate in pesos	8.1% (3/37)	91.9% (34/37)	0

Table 29: Task 3: Borrow in pesos, or dollars? (peso anchor rate, 3-month-horizon borrowers)

Question	A	B	# of switchers
A: 50% of the peso rate in dollars; B: base rate in pesos	91.9% (44/49)	8.1% (5/49)	-
A: 75% of the peso rate in dollars; B: base rate in pesos	91.9% (44/49)	8.1% (5/49)	-
A: 90% of the peso rate in dollars; B: base rate in pesos	81.6% (40/49)	18.4% (9/49)	4
A: peso rate in dollars; B: base rate in pesos	61.2% (30/49)	38.8% (19/49)	10
A: 110% of peso rate in dollars; B: base rate in pesos	18.4% (9/49)	81.6% (40/49)	21
A: 125% of peso rate in dollars; B: base rate in pesos	12.2% (6/49)	87.8% (43/49)	3
A: 150% of peso rate in dollars; B: base rate in pesos	14.3% (7/49)	85.7% (42/49)	(1)

Table 30: Task 3: Borrow in pesos, or dollars? (peso anchor rate, 6-month-horizon borrowers)

Question	A	B	# of switchers
A: 50% of the peso rate in dollars; B: base rate in pesos	97.7% (42/43)	2.3% (1/43)	-
A: 75% of the peso rate in dollars; B: base rate in pesos	100.0% (43/43)	-	(1)
A: 90% of the peso rate in dollars; B: base rate in pesos	76.7% (33/43)	23.3% (10/43)	10
A: peso rate in dollars; B: base rate in pesos	69.8% (30/43)	30.2% (13/43)	3
A: 110% of peso rate in dollars; B: base rate in pesos	23.3% (10/43)	76.7% (33/43)	20
A: 125% of peso rate in dollars; B: base rate in pesos	14.0% (6/43)	86.0% (37/43)	4
A: 150% of peso rate in dollars; B: base rate in pesos	11.6% (5/43)	88.4% (38/43)	1

Table 31: Task 3: Borrow in pesos, or dollars? (peso anchor rate, 12-month-horizon borrowers)

12 Appendix B: Estimated frequency of borrowing in dollars

Table 32: Estimated frequency of borrowing in dollars over pesos associated with various behavioral variables

Decision situation	Independent variable	Odds ratio
90% of peso rate in USD vs peso rate	Relative risk aversion coefficient	<.001**
		(<.001)
	Time discount from USD task	32.400
		(126.460)
	Time discount from peso task	0.011
		(0.037)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.981***
		(.024)
Peso rate in USD vs peso rate	Relative risk aversion coefficient	<.001
		(<.001)
	Time discount from USD task	6.684
		(9.955)
	Time discount from peso task	.306
		(.361)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.783***
		(.055)
110% of peso rate in USD vs peso rate	Relative risk aversion coefficient	.524
		(3.326)
	Time discount from USD task	.522
		(.948)
	Time discount from peso task	.604
		(.658)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.177***
		(.048)
125% of peso rate in USD vs peso rate	Relative risk aversion coefficient	1.68e+13***
		(1.53e+14)
	Time discount from USD task	.549
		(3.913)
	Time discount from peso task	10.700
		(36.529)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.009
		(.006)

The table represents the results of the logistic regression, where the outcome variable is the odds (estimated frequency) ratio of choosing dollar borrowing over peso borrowing. Ratios below 1 indicate a decrease in the estimated frequency, and the ratios above 1 indicate an increase in the estimated frequency. All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

Table 33: Estimated frequency of borrowing in dollars over pesos associated with RRA

Decision situation	Independent variable	Odds ratio
50% of peso rate in USD vs peso rate	Relative risk aversion coefficient	.003
		(.031)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.981***
		(.013)
75% of peso rate in USD vs peso rate	Relative risk aversion coefficient	<.001**
		(<.001)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.994***
		(.007)

90% of peso rate in USD vs peso rate	Relative risk aversion coefficient	<.001***
		(<.001)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.900***
		(.035)
Peso rate in USD vs peso rate	Relative risk aversion coefficient	<.001***
		(<.001)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.740***
		(.052)
110% of peso rate in USD vs peso rate	Relative risk aversion coefficient	<.001*
		(.001)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.180***
		(.038)
125% of peso rate in USD vs peso rate	Relative risk aversion coefficient	.001
		(.009)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.026
		(.017)
150% of peso rate in USD vs peso rate	Relative risk aversion coefficient	<.001
		(<.001)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.018
		(.016)

The table represents the results of the logistic regression, where the outcome variable is the odds (estimated frequency) ratio of choosing dollar borrowing over peso borrowing. Ratios below 1 indicate a decrease in the estimated frequency, and the ratios above 1 indicate an increase in the estimated frequency. All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

Table 34: Estimated frequency of borrowing in dollars over pesos associated with personal time discounting

Decision situation	Independent variable	(1)	(2)	(3)
		Odds ratio		
50% of peso rate in USD vs peso rate	Time discount from USD task	3.07e+10**	2,606,053.000***	
		(2.95e+11)	(1.14e+07)	
	Time discount from peso task	.001**		40.889
		(.002)		(164.841)
	Associated $p_{USD,i}$ at mean independent variable values:			
		1.000***	1.000***	.989***
		(<.001)	(.001)	(.016)
75% of peso rate in USD vs peso rate	Time discount from USD task	3.07e+10**	382.037	
		(2.95e+11)	(1957.203)	
	Time discount from peso task	.001**		40.889
		(.002)		(164.841)
	Associated $p_{USD,i}$ at mean independent variable values:			
		1.000***	.987***	.989***
		(<.001)	(.021)	(.016)
90% of peso rate in USD vs peso rate	Time discount from USD task	1.319	.391	
		(3.032)	(.409)	
	Time discount from peso task	.094		.130**
		(.187)		(.112)
	Associated $p_{USD,i}$ at mean independent variable values:			
		.930***	.888***	.894***
		(.036)	(.034)	(.037)
Peso rate in USD vs peso rate	Time discount from USD task	2.742	1.559	
		(3.498)	(1.259)	
	Time discount from peso task	.370		.453
		(.394)		(.267)
	Associated $p_{USD,i}$ at mean independent variable values:			
		.750***	.713***	.706***
		(.051)	(.049)	(.048)
110% of peso rate in USD vs peso rate	Time discount from USD task	.317	.517	
		(.597)	(.740)	
	Time discount from peso task	.535		.404

Decision situation	Independent variable	(1)	(2)	(3)
		(.594)		(.348)
	Associated $p_{USD,i}$ at mean independent variable values:			
		.174***	.171***	.176***
		(.049)	(.041)	(.041)
125% of peso rate in USD vs peso rate	Time discount from USD task	.147	.591	
		(.880)	(2.881)	
	Time discount from peso task	4.570		1.653
		(7.033)		(3.621)
	Associated $p_{USD,i}$ at mean independent variable values:			
		.037	.034*	.031*
		(.023)	(.021)	(.019)
150% of peso rate in USD vs peso rate	Time discount from USD task	<.001***	<.001***	
		(<.001)	(.001)	
	Time discount from peso task	55,440.100***		.904
		(174,949.100)		(.252)
	Associated $p_{USD,i}$ at mean independent variable values:			
		<.001	.002	.011
		(<.001)	(.002)	(.011)

The table represents the results of the logistic regression, where the outcome variable is the odds (estimated frequency) ratio of choosing dollar borrowing over peso borrowing. Ratios below 1 indicate a decrease in the estimated frequency, and the ratios above 1 indicate an increase in the estimated frequency. Specification 1 includes both discount rates from the two tasks in dollars and pesos. Specifications 2 and 3 include either dollar or peso discount rates only. All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

Table 35: Estimated frequency of borrowing in dollars over pesos associated with behavioral and income level variables

Decision situation	Independent variable	(1)	(2)	(3)
		Odds ratio		
90% of peso rate in USD vs peso rate	Relative risk aversion coefficient	<.001**	<.001**	<.001**
		(<.001)	(<.001)	(<.001)
	Time discount from USD task	32,414.490	32,414.490	32,414.490
		(232,568.300)	(232,568.300)	(232,568.300)
	Time discount from peso task	<.001*	<.001*	<.001*
		(<.001)	(<.001)	(<.001)
	Income in pesos (current)	1.000	1.000	

		(<.001)	(<.001)	
	Income in dollars (current)	1.000	1.000	
		(<.001)	(<.001)	
	Income in pesos (expected)	1.000		1.000
		(<.001)		(<.001)
	Income in dollars (expected)	1.000		1.000
		(<.001)		(<.001)
	Associated $p_{USD,i}$ at mean independent variable values:			
		1.000***	1.000***	1.000***
		(.001)	(.001)	(.001)
Peso rate in USD vs peso rate	Relative risk aversion coefficient	4.151	4.151	4.151
		(61.527)	(61.527)	(61.527)
	Time discount from USD task	7,292.808***	7,292.808***	7,292.808***
		(21,451.020)	(21,451.020)	(21,451.020)
	Time discount from peso task	.003***	.003***	.003***
		(.006)	(.006)	(.006)
	Income in pesos (current)	1.000***	1.000***	
		(<.001)	(<.001)	
	Income in dollars (current)	1.000	1.000	
		(<.001)	(<.001)	
	Income in pesos (expected)	1.000		1.000***
		(<.001)		(<.001)
	Income in dollars (expected)	1.000		1.000
		(<.001)		(<.001)
	Associated $p_{USD,i}$ at mean independent variable values:			
		.965***	.965***	.965***
		(.021)	(.021)	(.021)
110% of peso rate in USD vs peso rate	Relative risk aversion coefficient	1.234	1.234	1.234
		(10.327)	(10.327)	(10.327)
	Time discount from USD task	.690	.690	.690
		(1.428)	(1.428)	(1.428)
	Time discount from peso task	.453	.453	.453
		(.544)	(.544)	(.544)
	Income in pesos (current)	1.000	1.000	
		(<.001)	(<.001)	

Decision situation	Independent variable	(1)	(2)	(3)
	Income in dollars (current)	1.000 (<.001)	1.000 (<.001)	
	Income in pesos (expected)	1.000 (<.001)		1.000 (<.001)
	Income in dollars (expected)	1.000 (<.001)		1.000 (<.001)
	Associated $p_{USD,i}$ at mean independent variable values:			
		.193*** (.054)	.193*** (.054)	.193*** (.054)
125% of peso rate in USD vs peso rate	Relative risk aversion coefficient	2.41e+20*** (3.22e+21)	2.41e+20*** (3.22e+21)	2.41e+20*** (3.22e+21)
	Time discount from USD task	2.716 (18.067)	2.716 (18.067)	2.716 (18.067)
	Time discount from peso task	11.709 (30.413)	11.709 (30.413)	11.709 (30.413)
	Income in pesos (current)	1.000 (<.001)	1.000 (<.001)	
	Income in dollars (current)	1.000 (<.001)	1.000 (<.001)	
	Income in pesos (expected)	1.000 (<.001)		1.000 (<.001)
	Income in dollars (expected)	1.000 (<.001)		1.000 (<.001)
	Associated $p_{USD,i}$ at mean independent variable values:			
		.006 (.006)	.006 (.006)	.006 (.006)

The table represents the results of the logistic regression, where the outcome variable is the odds (estimated frequency) ratio of choosing dollar borrowing over peso borrowing. Ratios below 1 indicate a decrease in the estimated frequency, and the ratios above 1 indicate an increase in the estimated frequency. Specification 1 includes both current and expected income levels in dollars and pesos. Specifications 2 and 3 include either current or expected income levels only. All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

Table 36: Estimated frequency of borrowing in dollars over pesos associated with behavioral and income and spending share variables

Decision situation	Independent variable	(1)	(2)	(3)

		Odds ratio		
90% of peso rate in USD vs peso rate	Relative risk aversion coefficient	<.001***	<.001***	<.001***
		(<.001)	(<.001)	(<.001)
	Time discount from USD task	1.066	1.066	1.066
		(.045)	(.045)	(.045)
	Time discount from peso task	.881***	.881***	.881***
		(.035)	(.035)	(.035)
	Income share in USD	1.276***	1.276***	
		(.095)	(.095)	
	Income share in pesos	1.000		.783***
		(<.001)		(.058)
	Spending share in USD	.755***	.755***	
		(.065)	(.065)	
	Spending share in pesos	1.000		1.324***
		(<.001)		(.113)
	Associated $p_{USD,i}$ at mean independent variable values:			
		1.000***	1.000***	1.000***
		(<.001)	(<.001)	(<.001)
Peso rate in USD vs peso rate	Relative risk aversion coefficient	3.695	3.695	3.695
		(41.399)	(41.399)	(41.399)
	Time discount from USD task	1.113***	1.113***	1.113***
		(.036)	(.036)	(.036)
	Time discount from peso task	.934***	.934***	.934***
		(.019)	(.019)	(.019)
	Income share in USD	.865***	.865***	
		(.043)	(.043)	
	Income share in pesos	1.000		1.156**
		(<.001)		(.058)
	Spending share in USD	.948	.948	
		(.041)	(.041)	
	Spending share in pesos	1.000		1.055
		(<.001)		(.046)
	Associated $p_{USD,i}$ at mean independent variable values:			
		.973***	.973***	.973***

Decision situation	Independent variable	(1)	(2)	(3)
		(.018)	(.018)	(.018)
110% of peso rate in USD vs peso rate	Relative risk aversion coefficient	1.644	1.644	1.644
		(13.996)	(13.996)	(13.996)
	Time discount from USD task	.997	.997	.997
		(.020)	(.020)	(.020)
	Time discount from peso task	.992	.992	.992
		(.012)	(.012)	(.012)
	Income share in USD	.984	.984	
		(.036)	(.036)	
	Income share in pesos	1.000		1.016
		(<.001)		(.037)
	Spending share in USD	1.002	1.002	
		(.038)	(.038)	
	Spending share in pesos	1.000		.998
		(<.001)		(.037)
	Associated $p_{USD,i}$ at mean independent variable values:			
		.193***	.193***	.193***
		(.054)	(.054)	(.051)

The table represents the results of the logistic regression, where the outcome variable is the odds (estimated frequency) ratio of choosing dollar borrowing over peso borrowing. Ratios below 1 indicate a decrease in the estimated frequency, and the ratios above 1 indicate an increase in the estimated frequency. Specification 1 includes income and spending shares in both currencies. Specifications 2 and 3 include either dollar or peso income and spending shares only. All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

Table 37: Estimated frequency of borrowing in dollars over pesos associated with rate differentials and current and predicted exchange rates

Decision situation	Independent variable	(1)	(2)	(3)
				Odds ratio
50% of peso rate in USD vs peso rate	Rate differential	1.000	1.000	1.000
		(<.001)	(<.001)	(<.001)
	Exchange rate on the day of the survey	1.890	1.840	
		(6.459)	(6.121)	
	Predicted future exchange rate	.989		1.002
		(.076)		(.073)
	Associated $p_{USD,i}$ at mean independent variable values:			

		.930***	.930***	.930***
		(.023)	(.023)	(.023)
75% of peso rate in USD vs peso rate	Rate differential	1.000	1.000	1.000
		(<.001)	(<.001)	(<.001)
	Exchange rate on the day of the survey	2.296	1.025	
		(5.142)	(2.175)	
	Predicted future exchange rate	.517		.537
		(.376)		(.388)
		Associated $p_{USD,i}$ at mean independent variable values:		
		.953***	.945***	.953***
		(.022)	(.020)	(.023)
90% of peso rate in USD vs peso rate	Rate differential	1.000	1.000	1.000
		(<.001)	(<.001)	(<.001)
	Exchange rate on the day of the survey	1.455	3.435	
		(2.847)	(6.465)	
	Predicted future exchange rate	1.479		1.508
		(.747)		(.773)
		Associated $p_{USD,i}$ at mean independent variable values:		
		.838***	.838***	.838***
		(.033)	(.033)	(.033)
Peso rate in USD vs peso rate	Rate differential	1.000	1.000	1.000
		(<.001)	(<.001)	(<.001)
	Exchange rate on the day of the survey	.787	.783	
		(1.105)	(1.067)	
	Predicted future exchange rate	.998		.992
		(.089)		(.085)
		Associated $p_{USD,i}$ at mean independent variable values:		
		.672***	.672***	.667***
		(.042)	(.042)	(.042)
110% of peso rate in USD vs peso rate	Rate differential	1.000	1.000	1.000
		(<.001)	(<.001)	(<.001)
	Exchange rate on the day of the survey	1.793	.555	
		(2.879)	(.825)	
	Predicted future exchange rate	.426**		.443**

Decision situation	Independent variable	(1)	(2)	(3)
		(.156)		(.152)
	Associated $p_{USD,i}$ at mean independent variable values:			
		.236***	.234***	.236***
		(.039)	(.038)	(.039)
125% of peso rate in USD vs peso rate	Rate differential	1.000	1.000	1.000
		(<.001)	(<.001)	(<.001)
	Exchange rate on the day of the survey	.272	.431	
		(.728)	(1.055)	
	Predicted future exchange rate	1.395		1.306
		(.790)		(.685)
	Associated $p_{USD,i}$ at mean independent variable values:			
		.111***	.117***	.113***
		(.031)	(.029)	(.030)
150% of peso rate in USD vs peso rate	Rate differential	1.000	1.000	1.000
		(<.001)	(<.001)	(<.001)
	Exchange rate on the day of the survey	6.377	2.575	
		(17.879)	(6.972)	
	Predicted future exchange rate	.787**		.816**
		(.094)		(0.080)
	Associated $p_{USD,i}$ at mean independent variable values:			
		.111***	.116***	.114***
		(.030)	(.029)	(.029)

The table represents the results of the logistic regression, where the outcome variable is the odds ratio of choosing dollar borrowing over peso borrowing. Ratios below 1 indicate a decrease in the odds, and the ratios above 1 indicate an increase in the odds. Specification 1 includes both exchange rates. Specifications 2 and 3 include either current or predicted exchange rates only. All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

Table 38: Estimated frequency of borrowing in dollars over pesos associated with current and predicted exchange rates

Decision situation	Independent variable	(1)	(2)	(3)
		Odds ratio		
50% of peso rate in USD vs peso rate	Exchange rate on the day of the survey	1.890	1.840	
		(6.459)	(6.121)	
	Predicted future exchange rate	.989		1.002
		(.076)		(.073)

		Associated $p_{USD,i}$ **at mean independent variable values:**		
		.930***	.930***	.930***
		(.023)	(.023)	(.023)
75% of peso rate in USD vs peso rate	Exchange rate on the day of the survey	2.296	1.025	
		(5.142)	(2.175)	
	Predicted future exchange rate	.517		.534
		(.376)		(.388)
		Associated $p_{USD,i}$ **at mean independent variable values:**		
		.953***	.945***	.953***
		(.022)	(.020)	(.022)
90% of peso rate in USD vs peso rate	Exchange rate on the day of the survey	1.455	3.435	
		(2.847)	(6.465)	
	Predicted future exchange rate	1.479		1.500
		(.747)		(.742)
		Associated $p_{USD,i}$ **at mean independent variable values:**		
		.838***	.838***	.831***
		(.033)	(.033)	(.034)
Peso rate in USD vs peso rate	Exchange rate on the day of the survey	.787	.783	
		(1.105)	(1.067)	
	Predicted future exchange rate	.998		.992
		(.089)		(.085)
		Associated $p_{USD,i}$ **at mean independent variable values:**		
		.672***	.672***	.667***
		(.042)	(.042)	(.042)
110% of peso rate in USD vs peso rate	Exchange rate on the day of the survey	1.793	.555	
		(2.879)	(.825)	
	Predicted future exchange rate	.425**		.442**
		(.156)		(.153)
		Associated $p_{USD,i}$ **at mean independent variable values:**		
		.236***	.234***	.234***
		(.039)	(.038)	(.039)
125% of peso rate in USD vs peso rate	Exchange rate on the day of the survey	.272	.431	
		(.728)	(1.055)	
	Predicted future exchange rate	1.395		1.309

		(1)	(2)	(3)
		(.790)		(.692)
	Associated $p_{USD,i}$ at mean independent variable values:			
		.111***	.117***	.112***
		(.031)	(.029)	(.030)
150% of peso rate in USD vs peso rate	Exchange rate on the day of the survey	6.377	2.575	
		(17.879)	(6.972)	
	Predicted future exchange rate	.787**		.815**
		(.094)		(.080)
	Associated $p_{USD,i}$ at mean independent variable values:			
		.111***	.116***	.113***
		(.030)	(.029)	(.028)

The table represents the results of the logistic regression, where the outcome variable is the odds (estimated frequency) ratio of choosing dollar borrowing over peso borrowing. Ratios below 1 indicate a decrease in the estimated frequency, and the ratios above 1 indicate an increase in the estimated frequency. Specification 1 includes both exchange rates. Specifications 2 and 3 include either current or predicted exchange rates only. All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

Table 39: Estimated frequency borrowing in dollars over pesos associated with income and spending shares in both currencies

Decision situation	Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Odds ratio						
50% of peso rate in USD vs peso rate	Income share in USD	.986	.986		1.000			
		(.019)	(.018)		(.019)			
	Income share in pesos	1.000		1.014		1.000		
		(<.001)		(.020)		(.019)		
	Spending share in USD	1.057	1.057				1.057*	
		(.035)	(.035)				(.033)	
	Spending share in pesos	1.000		.946				.946*
		(<.001)		(.032)				(.030)
	Associated $p_{USD,i}$ at mean independent variable values:							
		.938***	.938***	.938***	.923***	.923***	.948***	.948***
		(.024)	(.024)	(.024)	(.025)	(.025)	(.024)	(.024)
75% of peso rate in USD vs peso rate	Income share in USD	1.012	1.012		1.022			
		(.028)	(.028)		(.021)			
	Income share in pesos	1.000		.988		.979		

		($<.001$)		(.027)		(.020)		
	Spending share in USD	1.028	1.028				1.040	
		(.048)	(.048)				(.033)	
	Spending share in pesos	1.000		.973				.962
		($<.001$)		(.046)				(.030)
		Associated $p_{USD,i}$ at mean independent variable values:						
		.947***	.947***	.947***	.944***	.944***	.953***	.953***
		(.022)	(.022)	(.022)	(.022)	(.022)	(.021)	(.021)
90% of peso rate in USD vs peso rate	Income share in USD	.953**	.953**		.952**			
		(.022)	(.022)		(.019)			
	Income share in pesos	1.000		1.049**		1.049**		
		($<.001$)		(.025)		(.021)		
	Spending share in USD	.999	.999				.973	
		(.022)	(.022)				(.018)	
	Spending share in pesos	1.000		1.001				1.028
		($<.001$)		(.022)				(.019)
		Associated $p_{USD,i}$ at mean independent variable values:						
		.883***	.883***	.883***	.883***	.883***	.838***	.838***
		(.034)	(.034)	(.034)	(.034)	(.034)	(.035)	(.035)
Peso rate in USD vs peso rate	Income share in USD	.949**	.949**		.945**			
		(.023)	(.023)		(.023)			
	Income share in pesos	1.000		1.054**		1.058**		
		($<.001$)		(.025)		(.025)		
	Spending share in USD	.991	.991				.955***	
		(.016)	(.016)				(.017)	
	Spending share in pesos	1.000		1.009				1.047***
		($<.001$)		(.016)				(.018)
		Associated $p_{USD,i}$ at mean independent variable values:						
		.750***	.750***	.750***	.751***	.751***	.684***	.684***
		(.053)	(.053)	(.053)	(.054)	(.054)	(.046)	(.046)
110% of peso rate in USD vs peso rate	Income share in USD	.976*	.976*		.975**			
		(.013)	(.013)		(.011)			
	Income share in pesos	1.000		1.025*		1.026**		
		($<.001$)		(.014)		(.012)		

		(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Spending share in USD	.997 (.017)	.997 (.017)				.980 (.013)	
	Spending share in pesos	1.000 (<.001)		1.003 (.018)				1.020 (.014)
	Associated $p_{USD,i}$ at mean independent variable values:							
		.238*** (.041)	.238*** (.041)	.238*** (.041)	.239*** (.041)	.239*** (.041)	.228*** (.038)	.228*** (.038)
125% of peso rate in USD vs peso rate	Income share in USD	1.017 (.021)	1.017 (.021)		1.006 (.018)			
	Income share in pesos	1.000 (<.001)		.983 (.020)		.994 (.018)		
	Spending share in USD	.965 (.025)	.965 (.025)				.966 (.021)	
	Spending share in pesos	1.000 (<.001)		1.036 (.027)				1.035 (.023)
	Associated $p_{USD,i}$ at mean independent variable values:							
		.110*** (.032)	.110*** (.032)	.110*** (.032)	.119*** (.030)	.119*** (.030)	.105*** (.030)	.105*** (.030)
150% of peso rate in USD vs peso rate	Income share in USD	1.012 (.017)	1.012 (.017)		1.000 (.016)			
	Income share in pesos	1.000 (<.001)		.988 (.017)		1.000 (.016)		
	Spending share in USD	.962 (.024)	.962 (.024)				.961* (.020)	
	Spending share in pesos	1.000 (<.001)		1.039 (.026)				1.040* (.022)
	Associated $p_{USD,i}$ at mean independent variable values:							
		.109*** (.031)	.109*** (.031)	.109*** (.031)	.120*** (.030)	.120*** (.030)	.103*** (.029)	.103*** (.029)

The table represents the results of the logistic regression, where the outcome variable is the odds (estimated frequency) ratio of choosing dollar borrowing over peso borrowing. Ratios below 1 indicate a decrease in the estimated frequency, and the ratios above 1 indicate an increase in the estimated frequency. Specification 1 includes income and spending shares in both currencies. Specifications 2 and 3 include income and spending shares in either dollars or pesos. Specifications 4-7 include singular variables from the list. All standard errors are robust and reported in (). * indicates p<.1, ** indicates p<.05, and *** indicates p<.01.

Table 40: Estimated frequency of borrowing in dollars over pesos associated with various demographic variables

Decision situation	Independent variable	Odds ratio
50% of peso rate in USD vs peso rate	Age	1.530
		(0.425)
	Household size	.321
		(.301)
	Gender	
	Male	.437
		(.460)
	Education	
	Master's degree or equivalent	2.525
		(3.721)
	Technical/community college or equivalent	2.027
		(2.951)
	Lives in the USA	1.000
		($<.001$)
	Lives in Mexico	3.248
		(4.744)
	Earns in the USA	1.000
		($<.001$)
	Earns in Mexico	.034
		(.096)
	Spends in the USA	.265
		(.408)
	Spends in Mexico	262.363*
		(854.945)
	Checking account in the USA	7.029
		(9.878)
	Checking account in Mexico	13.693**
		(16.803)
	Savings account in the USA	1.000
		($<.001$)
	Savings account in Mexico	6060.189*
		(28,836.860)
	Credit cards in the USA	6.138*
		(5.977)
	Credit cards in Mexico	.005**
		(.010)
	Associated $p_{USD,i}$ at mean independent variable values:	
		1.000***
		(.001)
75% of peso rate in USD vs peso rate	Age	1.080
		(.084)
	Household size	.572
		(.384)
	Gender	
	Male	.687
		(1.026)
	Education	
	Master's degree or equivalent	1.221
		(1.924)
	Technical/community college or equivalent	5.144
		(7.681)
	Lives in the USA	1.000
		($<.001$)
	Lives in Mexico	.525
		(.731)
	Earns in the USA	1.000
		($<.001$)
	Earns in Mexico	1.115

		(1.136)
	Spends in the USA	1.024
		(2.081)
	Spends in Mexico	1.911
		(3.574)
	Checking account in the USA	2.799
		(4.166)
	Checking account in Mexico	5.634**
		(4.887)
	Savings account in the USA	1.000
		(<.001)
	Savings account in Mexico	1.858
		(3.718)
	Credit cards in the USA	2.222
		(2.554)
	Credit cards in Mexico	.244
		(.217)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.977***
		(.017)
90% of peso rate in USD vs peso rate	Age	1.079
		(.070)
	Household size	.689
		(.323)
	Gender	
	Male	5.043
		(3.569)
	Education	
	Technical/community college or equivalent	.626
		(.506)
	Lives in the USA	1.000
		(<.001)
	Lives in Mexico	<.001***
		(<.001)
	Earns in the USA	1.000
		(<.001)
	Earns in Mexico	5.31e+07***
		(7.70e+07)
	Spends in the USA	.073
		(.124)
	Spends in Mexico	<.001***
		(<.001)
	Checking account in the USA	5.196
		(7.785)
	Checking account in Mexico	9.876
		(18.932)
	Savings account in the USA	1.000
		(<.001)
	Savings account in Mexico	.377
		(.281)
	Credit cards in the USA	2.837
		(5.916)
	Credit cards in Mexico	19.302
		(46.627)
	Associated $p_{USD,i}$ at mean independent variable values:	
		1.000***
		(<.001)
Peso rate in USD vs peso rate	Age	.994
		(.048)
	Household size	.820
		(.303)
	Gender	

	Male	1.169
		(.763)
	Education	
	Master's degree or equivalent	.565
		(.532)
	Technical/community college or equivalent	.365
		(.326)
	Lives in the USA	1.000
		($<$.001)
	Lives in Mexico	.066*
		(.101)
	Earns in the USA	1.000
		($<$.001)
	Earns in Mexico	15.076*
		(22.079)
	Spends in the USA	.642
		(1.112)
	Spends in Mexico	.021**
		(.041)
	Checking account in the USA	.133
		(.243)
	Checking account in Mexico	1.824
		(1.778)
	Savings account in the USA	1.000
		($<$.001)
	Savings account in Mexico	.664
		(.476)
	Credit cards in the USA	3.508
		(4.519)
	Credit cards in Mexico	3.457
		(4.021)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.770***
		(.050)
110% of peso rate in USD vs peso rate	Age	.896**
		(.047)
	Household size	1.801*
		(.548)
	Gender	
	Male	1.678
		(1.191)
	Education	
	Master's degree or equivalent	.329
		(.270)
	Technical/community college or equivalent	.784
		(.815)
	Lives in the USA	1.000
		($<$.001)
	Lives in Mexico	.930
		(.654)
	Earns in the USA	1.000
		($<$.001)
	Earns in Mexico	.707
		(.530)
	Spends in the USA	1.000
		($<$.001)
	Spends in Mexico	.185
		(.206)
	Checking account in the USA	1.000
		($<$.001)
	Checking account in Mexico	.715
		(.424)

	Savings account in the USA	1.000
		(<.001)
	Savings account in Mexico	1.392
		(1.269)
	Credit cards in the USA	.288
		(.338)
	Credit cards in Mexico	.761
		(.507)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.176***
		(.041)
125% of peso rate in USD vs peso rate	Age	.642*
		(.163)
	Household size	1.400
		(.848)
	Gender	
	Male	.665
		(1.048)
	Education	
	Technical/community college or equivalent	<.001***
		(<.001)
	Lives in the USA	1.000
		(<.001)
	Lives in Mexico	3.120
		(3.877)
	Earns in the USA	1.000
		(<.001)
	Earns in Mexico	1.107
		(1.430)
	Spends in the USA	.714
		(.897)
	Spends in Mexico	1.000
		(<.001)
	Checking account in the USA	<.001***
		(<.001)
	Checking account in Mexico	.283
		(.455)
	Savings account in the USA	1.000
		(<.001)
	Savings account in Mexico	.077
		(.124)
	Credit cards in the USA	3.327
		(4.439)
	Credit cards in Mexico	1.885
		(1.961)
	Associated $p_{USD,i}$ at mean independent variable values:	
		.002
		(.003)
150% of peso rate in USD vs peso rate	Age	.785***
		(.063)
	Household size	2.762
		(1.888)
	Gender	
	Male	.931
		(1.093)
	Education	
	Master's degree or equivalent	.690
		(.933)
	Technical/community college or equivalent	.770
		(1.888)
	Lives in the USA	1.000
		(<.001)

Lives in Mexico	17.378***
	(16.820)
Earns in the USA	1.000
	($<$.001)
Earns in Mexico	.187
	(.223)
Spends in the USA	1.000
	($<$.001)
Spends in Mexico	2.183
	(3.033)
Checking account in the USA	5.024
	(9.282)
Checking account in Mexico	1.436
	(1.519)
Savings account in the USA	1.000
	($<$.001)
Savings account in Mexico	.234
	(.337)
Credit cards in the USA	2.705
	(3.336)
Credit cards in Mexico	1.044
	(.941)
Associated $p_{USD,i}$ at mean independent variable values:	
	.024
	(.019)

The table represents the results of the logistic regression, where the outcome variable is the odds (estimated frequency) ratio of choosing dollar borrowing over peso borrowing. Ratios below 1 indicate a decrease in the estimated frequency, and the ratios above 1 indicate an increase in the estimated frequency. All standard errors are robust and reported in (). * indicates p$<$.1, ** indicates p$<$.05, and *** indicates p$<$.01.

13   Appendix C: Qualtrics survey design

![Washington University in St. Louis]

Let's determine your eligibility.

	USA	Mexico
I live in...	☐	☐
I earn money in...	☐	☐
I spend money in...	☐	☐

→

Figure 28: Eligibility criteria

What is your annual income in dollars? Please only report the income that you earn in the United States.

Annual income in dollars

What is your annual income in pesos? Please only report the income that you earn in Mexico.

Annual income in pesos

What is the fraction (%) of your total spending that is denominated in dollars?

0   10   20   30   40   50   60   70   80   90   100

USD spending %

Figure 29: Annual income and spending

Today's exchange rate: $1 = 19.18 pesos (As of the end of the day on August 2, 2024)
What is your guess for the exchange rate 6 months from today?

Pesos per $1   [   ]

Figure 30: Exchange rate expectations

I have...

	In the United States	In Mexico
A checking account	☐	☐
A savings account	☐	☐
Credit card(s)	☐	☐

Figure 31: Bank account ownership

Do you carry a balance on your credit card from month to month?

Yes

No

Unsure

Figure 32: Credit card ownership

What is your current balance on dollar-denominated credit cards? Please only report the balance on the credit cards that you hold in the United States.

Credit card balance (in $)

What is your current balance on peso-denominated credit cards? Please only report the balance on the credit cards that you hold in Mexico.

Credit card balance (in pesos)

Figure 33: Credit card ownership

Have you taken out a personal loan in the past 12 months?

Yes

No

→

Figure 34: Personal loan questions

What was the currency of the loan?

Dollar

Peso

What was the total amount of money you borrowed?

Total sum of the
loan

What was the interest rate on the loan?

Interest rate (in %)

Figure 35: Personal loan questions

If you have received a personal loan in the past 12 months, what was the purpose
of the loan?

Mortgage

Car loan

Other

Figure 36: Personal loan questions

Who provided the loan?

Bank

Credit union

Online lending/crowdfunding platform

Employer

Relatives/friends

Figure 37: Personal loan questions

Do you think you would have access to loans in another currency?
For instance, if you did end up borrowing in pesos, would you have access to dollar loans (and vice versa)?

Yes

No

Unsure

→

Figure 38: Personal loan questions

Money today or money 12 months from now?

In this task, you will need to make a choice between 2 options: one is money received today and another is money received in 12 months from now.
Please choose between 2 options: A or B.

A: $100 today; B: $100 in 12 months   [A]   [B]

A: $100 today; B: $105.00 in 12 months   [A]   [B]

A: $100 today; B: $107.50 in 12 months   [A]   [B]

A: $100 today; B: $110.00 in 12 months   [A]   [B]

A: $100 today; B: $112.50 in 12 months   [A]   [B]

A: $100 today; B: $115.00 in 12 months   [A]   [B]

Figure 39: Time value of money

Money today or money 12 months from now?

In this task, you will need to make a choice between 2 options: one is money received today and another is money received in 12 months from now.
Please choose between 2 options: A or B.

A: 1000 pesos today; B: 1000 pesos in 12 months	A	B
A: 1000 pesos today; B: 1050 pesos in 12 months	A	B
A: 1000 pesos today; B: 1075 pesos in 12 months	A	B
A: 1000 pesos today; B: 1100 pesos in 12 months	A	B
A: 1000 pesos today; B: 1125 pesos in 12 months	A	B
A: 1000 pesos today; B: 1150 pesos in 12 months	A	B

Figure 40: Time value of money

Guaranteed money, or a lottery?

In this task, you will need to choose one option from 10 paired choices, where payoffs and their chances are given to you.

For each of the 10 choices, you will be asked to select Option A or Option B.

A: $50 with 100% chance. B: $100 with 30% chance. | A | | B |

A: $50 with 100% chance. B: $100 with 40% chance. | A | | B |

A: $50 with 100% chance. B: $100 with 50% chance. | A | | B |

A: $50 with 100% chance. B: $100 with 60% chance. | A | | B |

A: $50 with 100% chance. B: $100 with 70% chance. | A | | B |

A: $50 with 100% chance. B: $100 with 80% chance. | A | | B |

Figure 41: Guaranteed money or lottery?

Please choose between 2 interest rates in each of the rows.

A: 5.5%, borrow in USD; B: 11%, borrow in pesos	A	B
A: 8.25%, borrow in USD; B: 11%, borrow in pesos	A	B
A: 9.9%, borrow in USD; B: 11%, borrow in pesos	A	B
A: 11%, borrow in USD; B: 11%, borrow in pesos	A	B
A: 12.1%, borrow in USD; B: 11%, borrow in pesos	A	B
A: 13.75%, borrow in USD; B: 11%, borrow in pesos	A	B
A: 16.5%, borrow in USD; B: 11%, borrow in pesos	A	B

Figure 42: Interest rate choice

Please indicate your age.

Age in years

Please indicate your gender.

Male

Female

Non-binary / third gender

Prefer not to say

Figure 43: Demographic questions

Please indicate your completed level of education.

Below high school

High school or equivalent

Technical/community college or equivalent

Bachelor's degree or equivalent

Master's degree or equivalent

PhD or equivalent

Medical or law school degree

Figure 44: Demographic questions

Please indicate the number of people in your immediate household (living under one roof).

| 0 | 1 | 2 | 3 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 |

# of people ☐ More than 10

Figure 45: Demographic questions

Washington University in St. Louis

Thank you for your response! Below is the link to the personal information form. We need your information for the gift card payment.

Personal information form

Figure 46: End of the survey

14 Appendix D: Actual versus predicted USD borrowing decisions
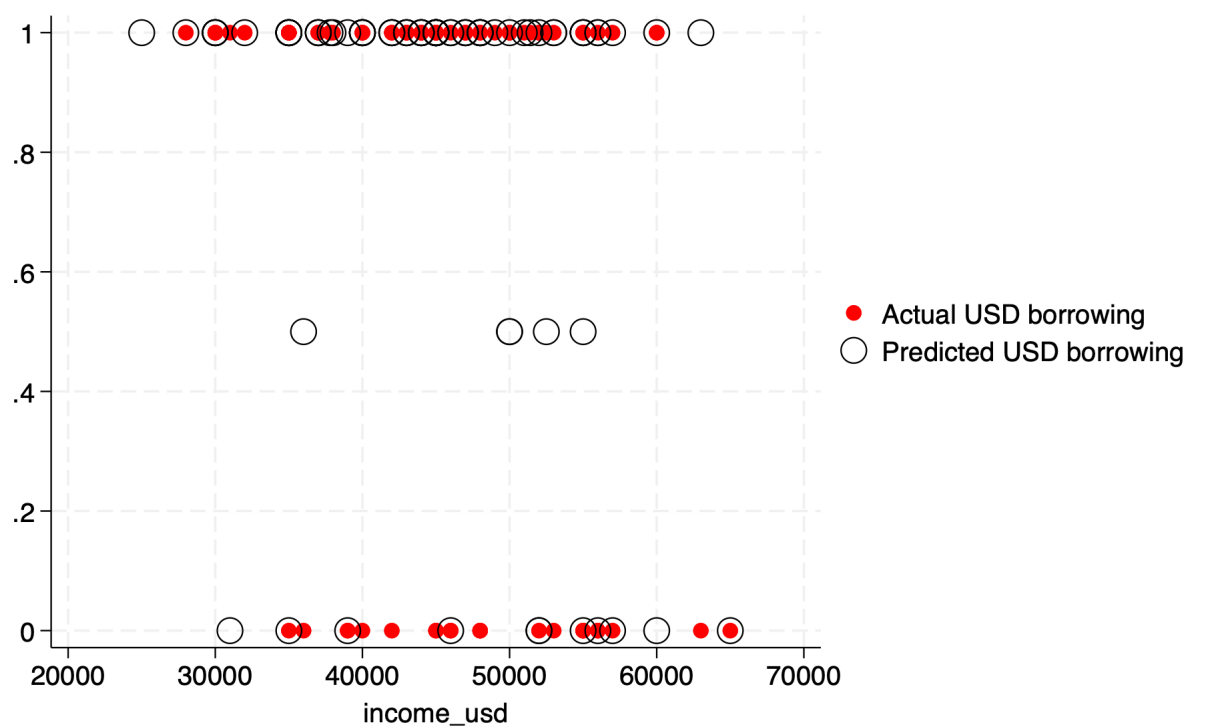
14.1 Peso consumption model
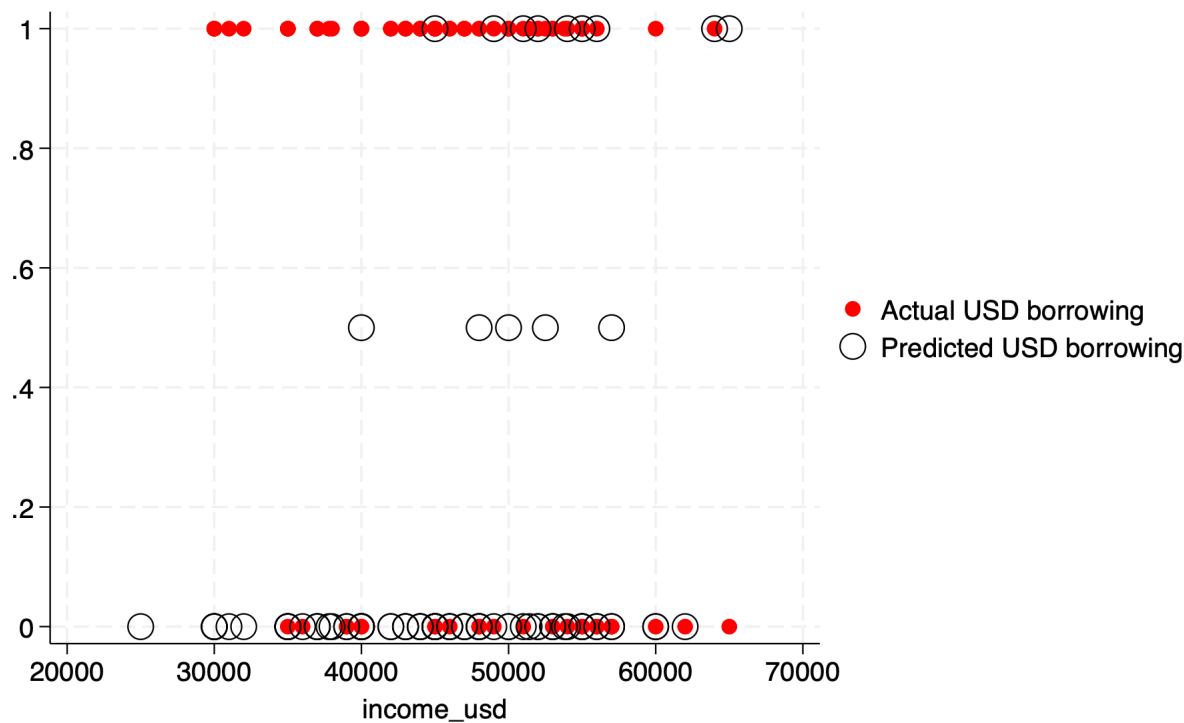
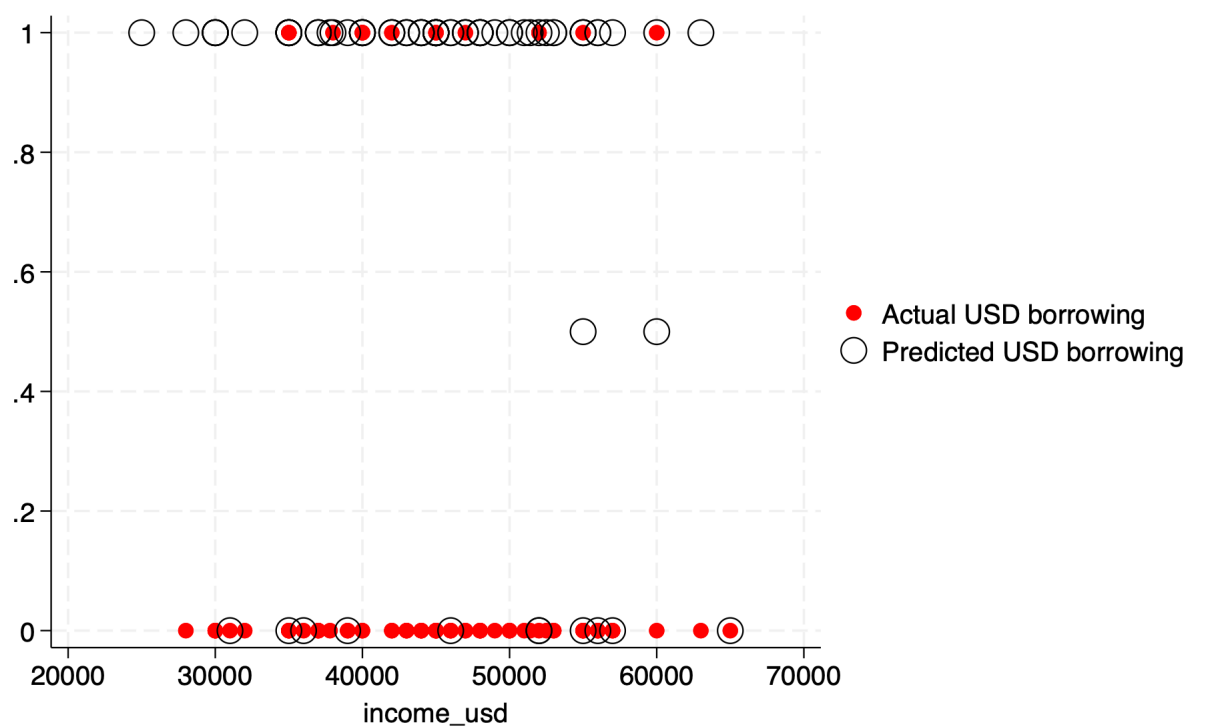Figure 47: Actual and predicted USD borrowing decisions by income in USD, $R_{USD} = R_{MX}$
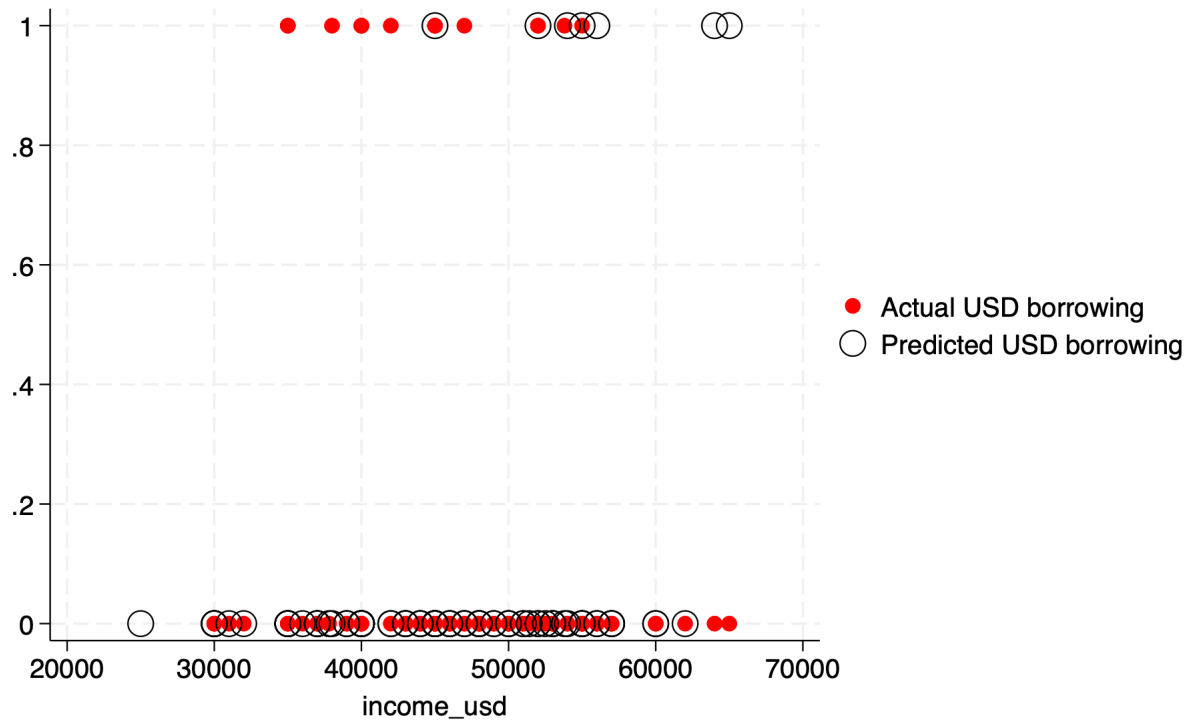
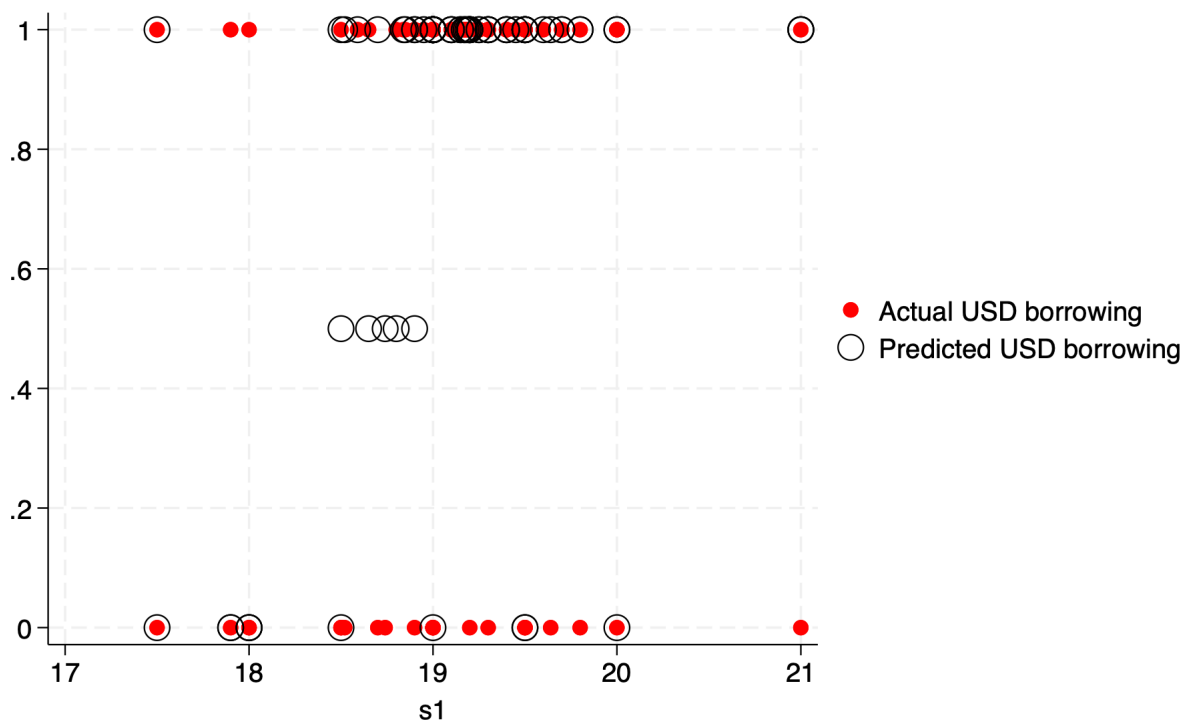Figure 48: Actual and predicted USD borrowing decisions by income in USD, $R_{USD} > R_{MX}$
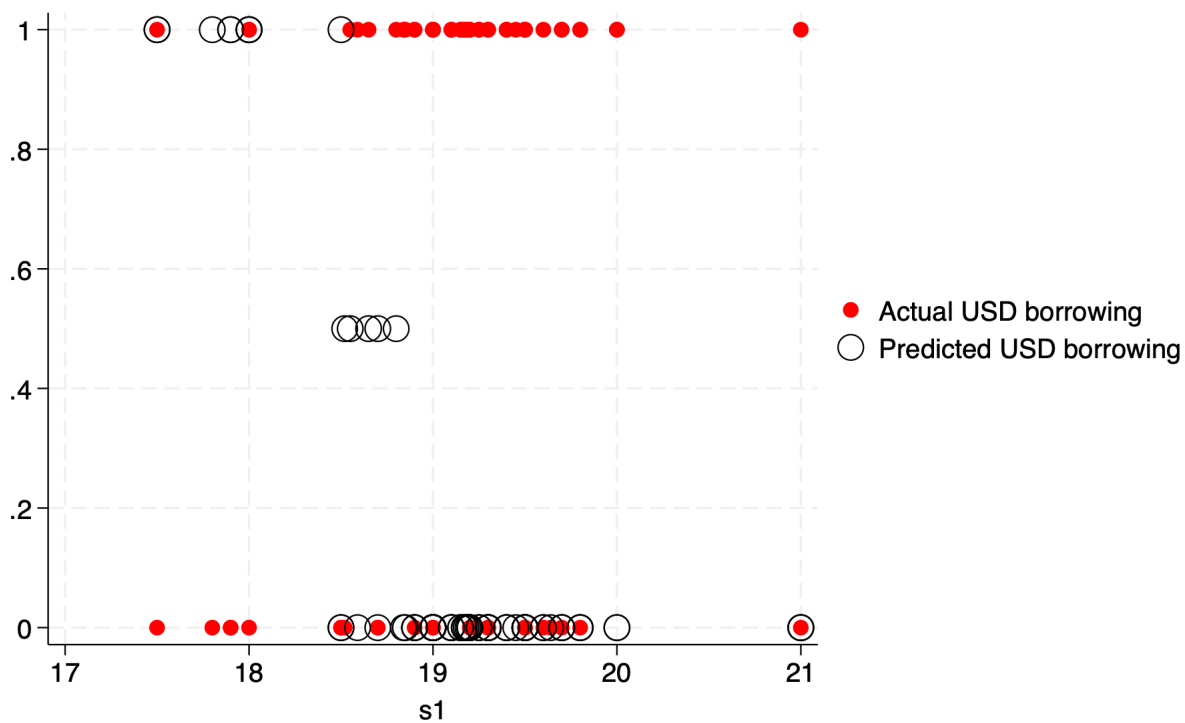
Figure 49: Actual and predicted USD borrowing decisions by predicted exchange rate, $R_{USD} = R_{MX}$
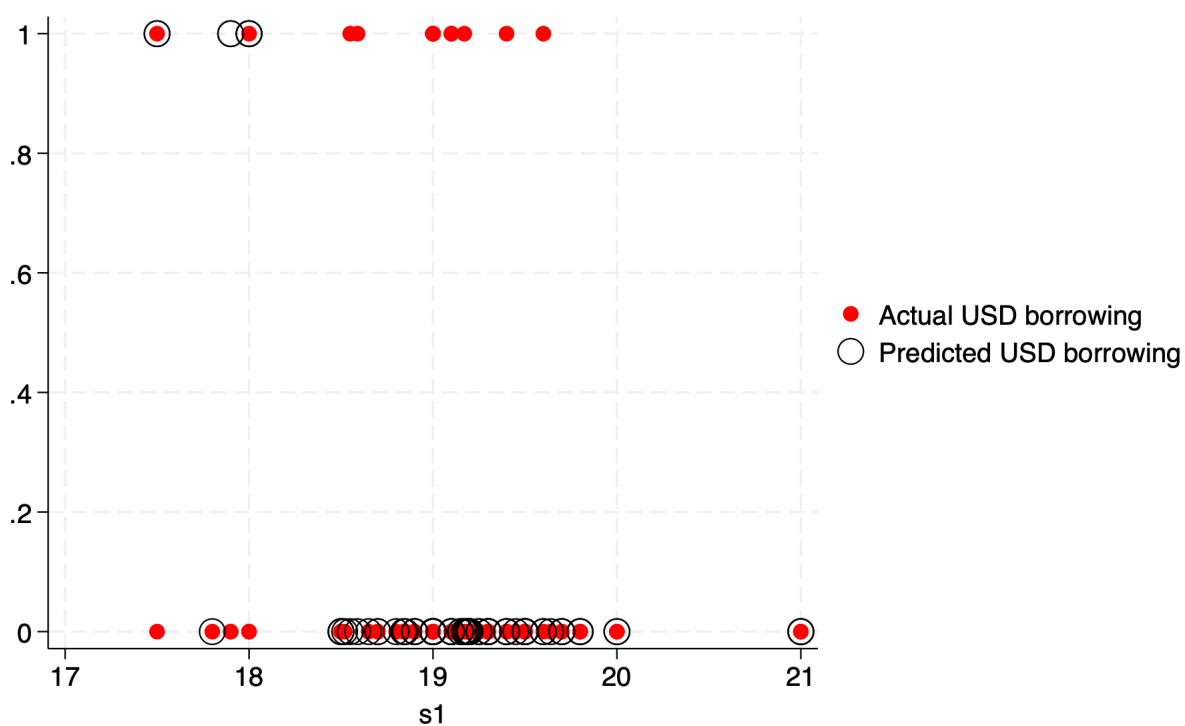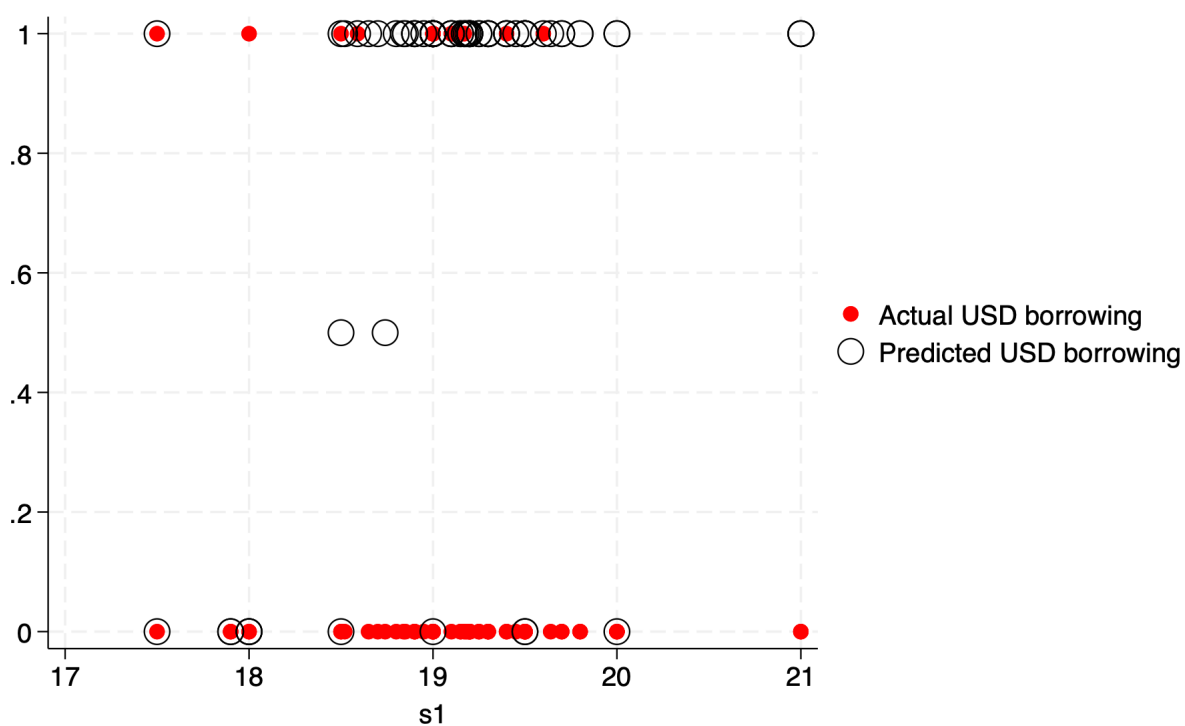

Figure 50: Actual and predicted USD borrowing decisions by predicted exchange rate, $R_{USD} > R_{MX}$
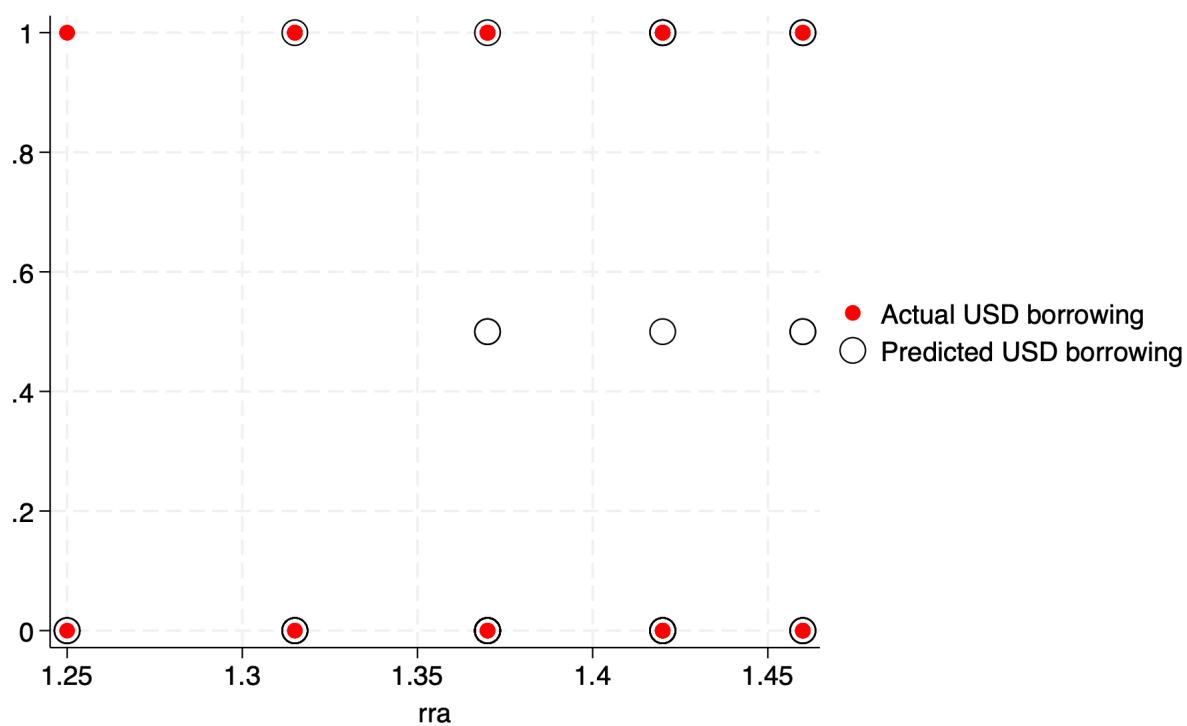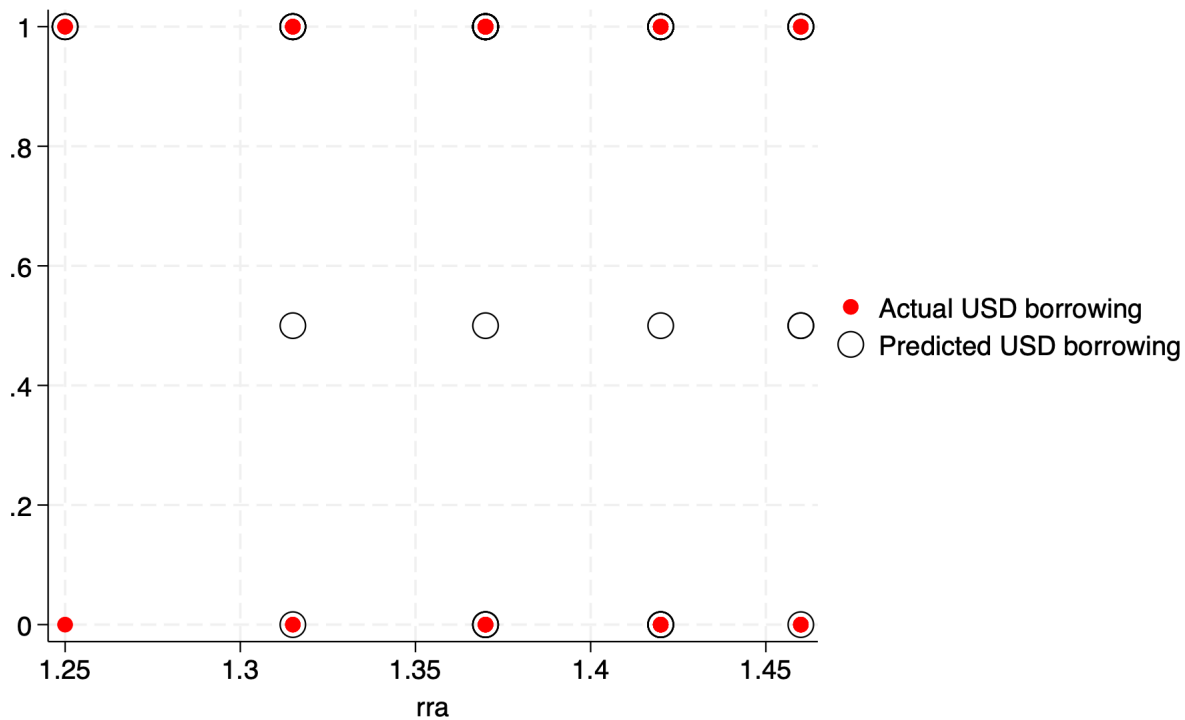
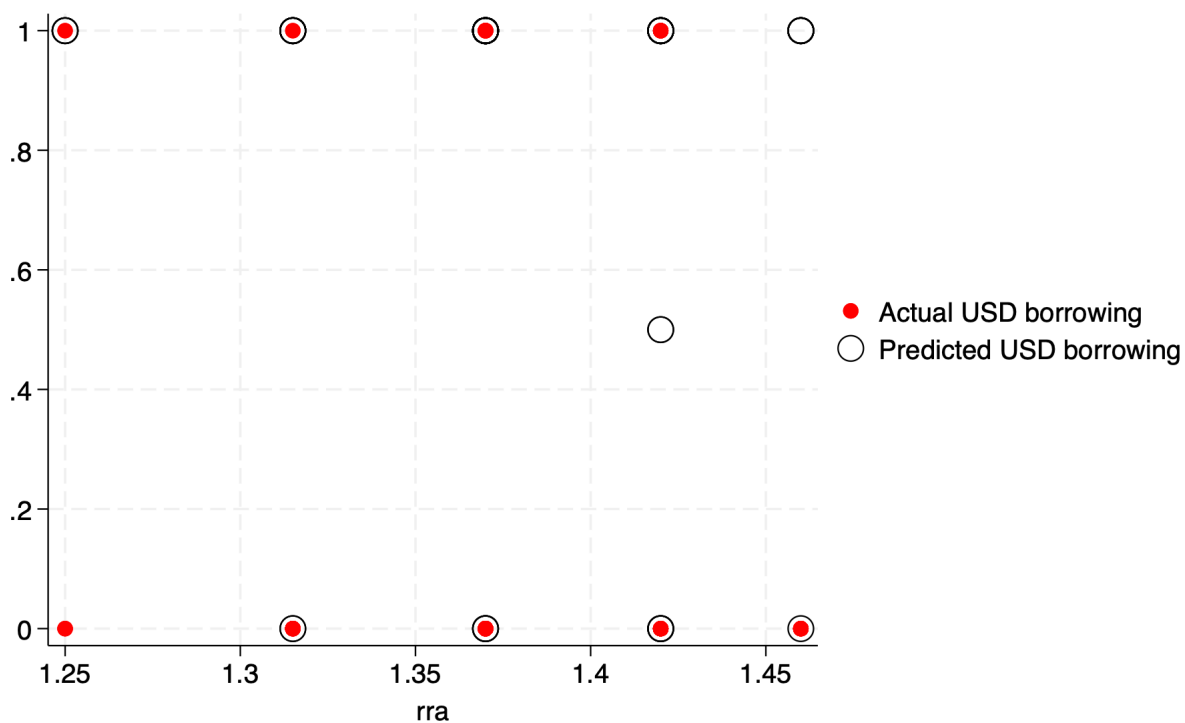Figure 51: Actual and predicted USD borrowing decisions by relative risk aversion, $R_{USD} = R_{MX}$
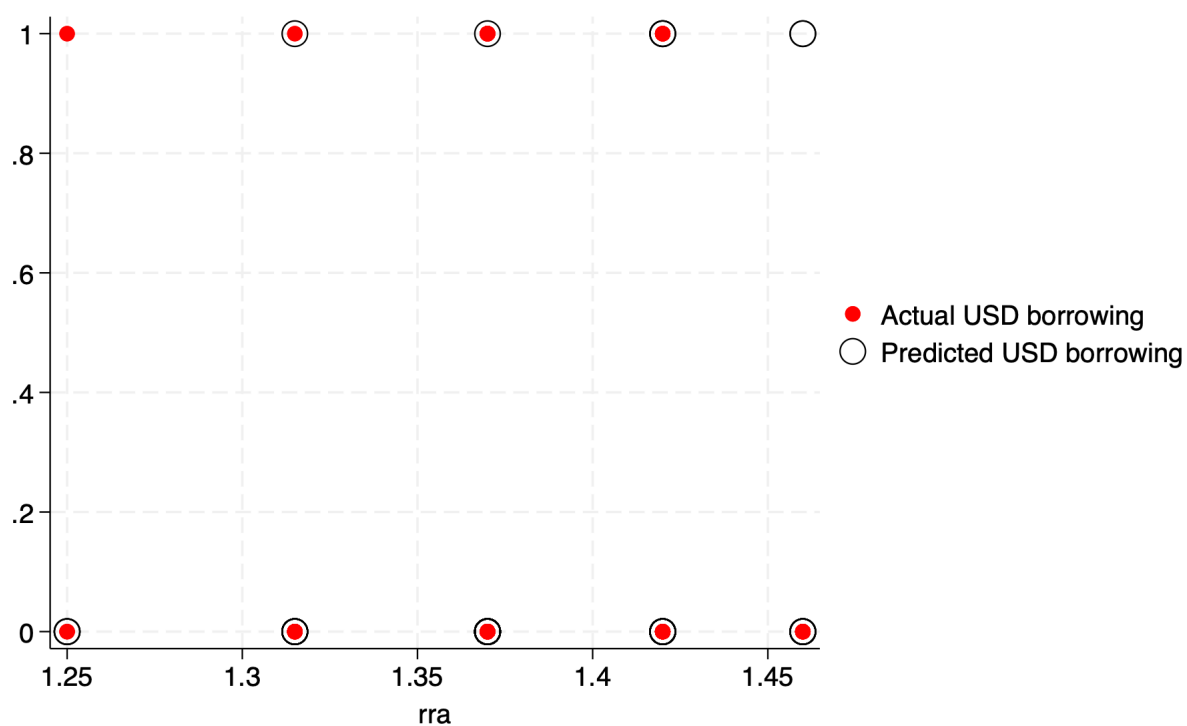
Figure 52: Actual and predicted USD borrowing decisions by relative risk aversion, $R_{USD} > R_{MX}$
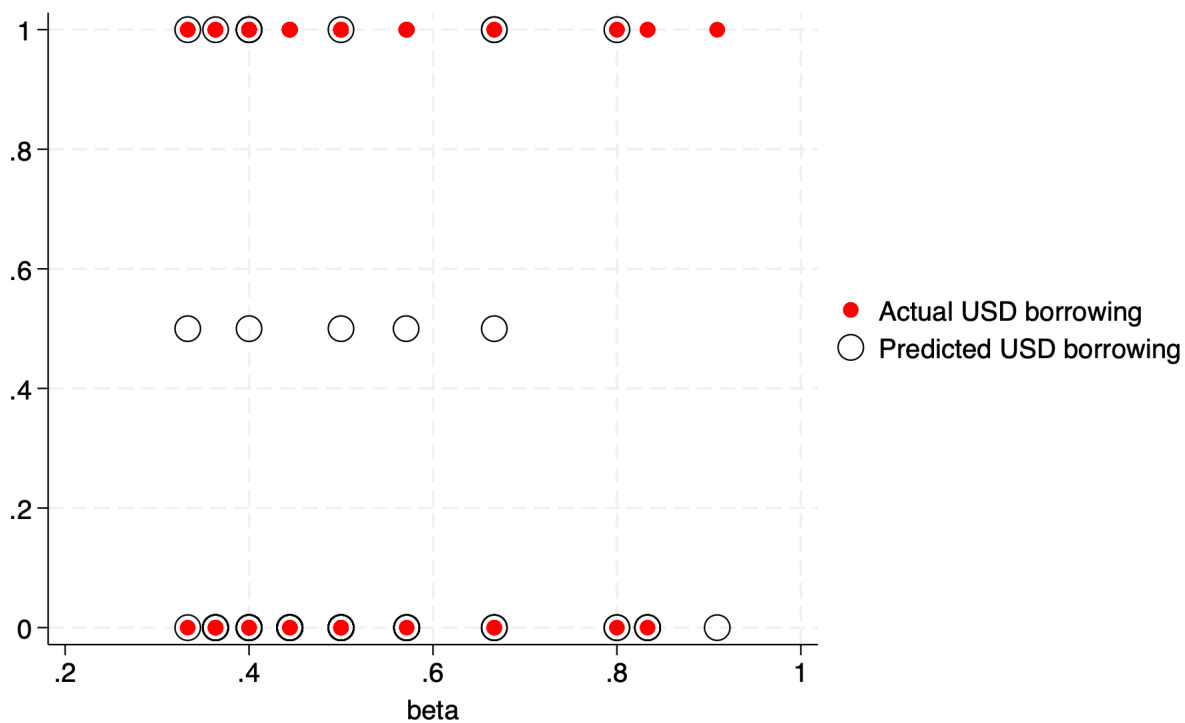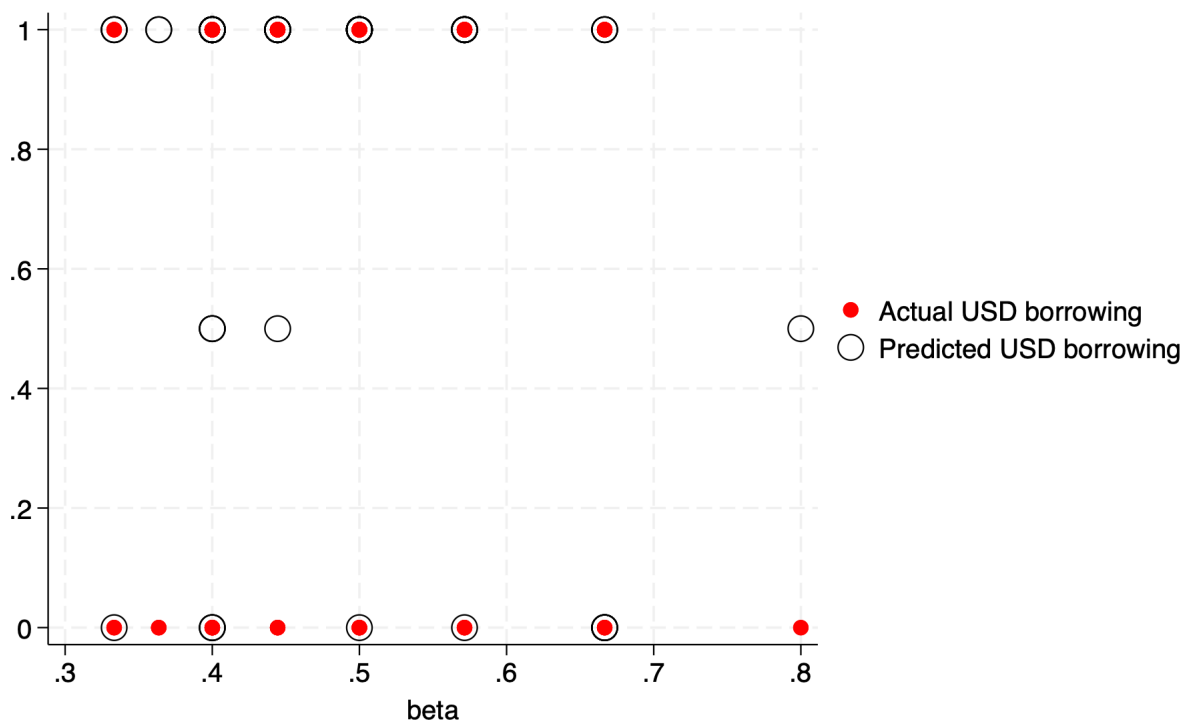
Figure 53: Actual and predicted USD borrowing decisions by time discount rate, $R_{USD} = R_{MX}$
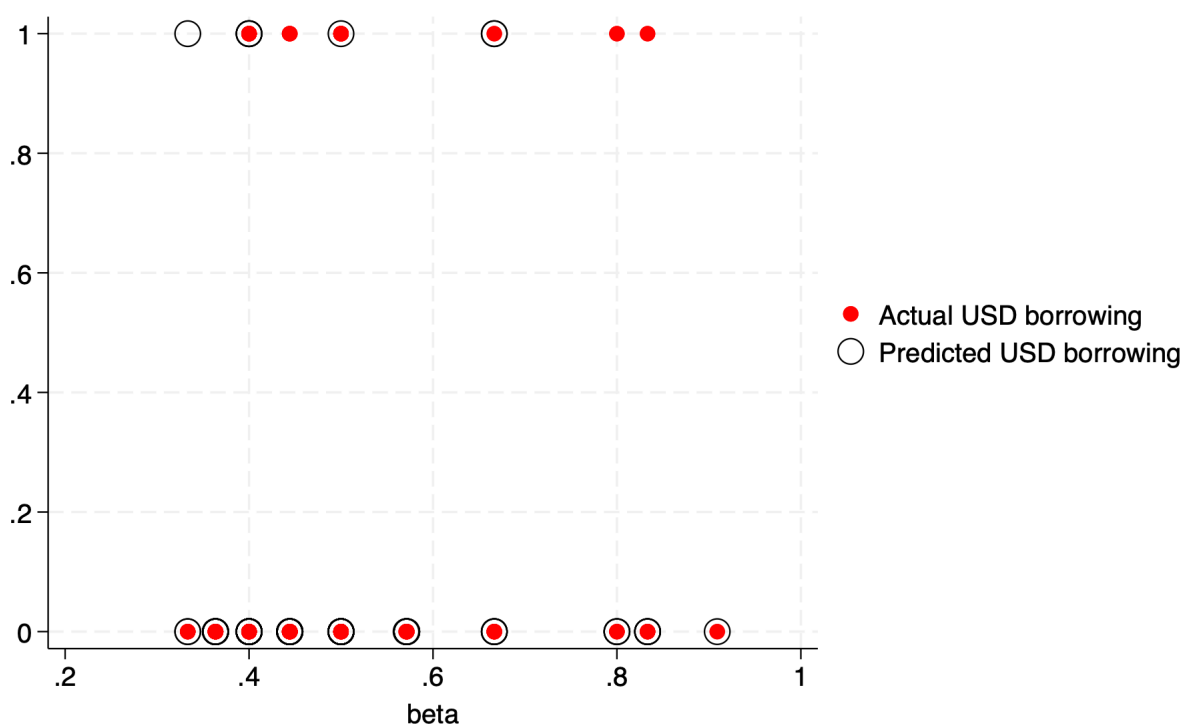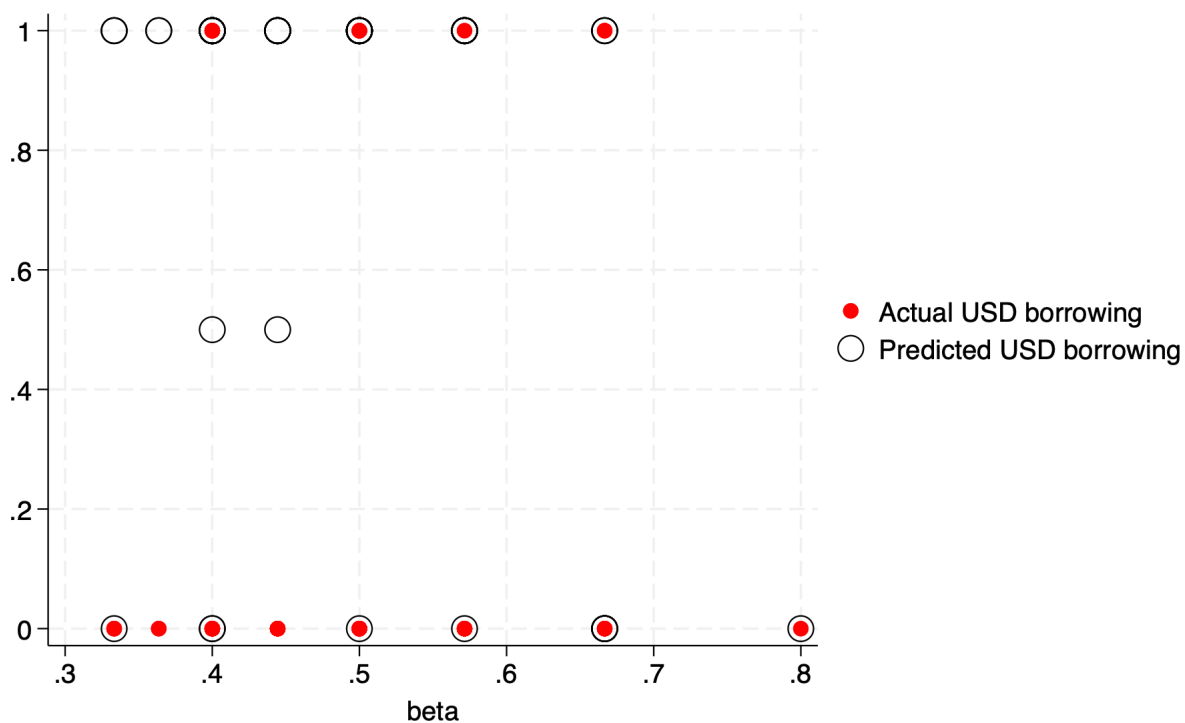

Figure 54: Actual and predicted USD borrowing decisions by time discount rate, $R_{USD} > R_{MX}$
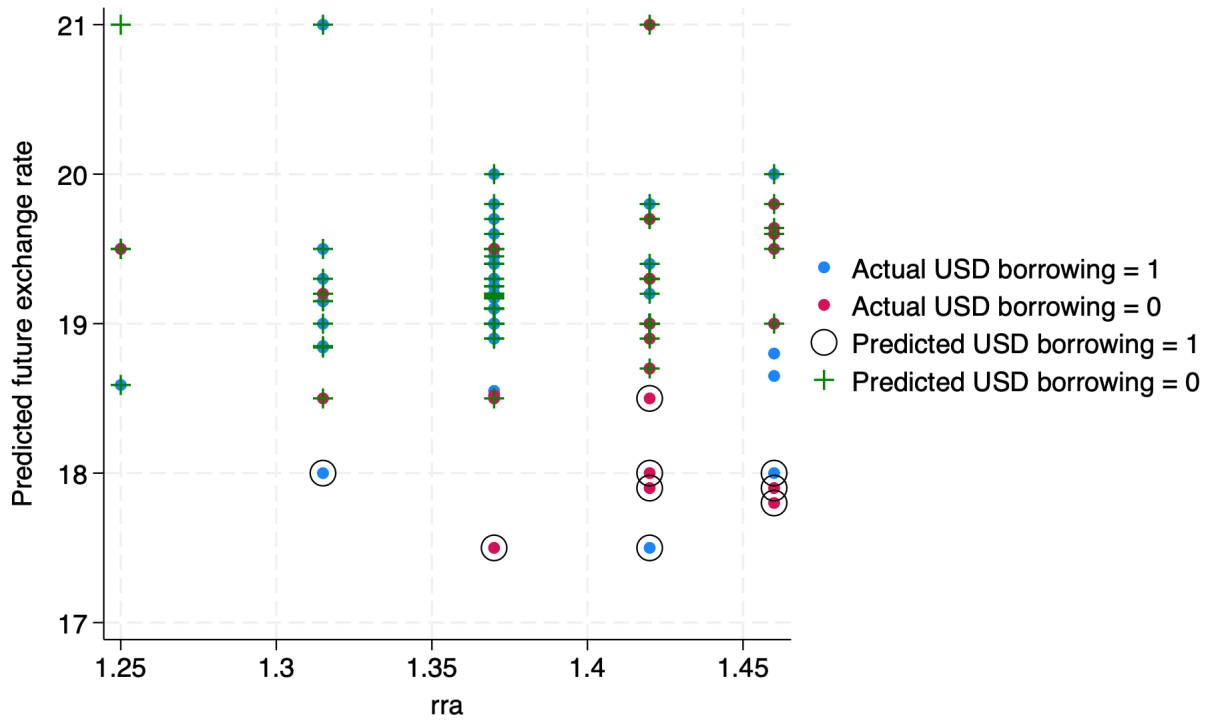
Figure 55: Actual and predicted USD borrowing decisions by predicted exchange rate and relative risk aversion, $R_{USD} = R_{MX}$
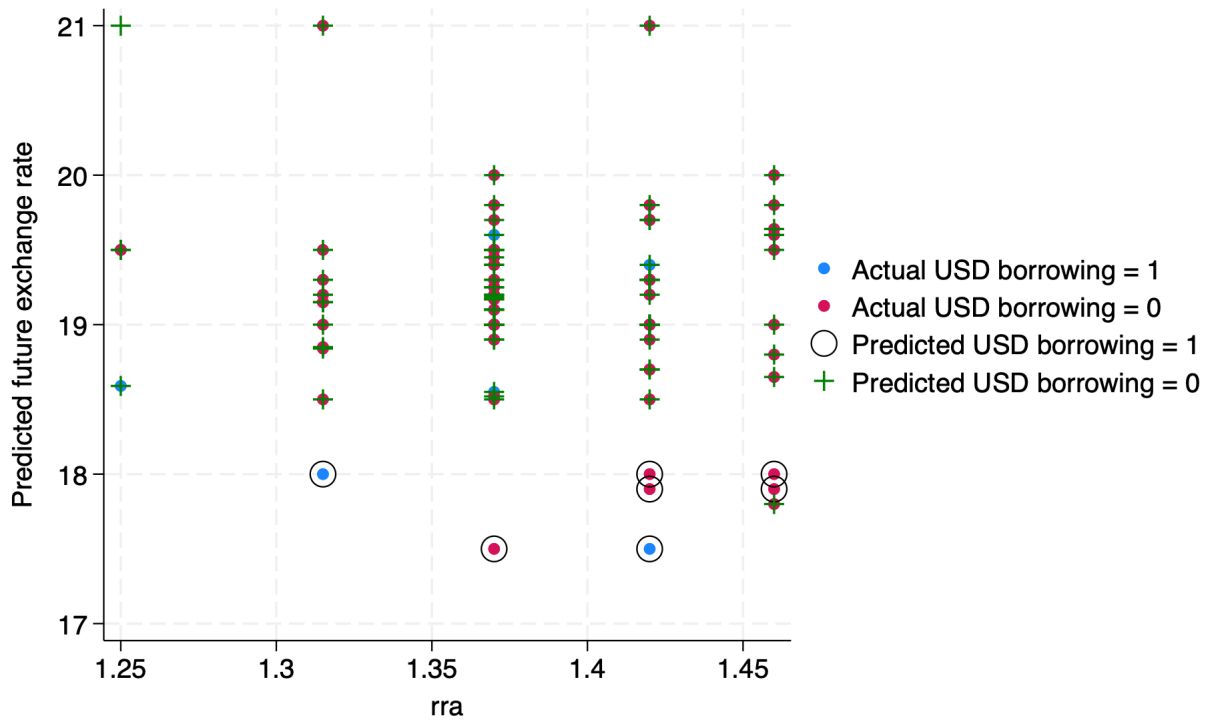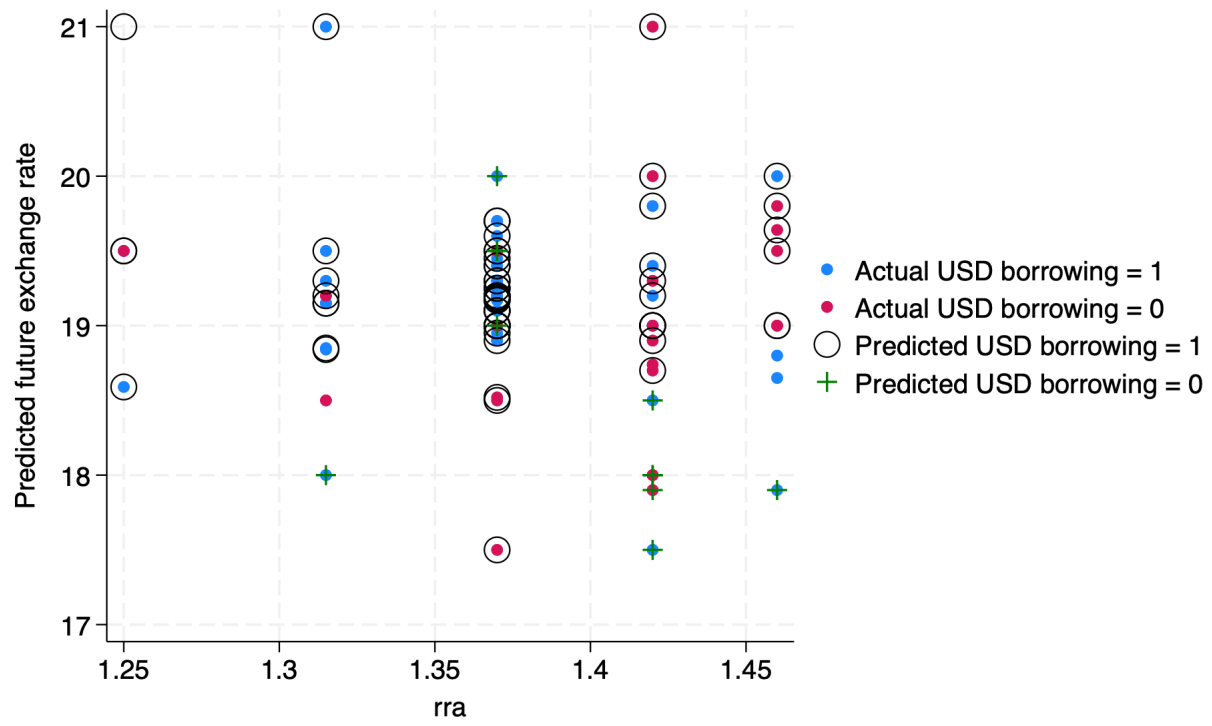

Figure 56: Actual and predicted USD borrowing decisions by predicted exchange rate and relative risk aversion, $R_{USD} > R_{MX}$
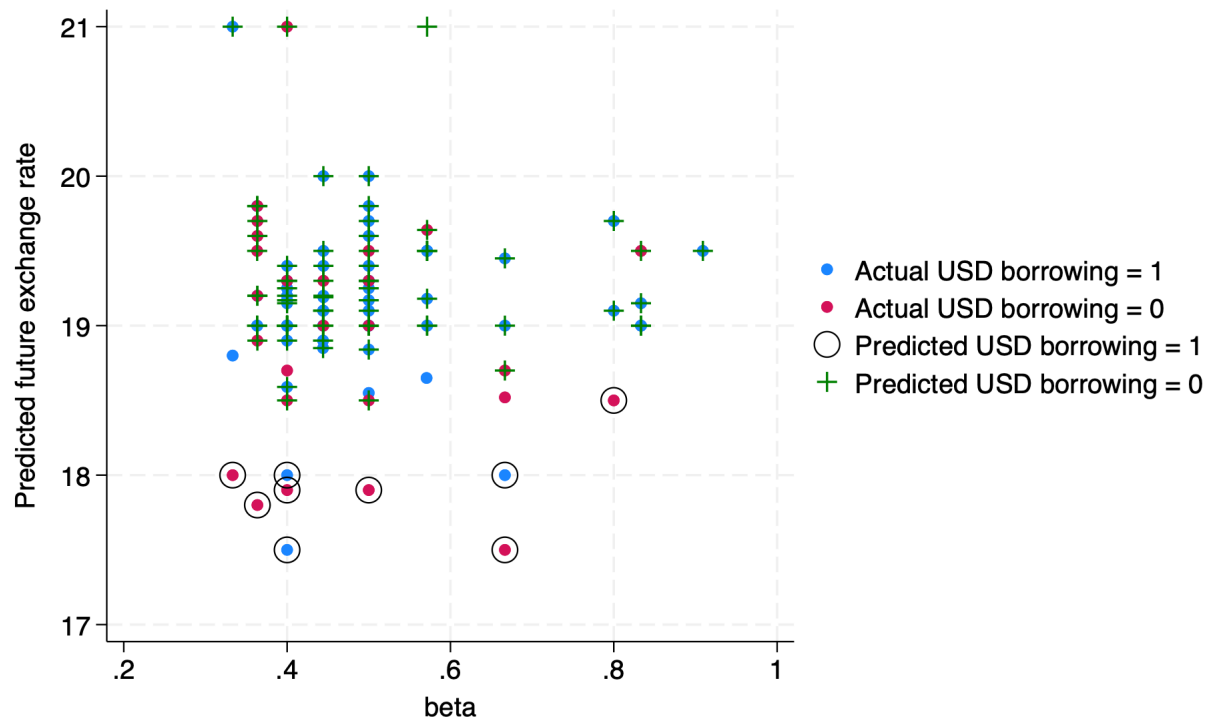
Figure 57: Actual and predicted USD borrowing decisions by predicted exchange rate and time discount rate, $R_{USD} = R_{MX}$
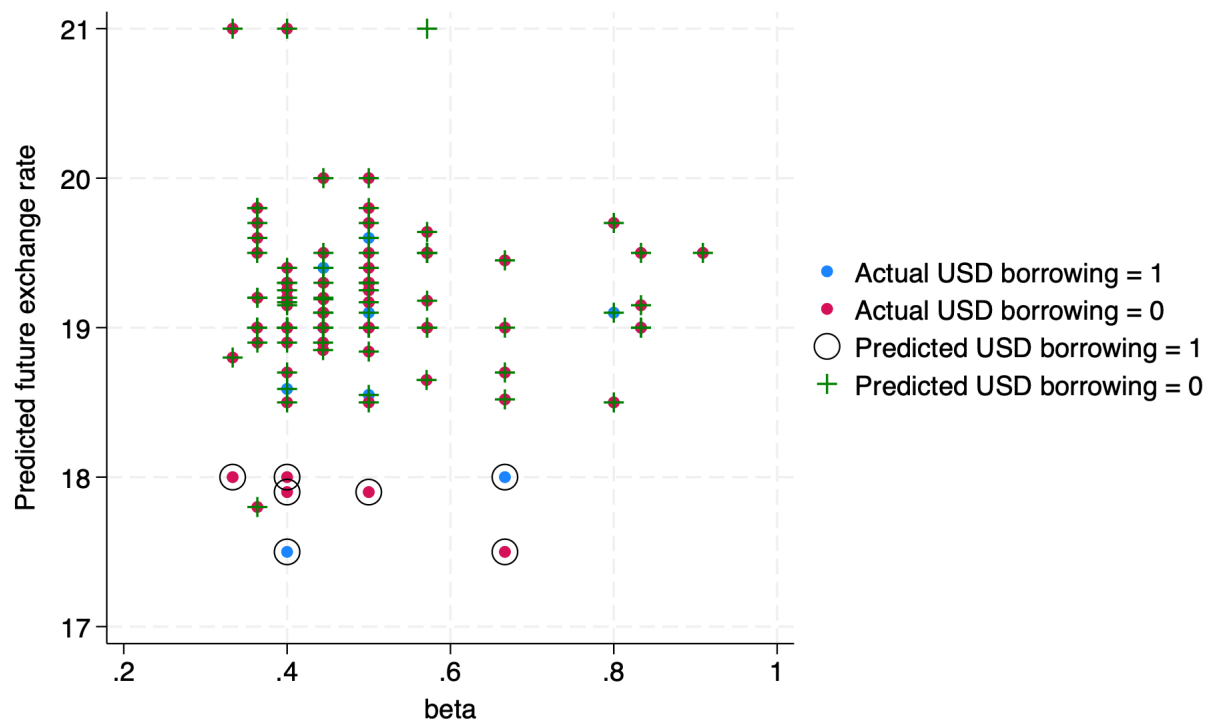
Figure 58: Actual and predicted USD borrowing decisions by predicted exchange rate and time discount rate, $R_{USD} > R_{MX}$

14.2 Dollar consumption model

Figure 59: Actual and predicted USD borrowing decisions by income in USD, $R_{USD} = R_{MX}$

Figure 60: Actual and predicted USD borrowing decisions by income in USD, $R_{USD} > R_{MX}$

Figure 61: Actual and predicted USD borrowing decisions by predicted exchange rate, $R_{USD} = R_{MX}$

Figure 62: Actual and predicted USD borrowing decisions by predicted exchange rate, $R_{USD} > R_{MX}$

Figure 63: Actual and predicted USD borrowing decisions by relative risk aversion, $R_{USD} = R_{MX}$

Figure 64: Actual and predicted USD borrowing decisions by relative risk aversion, $R_{USD} > R_{MX}$

Figure 65: Actual and predicted USD borrowing decisions by time discount rate, $R_{USD} = R_{MX}$

Figure 66: Actual and predicted USD borrowing decisions by time discount rate, $R_{USD} > R_{MX}$

Figure 67: Actual and predicted USD borrowing decisions by predicted exchange rate and relative risk aversion, $R_{USD} = R_{MX}$
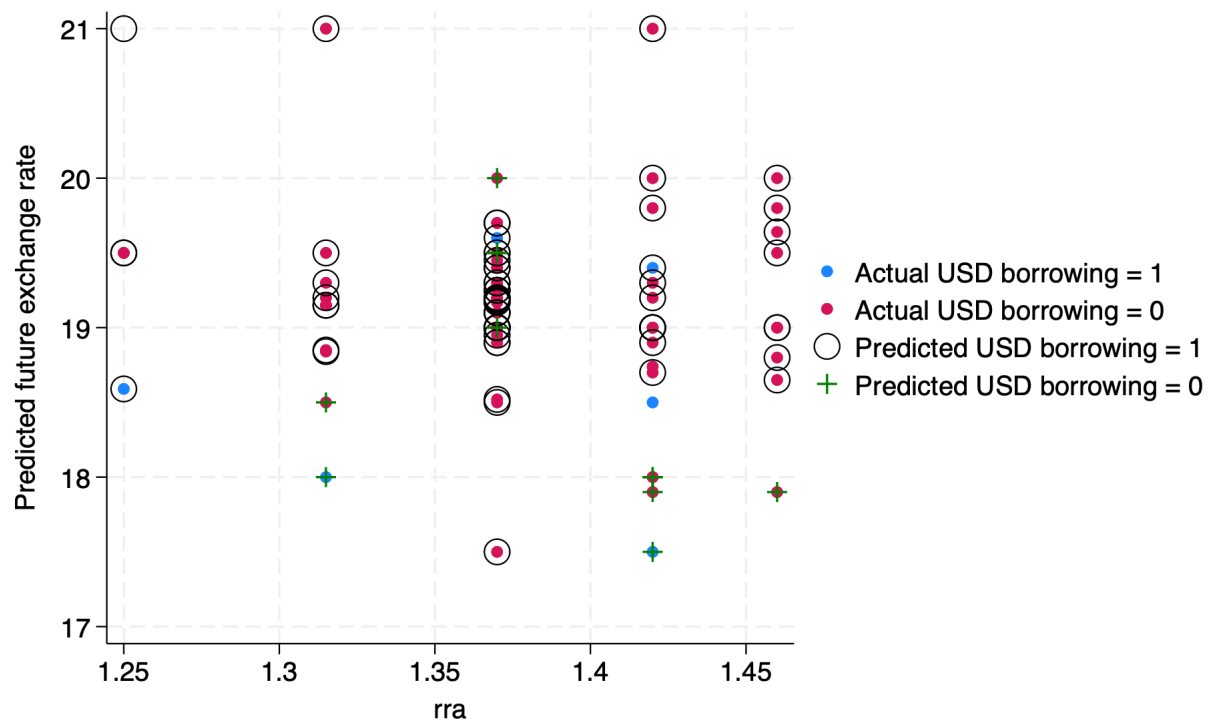

Figure 68: Actual and predicted USD borrowing decisions by predicted exchange rate and relative risk aversion, $R_{USD} > R_{MX}$
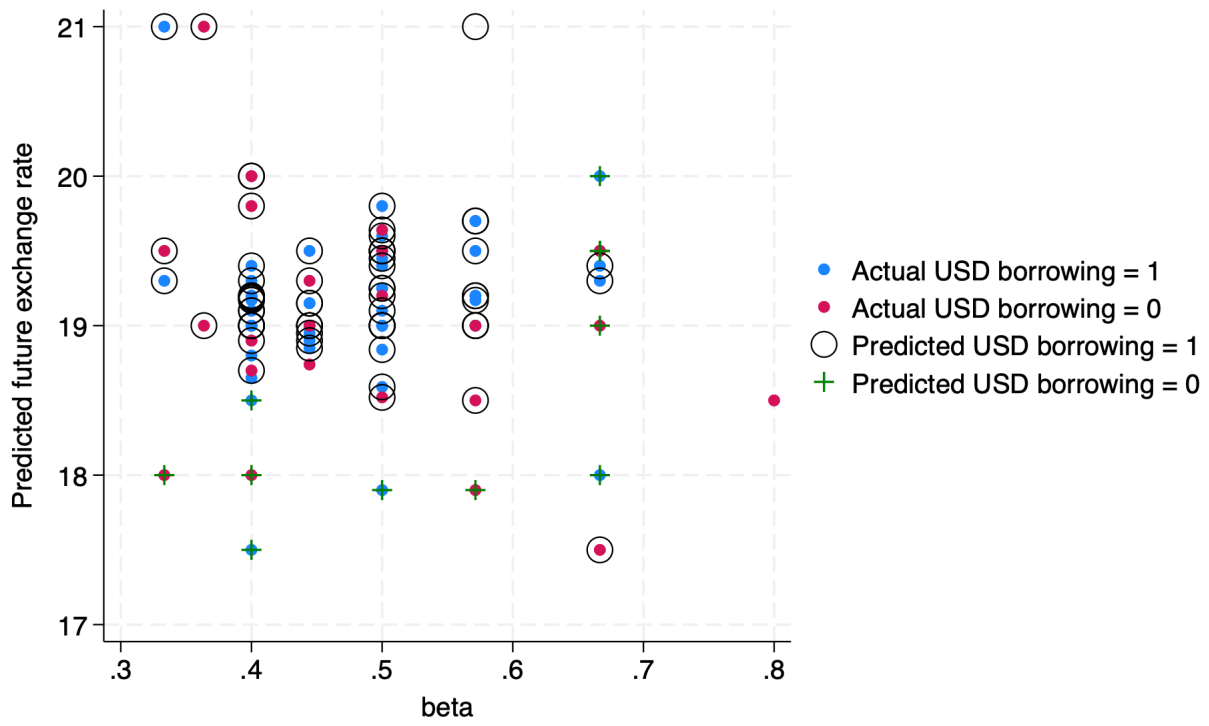
Figure 69: Actual and predicted USD borrowing decisions by predicted exchange rate and time discount rate, $R_{USD} = R_{MX}$
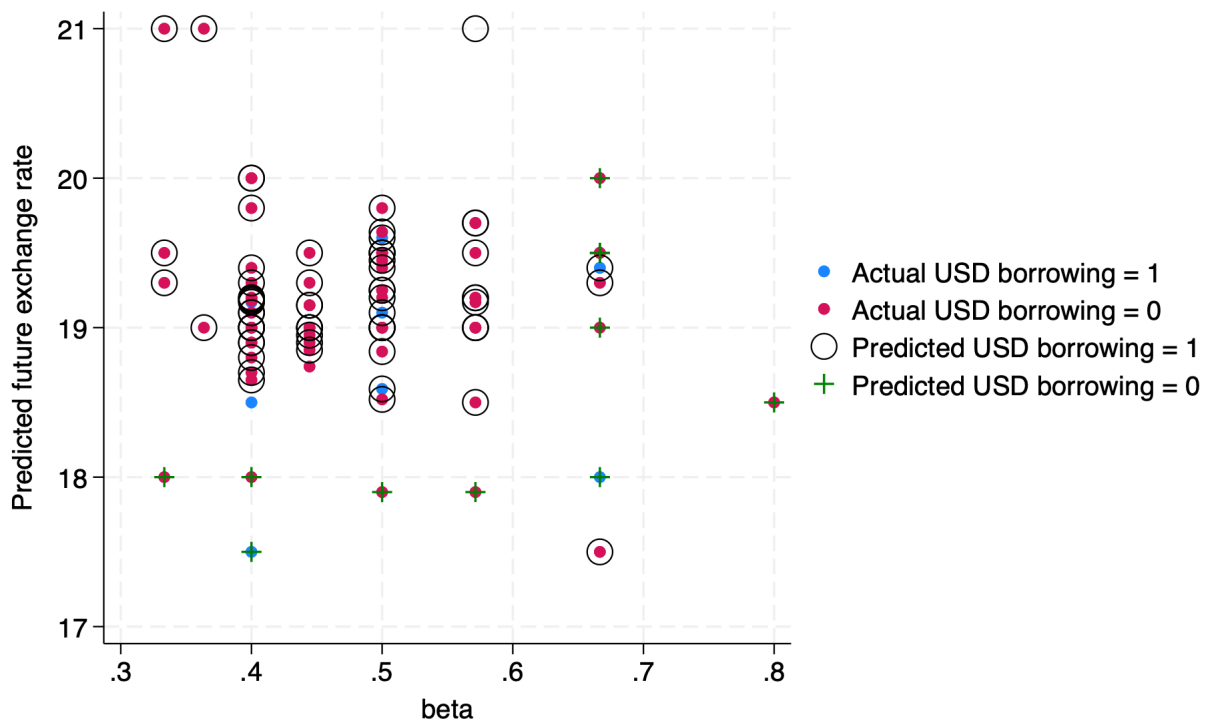

Figure 70: Actual and predicted USD borrowing decisions by predicted exchange rate and time discount rate, $R_{USD} > R_{MX}$