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Empirical Study on the Promotion of Home Currency in Cambodia

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Currency Choice in Domestic Transactions by Cambodian Households: The Importance of Transaction Size and Network Externalities

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Abstract

Beyond dollarization in financial systems and business transactions, foreign currency is widely used in domestic transactions by households in several dollarized economies. Based on data from a nationally representative household survey in Cambodia, we examined the key factors that affect household preferences in relation to currency choice in those transactions where they accept money when selling some assets. We found that size of transaction is negatively correlated to household choice of local currency. In addition, we found that having a bank account mitigates the negative effect of size of transaction on local currency choice, suggesting that availability of financial services could reduce the transaction costs for households when accepting local currency. We also found that our measures of the extent of the network externalities of foreign currency are significantly correlated to household choice of foreign currency. Our findings suggest that improvement in the usability of local currency gained by reducing the transaction costs of local currency relative to foreign currency, particularly for large transactions, can have a positive impact on household use of the local currency in domestic transactions.

Keywords: Dollarization, currency preference, transaction cost, household survey data

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1. Introduction

The circulation of foreign exchange currency (FX currency) as medium of exchange, store of value, or unit of account in a domestic economy is well known phenomenon under fragile macroeconomic conditions. It has widely been observed in Latin America, parts of Asia, Eastern Europe, and more recently in sub Saharan Africa.[1] Even after attainment of economic recovery with disinflation and stable exchange rates, de-dollarization sometimes does not occur. Widespread foreign currency usage in transactions in the real sector[2] is regarded as one of the key factors for this hysteresis.

In Cambodia, significant dollarization started when the US dollar (USD) surged into the economy in the early 1990s. It started to take on the two major functions of a currency; acting as both a store of value and means of payment because of the limited local currency in circulation in the economy. Since then, dollarization in Cambodia has evolved in terms of both asset substitution and currency substitution. Dollarization complements the functions of a local currency to some extent; however, de-dollarization is needed to restore effective monetary tools for domestic monetary conditions as well as to minimize liquidity risk and protect the limited lenders of last resort (Duma, 2014). The government of Cambodia has set the promotion of usage of its local currency (Khmer Riel, KHR) and eventual de-dollarization as its long-term objective.[3] However, it is yet to prepare concrete policy measures, except the recently announced regulation on the provision of credit in local currency by financial institutions. Sparse concrete policy measures are partly due to a lack of analyses of FX currency use in the real sector.

[1] According to Mecagni et al.(2015), the use of foreign currencies to pay a large share of the purchase of goods and services and wages is observed in the Democratic Republic of the Congo, Angola, and in Zimbabwe. Dollarization has been more persistent in sub-Saharan Africa than in other areas. There have been few successful cases, such as Angola, of de-dollarization in the area.

[2] To distinguish this with dollarization in financial sector (deposit/loan), we call the use of foreign currencies for purchase of goods/services or wages real sector dollarization as defined by Mecagni et al. (2015).

[3] See Government of Cambodia (2016).

This paper investigates the key factors that affect household decisions to accept foreign currency in domestic transactions, using the example of Cambodia. We use unique household survey data collected by a nation-wide large-scale survey covering 2273 households. These data allow us to use the currency-wise information in assessing households' economic activities. To the best of our knowledge, empirical studies done on analyses of the multicurrency usage for payments are limited in this country. To understand how a foreign currency comes to circulate in the domestic economy, we must understand the key factors that affect the decision to accept it. In this sense, monetary search models have special applicability to dollarized economies since they deal with the acceptance of the currency itself.

From our empirical analysis, we found that the average ratio of expenditure in FX currency and the proportion of FX earners at commune level as proxies of network externalities of FX currency are significantly correlated to the preference for FX currency. However, expectation of exchange rate depreciation, which influences purchasing power loss, has limited influence on currency choice. These results are consistent with previous empirical work (Valev, 2010). In addition, we find that households try to match the currency for acceptance to that of expenditure. That is, households try to avoid the fluctuation of purchasing power. Moreover, we find that transaction size is significantly correlated with the preference for FX currency over local currency, while this effect is smaller for households with bank accounts, suggesting that increased financial services could reduce transaction costs. In a cash-based economy, the transaction cost is assumed to be an increasing function of the size of transaction. In the case that large values of banknotes are circulating as part of the FX currency and are scarce for the local currency, people are generally less likely to prefer local currency for large size transactions, due to the need for large amounts of banknotes compared to that of the FX currency.

The contributions of this article are twofold: First, we examine the factors which drive Cambodian households to choose FX currency instead of local currency for domestic transactions. Due to data limitations, there is a scarcity of empirical studies on Cambodian

households describing how they choose the currency in their daily-life transactions, and investigations of the determinants of preference of currency for domestic transactions. The findings are particularly important for policy makers for the promotion of the use of the local currency in domestic transactions. Our results suggest that measures to increase the usability of the local currency is important when trying to influence currency preferences. The findings in this paper could provide insights for other dollarized economies.

Second, we can contribute to the vast literature on currency acceptance for transactions. As far as we know, there are two important works: Colacelli and Blackburn (2009) and Valev (2010). Those studies mainly focused on the effect of network externalities on people's currency preference. Colacelli and Blackburn (2009) showed that scarcity of a national currency affects the circulation of a secondary currency. Valev (2010) showed that network externalities as well as the demographics of residents affect the circulation of foreign currency. In addition to these determinants, we found that transaction size affects the household preference for FX currency, because transaction costs are large for large transactions in local currency. To promote the usage of local currency relative to FX currency, it is important to increase the usability of large amount transactions of local currency.

Based on our findings, we can draw the following policy implications. FX currency usage in transactions reflects the inadequacy of the domestic payment system in the local currency. In particular, as the country is still a cash-based economy, policy measures should aim at the reduction of transaction costs in local currency cash, particularly for larger transactions. Such measures may include the further introduction of larger value KHR banknotes with modernized printing technology that controls counterfeit risk. To do so, it may also be worth considering a change in the denomination of currency units or financial inclusion to promote banking services in the local currency. Moreover, it is also worth considering starting the promotion of digitized payments with preferential treatment in KHR relative to that in FX currency. Lastly, as the network effect is one of the key determinant for the preference of FX in

transactions, regulations to encourage pricing in KHR should be pursued further. Such policy measures may include; price tags in KHR only, requirement of accounting/financial statements in KHR, and the paying of wages/salaries in KHR.

The rest of our paper is structured as follows: Section 2 reviews the theoretical frameworks as well as empirical studies for acceptance of currencies in transactions, then, lists hypotheses to be tested in the context of Cambodia. It also briefly explains the background of dollarization in the country. Section 3 explains the data we employed in the analysis. In Section 4, we provide a detailed picture of unique multi-currency usage for payment in the country. It also gives a descriptive analysis of the preference for local/FX currency for transactions for a better understanding of environment we analyze empirically in the next section. In Section 5, we provide an empirical analysis of key determinants of currency preference in transactions. Chapter 6 concludes the paper with some policy implication drawn from the analysis.

2. Related Literature, Hypotheses for Analysis, and the Background of FX Preferences in Cambodia

2.1 Related Literature

To understand how a foreign currency comes to circulate in the domestic economy in a transaction, it is necessary to understand the key factors that affect the decision to accept foreign currency in exchange for goods and services. Theoretical search models are suitable frameworks for the purpose because they explicitly model economic agents' decisions to accept a fiat currency in transactions. The search models show that transaction frictions make the intrinsically useless object acceptable as means of payment. The friction is the absence of the double coincidence of wants.

Among many others, Kiyotaki and Wright (1989) were one of the starting points for discussion of the handling acceptance of such media for transactions as well as a pure fiat money in an economy. The same authors extended their model into a one-country two-currency money

model (Kiyotaki and Wright, 1993). Fiat money is modeled such that it generates some basic cost. The authors showed that in the coexistence of two fiat currencies that have different levels of holding cost if the cost for one currency is sufficiently small and the cost of the other is large, then the agent will use that currency, not the other, for transactions.

The search models were extended in several ways with respect to the cost of a fiat currency. One is purchasing power risk. FX is assumed to be stable in its value while local currency is exposed to the risk of devaluation. An increase in the risks of local currency leads to greater acceptance of FX (i.e., Engineer (2000); Tandon and Wang (2003); Craig and Waller (2004)). However, other models (Camera et al. (2004)) suggest other possibilities. In their model buyers prefer to dispose of riskier currency while sellers are reluctant to accept such riskier currency in transactions. They showed the existence of two equilibriums. One is that agents holding diversified currency portfolios spend the safe FX first and hold the risky local currency. The use of FX can thus dominate, and local currency may stop being circulated. The other is the reverse pattern where the use of local currency can dominate. In all, these models suggest that agents generally accept the safe FX if the local currency risks are high.

Another extension is the concept of cost at the time of its use in transactions. Given the level of purchasing power risk, the transaction cost of local currency relative to FX currency affects its use. One of the major transaction costs is the risk of accepting counterfeit notes. People are better able to recognize and handle the local currency while the FX currency is more likely to be counterfeit and a cost is incurred with verification (Engineer, 2000). The author modeled the cost as an increasing function of the size of transaction, as it was implicitly assumed that transactions would take place in banknote cash. Another type of transaction cost of a currency is its usability. Sometimes the usability of local currency is inferior to that of FX. Payment systems in local currency are inadequate - these rely on banknote cash for transactions.

Lastly, the concept of network effect was incorporated in the search theoretic models, by amongst others Dowd and Greenaway (1993) and Uribe (1997). Dowd and Greenaway (1993)

treated the effect as a network-related benefit as the utility rises with the number of other agents using the same currency. Uribe (1997) modeled that transaction cost depends on an economy's accumulated experience in using FX currency as a means of payment. The transaction cost decreases as the level of dollarization in the economy increases because economies accumulate experience of using it. The accumulation of experience, then, develops into the hysteresis.

So far, we have focused on the mechanism of acceptance of money in transactions. However, when households make a decision whether to accept a currency or not, they also consider the ability of the currency to serve as a legitimate store of value. In the literature on dollarization, the portfolio view of Ize and Levy-Yetagi (2003) suggested that economic agents choose an optimal level of FX and local currency assets given the risk and return profiles on assets. The exchange rate depreciation as well as volatility, inflation rate, and interest differentials between FX and local currency savings - all these may affect the acceptance of currency as a store of value.

The empirical work on currency acceptance for transactions is quite sparse. This is mainly because of the lack of micro data on multiple currency circulation. Due to the limitations of micro data in multiple currency circulation,[4] to the best of our knowledge there have been a very few empirical papers (see Colacelli and Blackburn (2009) and Valev (2010).

Colacelli and Blackburn (2009) examined the circulation of privately issued means of payment using individual level surveys undertaken in Argentina in 2002-03. They showed the acceptance of private currency increases if the supply of a national fiat currency is low, the transaction cost of the private currency is low, and individual trading technologies to find any matching are less effective. The authors used data on locally issued private means of payment, "credito," issued by a local exchange club when there was a severe shortage of domestic currency. People resorted to barter at that time (Cato 2006). Their results have limited

[4] To remedy the lack of micro-level data, several papers seek alternative measures; an experimental approach, instead of empirical one; i.e., Jian & Zhang (2018).

application to an environment where people use FX currency in addition to their own locally circulating fiat currency. Moreover, the authors used individual decisions to participate in a local club as the proxy for the acceptability of a credito. Once an individual has joined a club, he/she is treated as having accepted the credito for transaction. Their proxy has potential defect of overestimating the acceptability of credito because it may include non- active club members.

In the case of Valev (2010), we followed his framework for our analysis. The author used data on Bulgaria from 2003, in which residents were free to use FX currencies to open bank accounts and to settle transactions. Conversion costs between FX and local currency were low. All these elements are in Cambodia as well. As per motivation, he tested the origin of the hysteresis of FX usage. He tested currency preference in four types of transactions: real estate sales, vehicle sales, rent, and salaries. In all types of transactions three factors, i.e., network externality, age and gender showed significant influence on preferences. In addition, the author found that the expected devaluation of local currency did not play a major role in the preference for FX. Not only did we confirm his results but we also tried to draw out the practical implications needed to design policy measures. Our unique data captures not only the type of transactions but also the transaction size that affect the usability of currency.

2.2 Hypothesis for analysis

The monetary search models suggest that acceptance of a local currency depends on several usability costs relative to FX. Transaction cost, that is, cost needed to execute transactions, risk of purchasing power loss arising from depreciation and inflation, network externalities - all these factors affect preferences for local currency. Moreover, as legitimacy in terms of store of value, the interest differential between savings in FX and local currency may affect the preference of currency as per the portfolio view.

2.2.1 Transaction cost

If transaction size becomes larger, households are less likely to prefer KHR for transactions because of the higher transaction costs. As for the costs needed for execution, this may depend on several factors. There are many, but major ones are; size of transaction, risk of accepting counterfeit notes, currency conversion cost, or access to alternative efficient measure to alleviate the costs. As cash transactions are popular in Cambodia at large, transaction size affects the transaction cost. The largest local currency banknote is only the equivalent of 25 USD. The larger the size of transaction, the bulkier will be the volume of KHR notes. It is inconvenient and cumbersome to fulfil the large amount transaction in KHR due to this large physical volume of notes. We would conjecture that KHR is likely to be less accepted if transaction sizes get larger (Hypothesis 1).

Access to financial services may alleviate transaction cost associated with use of banknote cash (Hypothesis 2). If a household has a bank account, the transaction size would not be a significant factor for the preference. If a household has a bank account in KHR, the household is more likely to accept KHR, if it has USD bank account, the household is more likely to accept USD. Transactions via bank accounts can avoid the inconvenience associated with large physical volume of notes in cash. We may conjecture that the effect of transaction size on currency preference would be insignificant if a household has access to financial services in either currency.

As for the risk of counterfeit notes, it is one of the major transaction costs associated with FX currency notes.[5] Circulation of counterfeit FX may not vary significantly within a small country like Cambodia. For KHR banknotes, the risk can be quite marginal because of its low value and limited circulation (domestic only). We assume the risk of accepting the counterfeit of

[5] https://www.khmertimeskh.com/50552126/two-women-on-trial-for-circulating-fake-us-banknotes/.

local currency relative to FX would be constant in the country.[6] As for the conversion cost of the local currency, this is almost negligible[7] in Cambodia.

2.2.2 Purchasing power risk

If a household expects depreciation of the local currency, it less likely to prefer KHR for transactions. Regarding the risk of purchasing power loss, there are two factors: inflation[8] and depreciation. For decades the country did not experience hyper-inflation and the price level has been kept stable (low) for long periods (see section 0). Moreover, day-to-day movement of the general price level cannot be captured by households. Thus, inflation itself may have limited influence on people's recognition of the purchasing power risk of currency. However, as for exchange rate movement, people are familiar with its movement because the rate is readily available everywhere.[9] As the exchange rate was also kept stable for long periods, people's perception about past depreciation would be limited even though they know that exchange rates fluctuate daily. We focus on people's perception of fluctuations in the exchange rate. Even if the exchange rate is not in a depreciation trend, still there is a risk of volatility of purchasing power as long as the currency of acceptance differs from that of spending. To avoid fluctuations in purchasing power, it is rational to match the currency of acceptance with that of spending. Therefore, we may conjecture that if a household has a higher ratio of FX currency expenditure to total expenditure, it is less likely to accept local currency in transactions (Hypothesis 3).

[6] Circulation of counterfeit FX notes may vary by province within the country. Since there is no direct measurement for the circulation, we proxy it by commune dummy and control it at the time of empirical analysis.

[7] As regards for conversion cost, in Cambodia the spread of exchange between FX and the local currency is quite marginal. For example, exchange rate as of December 31, 2014 was: bid KHR 4064 and ask KHR 4073. (from NBC web site https://www.nbc.org.kh/download_files/publication/eco_mon_sta_eng/MonetaryStatisticsDecember2014_254_ENG.pdf; accessed on Dec 3, 2018) the margin was only 0.2 percent. Therefore, even if it entails money exchange operation, the conversion cost is not a significant factor.

[8] It may assume that exchange rate and price level may differ by province. We controlled using a commune dummy at the time of the empirical analysis.

[9] According to the National Bank of Cambodia, there are 74 licensed moneychangers, 2634 registered ones, and uncountable unlicensed ones on the street. They offer exchange rates almost every day.

However, it is not prudent to disregard the depreciation risk. Even in a stable environment some people may consider the risk of depreciation. If a household expects depreciation in the local currency, it less likely to prefer KHR for transactions (Hypothesis 4).

2.2.3 Network externality

The other factor affecting the preference of FX currency is network externality. As Selgin (2003) argued, there are two reasons for this. First, the more the currency is used, the more is price quoted in that currency. It serves as unit of account in the economy. The other is, the more persons who use a certain currency, the better is its quality or performance as a means of payment. To capture how widely FX currency is used in an area for our analysis, two types of proxy were available for the purpose: average ratio of expenditure in FX at commune[10] level, and the proportion of FX earners at the commune level. We would conjecture that the higher the respective ratio is, the less likely would a household accept local currency (Hypothesis 5).

Lastly, under the portfolio view, bank interest rate differentials between local currency and FX currency would affect currency preference as a store of value. However, as bank account holdings are not common and the financial market is still underdeveloped, the interest differential would have limited influence on the preference for currency. Moreover, interest rates for savings at a financial institution is the same within the country. In sum, we tested the following hypotheses:

Hypothesis 1: If the transaction amount becomes larger, households are less likely to accept KHR for transactions.

[10] There are four administrative division levels in Cambodia: the province, district, commune, and village levels. Communes are the third-level administrative division and consist of several villages, the minimum administrative unit.

Hypothesis 2: If household has a bank account in KHR, it is more likely to accept KHR. In it has a bank account in USD, it is less likely to accept KHR. The effects of transaction size on currency preference will be insignificant if a household has access to financial services in either currency.

Hypothesis 3: If household has higher ratio of FX currency expenditure to total expenditure, it is less likely to accept local currency in transactions.

Hypothesis 4: If a household expects depreciation of the local currency, it less likely to prefer KHR for transactions.

Hypothesis 5: The higher are the network externalities, the less likely is it that households will accept local currency in transactions.

2.3 Background

2.3.1 Brief History

Cambodia became de facto a dollarized economy during 1991–95 (De Zamaroczy and Sa, 2002), and it is still as dollarized, if not more so, than it was 10 years ago. The share of USD deposits in total deposits has been between 92 percent and 98 percent during the past two decades. By December 2014, USD deposits reached almost US$8.6 billion, more than half the size of the economy (World Bank, 2015).

The country abolished its own currency when under the Khmer Rouge regime in 1976. A local currency was reintroduced after five years of disappearance, but thereafter the country achieved very limited monetization under a mismanaged economy. Most domestic transactions were based on barter, with gold being the universal means of transacting and hoarding (De Zamaroczy and Sa, 2002). When significant dollarization had started with a surge of dollar in

1991 during the UNTAC operations, there was virtually nothing that could perform the function of money or widely accepted by the public. At the end of 1991, according to IMF Economic Reviews 1994 Cambodia, the volume of narrow money (local currency in circulation plus demand deposit in local currency) was 77.6 billion riels. It was only 5.9 percent of nominal GDP. Moreover, the volume of foreign currency was also limited. At the end of 1991, foreign currency deposits were only 0.7 billion riels equivalent, or 0.005 percent of GDP (IMF 1994).

During 1991–92, the UNTAC operation brought US$1.7 billion to the country, equivalent to about 75 percent of GDP at that time, mostly spent for rent and local services for its peacekeeping operation (De Zamaroczy and Sa, 2002). Given the fact that the volume of local currency was less than one-tenth of an in-flowing dollar, USD became to bear all the functions of a local currency. USD was widely accepted by the public, dominating the local currency in terms of volume. Since then, the level of dollarization, measured by foreign currency deposit over M2, has been continuing to increase from 56 percent in 1995 to 82 percent in 2013 (Figure 1).

Figure 1: Trend of dollarization

2.3.2 Stable exchange rate and low inflation

The previous literature suggests that past exchange rate devaluation or high inflation are one of the key drivers of currency substitution. The Cambodian economy maintained low inflation and exchange rate was kept stable for about two decades, but its dollarization continued to develop. The exchange rate has been maintained at around 4000 riels per USD since 1998 (Panel A, Figure 2). Under such a long stable exchange rate environment, people consider KHR as if it were pegged to the USD. The influence of past exchange rates may thus have a limited role in determining the preference for FX currency in local transactions. As for price stability, the country also kept prices very stable with an average inflation rate measured by CPI of 5.2

percent between 1995 and 2013 (see Panel B, Figure 2). Given the stable price level for about two decades, past inflation has a limited influence on currency preference.

Therefore, it may not possible to explain the wide usage of FX currency in transactions from these factors. Rather, other reasons such as network externalities or the relative transaction cost of currencies may affect the preference for FX currency in transactions.

Figure 2: Trends of exchange rate and inflation

3. Data

The data used in this paper was collected by survey in a joint project carried out by JICA Research Institute (JICA-RI) and the National Bank of Cambodia (NBC) from October 2014 to January 2015. In the survey, 2,273 households from all 25 provinces were sampled in a random manner using professional enumerators from a local research marketing company. Questions in the survey covered several economic and financial activities, such as income, expenditure, savings and borrowings, and breakdowns of those items by currency, as of the end of September 2014. Moreover, it captured several attributes of households, such as education levels, ages of household head, and perceptions about future exchange rates. To simplify the data collection process and to avoid sampling biases, it employed stratified sampling at the provincial level according to the actual regional population from the General Population Census of 2008 (National Institute of Statistics, Ministry of Planning, Government of Cambodia - covering 2,841,897 households).

To identify any bias in the survey data, we compare some key figures with that found in the Cambodia Socio Economic Survey 2014 (CSES, 2014), a larger sample nationwide survey conducted by the National Institute of Statistics. As for household size, on average, CSES 2014 showed 4.7 persons per household, while our survey found 4.9 persons per household. As for

consumption level of households, on average, CSES 2014 showed 1,529 thousand riels (382.3 dollars) per month, while our survey found 369.1 dollar of equivalent consumption. In these respects, the NBC data is not so biased compared to that of CSES 2014. However, in terms of the distribution of the number of households by residence (urban/rural[11]), our survey data is biased towards urban samples. CSES 2014 showed 21.3% as the percentage of urban household numbers to total household numbers, while that of our survey showed 53.1%. This may be the result of our survey approach. Due to time and budget limitations households with bad physical access were dropped from the sampling visits by enumerators. This may have resulted in more sampling from urban areas.

4. Analysis 1: Descriptive Analysis

4.1 Wide FX currency usage for payment

It is anecdotally said that in Cambodia FX currencies are widely used for several payments, but this is not well confirmed by the data. The survey asked households for the ratios of FX currency usage in actual expenditure in 14 categories of spending. The results of the survey showed that in general, foreign currencies were used but depending on item, their degree of usage differs significantly (Table 1). For smaller valued items such as food and beverage, alcohol and tobacco, water and electricity bill, or for health including toiletries, the respondents used mainly KHR. However, for relatively higher valued items, such as house rent, communication, and furniture and appliances, they used FX more for transactions. From this pattern of currency usage, we can see that transaction size matters in the currency chosen for transactions.

[11] The government defines commune so as to treat it as urban: (a) Population density exceeding 200 per km², (b) percentage of male employment in agriculture below 50 per cent, and (c) total population of the commune should exceed 2,000.

Table 1: Ratios of FX expenditure to total expenditure by item (%)

Table 2: Ratios of FX expenditure to total expenditure by commune category (%)

Table 2 shows the difference of FX use by area category (urban/rural). The government of Cambodia categorizes its communes into Urban or Rural based on level economic activities,[12] In urban area, it had higher ratios of FX in expenditures. The network externalities may differ by area category reflecting different characteristics of economic activities and conditions. The difference may also affect the level of individual trading technology as discussed in Colacelli and Blackburn (2009).

By income level, there is a difference in degree of FX use. The higher the level of income, the more FX is used for expenditure. This may be interpreted as being that households with high income would have more use of larger transactions, such as purchase of durables or real estate in their expenditure baskets. It is noted that households with higher incomes may have larger share of their income in FX or have greater access to banking services. Such factors might affect the ratios of FX use in expenditure.

Table 3: Ratios of FX expenditure to total expenditure by income level (%)

4.2 Preference of FX currency in transactions

The survey asked about the household's currency preference in virtual transactions. The respondents were asked to state the currency they would like to accept as well as its estimated

[12] Ministry of planning, the government of Cambodia, defines a commune as urban as follows; (a) population density exceeding 200 per km², (b) percentage of male employment in agriculture below 50 per cent, (c) total population of the commune should exceed 2,000.

value assuming they would sell their currently owned assets at the time of survey. For example, if a respondent has a car, the respondent gave its self-estimated current market value and a currency that he/she would like to receive. If the respondent did not own livestock, there was no answer for this question. We followed Fidrmuc et. al. (2013) in thinking that stated preference may have advantage over realized actual choice to detangle the determinants of the currency preference of sellers from those of buyers. The realized choice is the outcome after negotiation with a counter party during transaction. If the bargaining power of a buyer is higher than that of a seller, buyer's preference would dominate in the realized choice. Thus, the realized choice may not necessarily be the seller's one. The stated choice question was intended to identify the respondent's own preference of currency choice as seller, minimizing any influence from the buyer. The survey covered six types of assets: real estate, furniture and appliances, motorcycles and car, machinery and equipment for business and personal use, livestock, and inventories for small business/farming. If the respondent had any of those assets, they replied with a currency that they would like to accept in exchange for their assets and value. If not, the questions on sales of that asset was not applicable to that respondent.

Table 4: Currency preferred to accept in sales of assets

Table 4 shows currency preference by type of assets. 86.1% of respondents preferred to accept FX currencies or gold in sales of real estate. For motorcycles and cars, 85.1% of respondents preferred FXs. 52.7% of respondents preferred USD for sales of machinery and equipment and 38.1 percent preferred FXs for sales of furniture and appliances. For livestock, 16.0% preferred FXs; and for sales of inventories for business/farming, 20.5% preferred FXs. In general, the transaction size of real estate or motorcycles and cars gets relatively larger, but that of livestock or the inventory for small business and farming tends to be smaller. From these facts,

currency choice might be affected by business practices in a market as well as size transaction. It is noted that these preferences may also be affected by network externalities in the area.

Table 5: Prefer to accept KHR for sales of assets by commune category (frequency and % to area total)

Table 5 gives the frequency and ratios of KHR preference by commune category. The government of Cambodia classifies communes based on level of economic activities. We clearly see a difference in the level of preference for KHR in transactions. People in rural communes prefer more KHR than those in urban ones. By definition, urban communes have diversified economic activities and better infrastructure to sustain dwellers as well as those economic activities. Network externalities of FX use may also differ by the commune category. However, it has similar tendency to currency preference: for real estate and motorcycles and car transactions people prefer to accept FX currency, while for livestock and inventories for business/ farming they prefer the local currency. This tendency is observable both for urban and rural residents. Determinants other than network externalities of communes may potentially affect the currency choice for transaction.

Table 6: Prefer to accept KHR for sales of assets by income level (frequency and % to level total)

Table 6 gives the frequency and ratios of KHR preference by income level in quintiles. We found a clear positive relationship between level of income and preference for FX for transaction. The richer households prefer less KHR for transactions. KHR is preferred more by the poor regardless of type of asset. We may consider that the rich have larger sized transactions compared to that of the poor. Or other demographics related to the level of income may affect the currency choice.

Table 7: Prefer to accept KHR for sales of assets by depreciation expectation (frequency and % to level total)

Table 7 shows the frequency and ratios of KHR preference by expectation of depreciation. In general, those who had expectations of depreciation had a lower ratio of local currency preference for transaction. However, in case of the inventories for business/farming, they showed ratios that were the other way around. The influence of exchange rate may have a mixed impact on currency choice.

5. Analysis 2: Regression analysis on preference of currency in asset transactions

5.1 Empirical Models

We investigated the determinants of household preferences on the currency preferred to accept money in selling assets. We employed a linear probability model with a dependent variable of dummy variable equal to 1 if a respondent preferred KHR, and zero otherwise. This is because the interpretation of the estimated coefficient is easier in a linear probability model, and the estimated coefficients of this model imply the marginal effects. In fact, in the regression of a binary variable, some studies employ non-linear models, such as the Probit and logit models. However, in this analysis, we are also interested in the marginal effects of interaction terms, and it is difficult to see these in non-linear models in terms of computational complexity. Even though the linear probability model has the drawback that prediction from estimated coefficients could imply probabilities outside a unit interval, statistical inference is reliable around the averages of the sample, and there is no other significant difference in the statistical inference between the non-linear model and the linear model.

We use stated preference on currency choice in selling assets as a dependent variable. In the survey, the respondents were asked hypothetical questions to reply preference on currency choice to accept in sales of assets they currently own: (A1) real estate, (A2) household furniture/appliances, (A3) motorcycle and car, (A4) machinery for business and personal use, (A5) livestock, and (A6) inventories for small business/farming. While currency choice in actual payment is affected by the choices of counter parties in a transaction, i.e. the buyer, Fidrmuc et al. (2013) suggest that, instead of using realized choices, using stated preference on currency choice allows us to disentangle the determinants of seller's choice from those of buyer's choice.

In the estimation, we ran a linear probability model of the following specification:

$$
\begin{aligned}
&KHR\_Receive_{ik} \\
&\quad = \alpha_k + \beta_{1k} Asset\_Amount_{ik} + \beta_{2k} Asset\_Amount_{ik} \cdot Bank\_Account_i \\
&\qquad + \gamma_k KHR\_Bank\_Account_i + \delta_k USD\_Bank\_Account_i \\
&\quad + \varepsilon_k Ratio\_of\_FX\_Expenditure_i + \psi_k Depreciation\_Expectation_i \\
&\qquad + \mu_k DK\_Depreciation_i + \lambda_k X_i + \eta_{ik} Commune\_Dummies_i + \epsilon_{ik}
\end{aligned}
\tag{1}
$$

where $KHR\_Receive_{ik}$ is a binary variable which takes one if the variable equals one, and zero if otherwise. $KHR\_Receive_{ik}$ is a dummy variable which takes the value of one if household i prefers to accept KHR in asset k, and zero if otherwise. As for explanatory variables, we include these variables to test our hypotheses as described in section 2. If Hypothesis 1 is considered, an increase in transaction size would negatively affect the use of KHR. To test this hypothesis, we used the logarithm of the value of asset k in USD equivalent ($Asset\_Amount_{ik}$, $k \in \{A1, A2, A3, A4, A5, A6\}$). We examined whether size of transaction, i.e. value of asset, matters for the currency choice.

Second, we examine whether possession of financial service account mitigates transaction cost in receiving money (Hypothesis 2). To do so, we include the interaction terms of amounts of assets with dummy for having bank accounts ($Asset\_Amount_{ik} \cdot Bank\_Account_i$). This dummy variable of $Bank\_Account_i$ takes the value 1 if any household respondent has a bank account either in USD or KHR, and zero otherwise. If the financial service account mitigates the transaction costs of payments, people will be indifferent to the amount of the transaction in currency choice, so that the coefficient of the interaction term would be estimated as positive. In addition, to further test whether having a bank account in a specific currency denomination has mitigating effects on transaction cost in a currency, we also include the dummy variables of possession of a USD bank account ($USD\_Bank\_Account_i$) and a KHR account ($KHR\_Bank\_Account_i$)

Thirdly, we examine the purchasing power hypothesis (Hypothesis 3). We employ the ratio of FX expenditure to total expenditure ($Ratio\_of\_FX\_Expenditure_i$), which represents the degree of FX use in expenditure. If the ratio is high, the household uses more FX for its expenditure in their daily lives. If households hedge risks of fluctuating purchasing power, they would choose the currency in which they usually use in their daily lives when they sell a goods and accept a currency in turn. Furthermore, we use $Deprecistion\_Expectation_i$; a dummy variable equal to 1 if a respondent answered more than 4100 KHR/USD to a question "How do you think the exchange rate of KHR/USD will change in the next 6 months?" If a household expects depreciation, it is expected that it will prefer FX for transactions (Hypothesis 4). Note that there is a limited number of respondents who gave their expectation of future exchange rate (449 respondents), while other respondents answered "Don't know" to this question. Thus, we also include a dummy for the respondents who answered "Don't know" about the future exchange rate ($DK\_Depreciation_i$). Furthermore, in the estimation, we control for other demographic variables (X_i), such as age, and income level. We also include commune level dummies to control for unobservable regional characteristics.

Next, we further examine the effect of network externalities on the preference of currency in sales.

$$
\begin{aligned}
KHR\_Receive_{ilk} \\
&= \alpha_k + \beta Asset\_Amount_{ilk} + \ \gamma_k KHR\_Bank\_Account_{il} \\
&\quad + \ \delta_k USD\_Bank\_Account_{il} \ + \varepsilon_k Ratio\_of\_FX\_Expenditure_{il} \\
&\quad + \ \psi_k Depreciation\_Expectation_{il} + \mu_k DK\_Depreciation_{il} + \ \lambda_k X_i \\
&\quad + \ \phi_k Network\_Externalities_{\iota} + \epsilon_{ilk}
\end{aligned}
\tag{2}
$$

Where subscription *i* represents household, *l* represents communes and *k* represents asset types. $Network\_Externalities_{\iota}$ is the proxy variable for the extent of network externalities in the region *l*. Colacelli and Blackman (2009) define households as peso earners if they earn more than 150 pesos (25% of average income per month in Argentina), and use the proportion of peso earners in a region as a proxy for network externalities (or scarcity of local currency). Following their study, we define households as FX earners if they earn USD300 in FX currency (about 25% of the average monthly income per household in Cambodia and employ the proportion of the FX earners in communes as the measure of network externalities. To capture network externalities, Valev (2010) used the perception of how often foreign currency is traded in the market near respondent' households. However, our data does not cover the measurement of perception of foreign currency usage by the respondents. To address this issue, we calculate the average of the ratio of FX expenditure to total income at the commune-level and use this as the measure of network externalities. We test the effect of network externalities using these two types of measures, respectively. Note that we exclude commune dummies from Equation 2, since the variable of network externalities varies at commune-level. We summarize our predictions for each coefficient and the corresponding hypotheses in Table 8.

Table 8: Determinants of currency choice and its expected sign

In the estimation of Equation 1 and 2, we apply clustered estimation of standard errors at commune-level, to control for potential residual correlation within regions. Further, to mitigate potential bias from outliers, we winsorize the sample at 1 percent of the distribution of amounts of assets for each asset type.

5.2 Results

Firstly, we present the results of our estimation of the baseline model in Table 9. From column (A1) to (A6) we present the estimated coefficient with dependent variables as the amount of each asset: (A1) real estate, (A2) furniture/appliances, (A3) motorcycle/car, (A4) machinery for business/personal use, (A5) livestock, and (A6) inventories for small business/farming. The definitions of variables used in the estimation are presented in Appendix Table 1, and the descriptive statistics and the correlation matrix are reported in Appendix Table 2 and Appendix Table 3, respectively.

We found that the amount of assets households are holding is negatively and significantly associated with the probability of choosing KHR in transactions, and we find the statistical significance of this variable at 1percent in all types of assets (column A1- A6). This result supports our hypothesis that households are less likely to choose KHR if the transaction size becomes larger (H1). It is noteworthy that size of marginal effects varies across types of assets. Real estate (A1), shows the lowest impact on choice of currency, while for furniture/appliances (A2) and machinery for business and personal use (A4) there is a greater impact. This result can be interpreted as the elasticity of transaction sizes to the choice of

currency varying across types of assets, and the elasticity of transaction size is lowest in sales of real estate.

Table 9: Effects of transaction sizes on currency choice

Second, we found that the dummy variable of having USD bank accounts is significant and negative in A1, A2, A3, and A4, although the dummy for KHR bank accounts is only significant and positive in A2. These results suggest that if households have a USD bank account, they are more likely to choose USD in selling real estate, livestock, and inventories for small business/farming. Since transactions through a bank account are supposed to reduce the transaction cost of currency, then having bank accounts makes it more convenient to sell assets in USD if they have USD bank account. This is consistent with H2-1. In the meantime, having a KHR bank account does not seem to have significant effects on the choice of currency except A2. It seems that the reduction of transaction costs in local currency through formal conventional financial services does not facilitate the promotion of local currency. However, given the low financial inclusion level in Cambodia, this result might reflect the fact that Cambodian households do not actively use bank accounts for such transactions. Furthermore, transactions in the real estate market are made mostly in USD. This result might reflect usual business practice regarding the choice of currency.

Third, we found that the ratio of FX expenditure to total expenditure is negatively and significantly associated with the probability of receiving KHR for all types of assets. Moreover, the size of the impact of change in this variable on currency choice are similar across all types of asset. This result supports the hypothesis that households are less likely to choose KHR if the ratio of FX in expenditure becomes large (H3). Thus, Cambodian households are likely to accept the currency which is usually used in their expenditures, suggesting that they choose currency in selling to hedge the risk of potential fluctuations in the exchange rate. We also found that the

expectation of depreciation in the local currency is insignificant for all types of asset. This suggests that households do not choose a currency even though they expect it to appreciate in the future. This result is not consistent with H4. In sum, Cambodian households are more likely to choose currency for hedging purposes than for maximizing returns, and this finding is consistent with that of Aiba et al. (2018), who investigated the currency choice in borrowing by Cambodian households.

Next, we estimated Equation 1, in which we added an interaction term of having bank accounts with amounts of asset. We present the results in Table 10. First, we found that the interaction terms of having bank accounts with amounts of asset are significant and negative in A1, A3, and A4. Importantly, the estimated coefficients of the interaction term are large enough to offset the effect of the amount of an asset itself. This suggests that if households do not have any type of bank account, they choose currency depending on the amounts of assets they wish to sell, while if they have either type of bank account, the amount of assets does not affect the currency choice any more. These results are consistent to H2-2 for A1, A3, and A4.

Table 10: Effects of transaction sizes and possession of bank account

Next, we tested the existence of network externalities by using two different measures of this variable. We ran a regression with the specification of Equation 2. The results are presented in Tables 11 and 12. In each model, we excluded commune dummies. In Table 11, we used the proportion of FX earners in communes as a proxy for the network externalities of foreign currency. Here, we found that the estimated coefficients of this proxy were significant in A1, A2, and A3. The results suggest that if there are more FX earners in a commune, households are more likely to choose FX currency in selling assets, especially for real estate (A1), household furniture/appliances(A2), and motorcycles and cars (A3). Using another measure of the network externalities of foreign currency, we found that the average of the ratio of FX expenditures is

significantly negative in the estimation of all types of assets (Table 12). Note that this variable is significant, although it includes the ratio of FX expenditures itself at the same time. This suggests that if households use FX currency to buy goods in the communes, on average they are more likely to choose FX currency in selling assets for all asset types.

Table 11: Effects of network externalities (proportion of the FX earners)

Table 12: Effects of network externalities (average ratio of expenditure in FX)

Furthermore, to check the robustness of our results above, we pooled the observations of all types of assets, and ran regressions with dummies of each asset type. The sample size becomes 7997, and we estimated the model with a clustering method for the calculation of standard errors at commune levels. The results are presented in Table 13. We confirm the same results as for the main results in previous tables.

Table 13: Regression with pooling all of assets types as robustness checks

6. Conclusion and Policy Implications

Our paper addresses the preference for FX currency in the transactions in a dollarized economy. Using survey data, we analyzed the key factors that affect household decisions to prefer FX currency. This aspect of dollarization has not been analyzed before, particularly in the context of developing economies like in Cambodia, due to data limitations.

First, we found that the inadequacy of domestic currency as a means of payment affects preferences. Under the cash-based economy at large, people use banknote cash for payment because other forms of payment are not common. Thus, the transaction cost of cash payment is

one of the key factors. The larger the transaction size, the larger is the physical volume of banknotes needed, and so is the cost. For larger transactions, households were less likely to prefer local currency. This is consistent with the anecdotal observation that KHR is not practical for larger transactions because it is bulky to prepare large values with it.

Second, we found that the theoretically predicted purchasing power risk has a mixed impact on currency choice. Expectation of exchange rate depreciation affects the preference for some assets while for others it does not. After attaining macro-economic stability for decades, purchasing power risk may not be the reason for the currency preference though. However, to avoid fluctuation in purchasing power, households try to match the currency of acceptance to that of expenditure.

Third, we found the network externalities measured by average ratio of expenditure in FX at the commune level or proportion of FX earners at the commune level significantly affect the preference. The country has long history of dollarization after a surge of dollars in the economy in 1991. Since then, USD and other FX currencies have been used in transactions even after the attainment of economic stability and development. Dollarization often reflects the inadequate functioning of local currency for payments. Against this background, the government of Cambodia has now set promotion of usage of the local currency as its long-term policy objective and is seeking eventual de-dollarization. The country has started to address this deficiency by issuing higher value banknotes. This policy measure is in line with our results that enhancement of the usability of local currency for large value transactions is needed.

In addition to the need to issue higher banknotes, we may draw the following policy implications. Given the fact that the country is still a cash-based economy at large, policy measures should aim at the promotion of alternative measures to fulfil the transactions in cash. That is, the use of bank accounts in KHR may also alleviate transaction costs associated with the local currency as cash. Transactions via bank accounts can by-pass the use physical cash. A financial inclusion policy to promote banking services can play a significant role in the

promotion of local currency usage. Moreover, since the mode of payment is shifting toward digitized payment, including the use of mobile phones from cash these days, it would be good to make the best use of this modal shift. Policy measures may include promotion of digitized payments with preferential treatment for transactions in KHR relative to FX currency.[13] Restrictions on the use of FX currency for e-payments, or imposing taxes on transactions done in FX currency may also work. Lastly, we confirm that the network effect of FX currency usage was one of the key determinants revealed in our study. In addition, we find that households try to match the currency of acceptance with that of spending to avoid fluctuations in purchasing power. Therefore, regulations to encourage pricing in KHR should be pursued further. Price tags in KHR only, requirements for accounting/financial statements in KHR, wages/salaries disbursed in KHR - all these may be worth consideration.

There remain some limitations and challenges from our study. We focused on household sales of assets. This is a rather special environment with respect to the frequency of household behavior as well as the nature of the household itself. Enterprises are mainly engaged in transactions as their normal business. The analysis of currency choice by enterprise is more important than that of households if we want to fully capture the currency choices for the transactions within an economy. Therefore, for the actual implementation of policy measures and regulations, further study on the currency choices of enterprises is needed. Furthermore, our survey did not cover information on how assets are typically sold in domestic markets. For some variables, our empirical results are not consistent with our hypotheses that are dependent on asset types. These differences may possibly come from the difference in transaction methods for each type of asset. For example, households may use cash for transactions relating to some assets and may use bank transfers or other types of transfer service for others. Further investigation into the household use of payment methods is needed for understanding of the potential impact of

[13] Jiang and Zhang (2018) demonstrated that the introduction of policies biased towards domestic currency significantly reduces the acceptability of FX currencies.

policy implementation, such as the promotion of e-payment methods, on currency choice in the transactions relating to assets.

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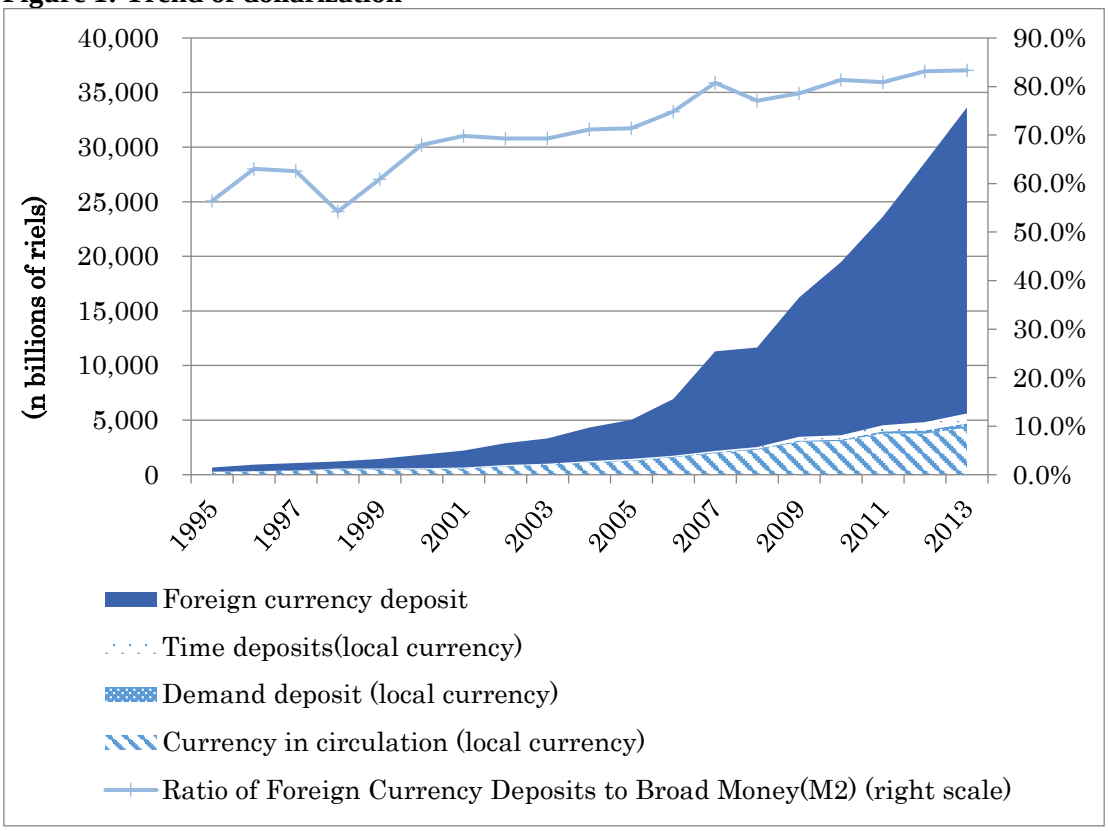
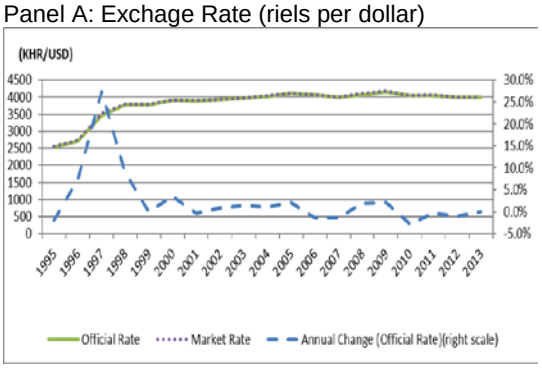
Figure 1: Trend of dollarization



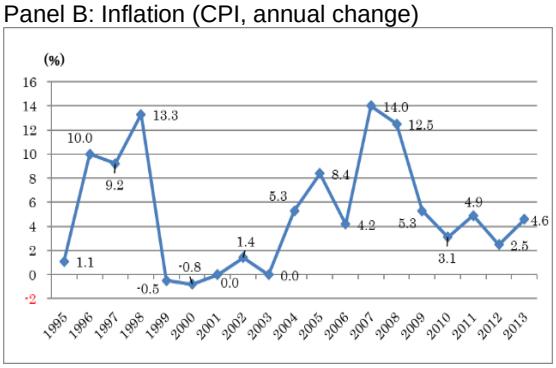
Source: National Bank of Cambodia

Figure 2: Trends in exchange rates and inflation

Panel A: Exchage Rate (riels per dollar)



Panel B: Inflation (CPI, annual change)



Source: National Bank of Cambodia

Table 1: Ratios of FX expenditure to total expenditure by item (%)

	Obs	Mean	Std. Dev.	Min	Max
Food & beverages	2,264	2.3	13.2	0.0	100.0
Rice	1,364	2.5	15.4	0.0	100.0
Tobacco & alcoholic beverages	795	5.1	21.0	0.0	100.0
House rent	90	48.1	48.9	0.0	100.0
Water & electricity	2,209	7.2	25.1	0.0	100.0
Recreation & culture	478	18.9	33.2	0.0	100.0
Clothing & footwear	1,628	18.8	33.7	0.0	100.0
Restaurant & eating out	560	10.7	28.5	0.0	100.0
Communication	2,015	39.0	44.8	0.0	100.0
Education	1,475	9.5	23.7	0.0	100.0
Health including toiletry	2,095	5.6	21.3	0.0	100.0
Transportation	2,029	3.8	16.7	0.0	100.0
Furniture & appliances	299	57.4	48.5	0.0	100.0
Miscellaneous	291	23.7	37.7	0.0	100.0
Total expenditure	2,264	8.8	16.6	0.0	100.0

Source: Prepared by authors using the survey data.

Table 2: Ratios of FX expenditure to total expenditure by commune category (%)

Commune Category	Obs	Mean	Std. Dev.	Min	Max
Urban	1200	11.0	18.0	0.0	98.4
Rural	1064	6.4	14.4	0.0	100.0
All	2264	8.8	16.6	0.0	100.0

Source: Prepared by authors using the survey data.

Table 3: Ratios of FX expenditure to total expenditure by income level (%)

Income Level	Obs	Mean	Std. Dev.	Min	Max
Q1(0%-20%)	453	4.4	12.8	0.0	98.4
Q2(20%-40%)	455	6.0	14.1	0.0	93.2
Q3(40%-60%)	451	8.4	14.8	0.0	92.0
Q4(60%-80%)	452	11.4	17.6	0.0	100.0
Q5(80%-100%)	453	13.9	20.5	0.0	97.7
All	2264	8.8	16.6	0.0	100.0

Source: Prepared by authors using the survey data.

Table 4: Currency preferred to accept in sales of assets

	Real estate		Furniture & applicances		Motorcycles & car		Machinery & equipment		Livestock		Inventory for small business/farming	
	obs	%	obs	%	obs	%	obs	%	obs	%	obs	%
KHR	301	13.9	1,335	61.9	285	14.9	488	47.3	744	84.0	1,114	79.5
USD	1,789	82.5	740	34.3	1,555	81.4	474	45.9	121	13.7	218	15.5
THB	73	3.4	74	3.4	71	3.7	67	6.5	18	2.0	62	4.4
VND	0	0.0	7	0.3	0	0.0	3	0.3	3	0.3	8	0.6
Gold	6	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	2,169	100.0	2,156	100.0	1,911	100.0	1,032	100.0	886	100.0	1,402	100.0

Source: Prepared by authors using the survey data.

Table 5: Preference to accept KHR for sales of assets by commune category (frequency and % to area total)

	Prefer KHR	Urban	Rural	Total		Prefer	Urban	Rural	Total
Real estate	(obs)	103	198	301	Machinery & equipment	(obs)	196	292	488
	(%)	9.0	19.3	13.9		(%)	41.2	52.5	47.3
Furniture & appliances	(obs)	626	709	1,335	Livestock	(obs)	301	443	744
	(%)	54.9	69.9	61.9		(%)	86.5	82.3	84.0
Motorcycles & car	(obs)	107	178	285	Inventories for small business/farming	(obs)	570	544	1,114
	(%)	10.4	20.3	14.9		(%)	77.0	82.2	79.5

Source: Prepared by authors using the survey data.

Table 6: Preference to accept KHR for sales of assets by income level (frequency and % to level total)

	Prefer KHR	q1 (0%-20%)	q2 (20%-40%)	q3 (40%-60%)	q4 (60%-80%)	q5 (80%-100%)	Total
Real estate	(obs)	103	75	48	43	32	301
	(%)	23.7	17.4	11.0	10.0	7.3	13.9
Furniture & appliances	(obs)	318	302	257	245	213	1,335
	(%)	77.2	69.9	58.9	56.5	48.2	61.9
Motorcycles & car	(obs)	72	74	44	55	40	285
	(%)	23.5	19.2	11.2	13.4	9.6	14.9
Machinery & equipment	(obs)	115	104	95	99	75	488
	(%)	61.2	50.0	44.0	47.8	35.2	47.3
Livestock	(obs)	194	173	154	135	88	744
	(%)	85.1	83.2	84.2	88.2	77.2	84.0
Inventories for small business/farming	(obs)	170	179	235	259	271	1,114
	(%)	86.3	78.5	82.8	80.9	72.7	79.5

Source: Prepared by authors using the survey data.

Table 7: Preference to accept KHR for sales of assets by depreciation expectation (frequency and % to level total)

	Prefer KHR	Expect depreciation (=No)	Expect depreciation (=Yes)	Total		Prefer	Expect depreciation (=No)	Expect depreciation (=Yes)	Total
Real estate	(obs)	287	14	301	Machinery & equipment	(obs)	464	24	488
	(%)	14.1	10.2	13.9		(%)	48.3	33.3	47.3
Furniture & appliances	(obs)	1261	74	1,335	Livestock	(obs)	708	36	744
	(%)	62.4	54.8	61.9		(%)	85.1	66.7	84.0
Motorcycles & car	(obs)	274	11	285	Inventories for small business/farming	(obs)	1049	65	1,114
	(%)	15.3	8.9	14.9		(%)	79.4	80.3	79.5

Source: Prepared by authors using the survey data.

Note: A respondent is to be categorized as expecting depreciation if he/she answered more than 4100 to the question "In 6 months from now, what do you think the USD/KHR exchange rate will be?" Otherwise, it is regarded as no depreciation. In addition, if the respondent did not answer or refused to answer the question, it is also regarded as no depreciation.

Table 8: Determinants of currency choice and their expected sign

Hypothesis	Variable	Expected sign of coefficient
H 1	$Asset\ \ Amount_{ik}$	$\beta_{1k}<0$
H2-1	$KHR\ \ Bank\ \ Account_i$	$\gamma_k > 0$
	$USD\ \ Bank\ \ Account_i$	$\delta_k < 0$
H2-2	$Asset\ \ Amount_{ik} \cdot Bank\ \ Account_i$	$\beta_{2k} > 0$
H3	$Ratio\ \ of\ \ FX\ \ Expenditure_i$	$\varepsilon_k < 0$
H4	$Depreciation\ \ Expectation_i$	$\psi_k < 0$
H5	$Network\ \ externalities_l$	$\phi_k < 0$

Table 9: The Effects of transaction size on currency choice

	A1	A2	A3	A4	A5	A6
	Real Estate	Furniture/Appliances	Motorcycle/Car	Machineries for Business/Personal Use	Livestock	Inventories for Small Business/Farming
	OLS with Clustering	OLS with Clustering	OLS with Clustering	OLS with Clustering	OLS with Clustering	OLS with Clustering
Amount of Assets (Thousands of USD)	-0.0005***	-0.1038***	-0.0132***	-0.0508***	-0.0735***	-0.0347***
	(-3.37)	(-6.47)	(-6.98)	(-4.40)	(-5.23)	(-4.87)
USD Bank Account Dummy	-0.0472**	-0.0868**	-0.0493***	-0.1404***	0.0136	-0.0318
	(-2.04)	(-2.28)	(-2.97)	(-2.62)	(0.24)	(-0.88)
KHR Bank Account Dummy	-0.0079	0.0775**	-0.0140	-0.0127	0.0302	0.0024
	(-0.34)	(2.16)	(-0.63)	(-0.26)	(0.67)	(0.07)
Ratio of Expenditure in FX	-0.0017***	-0.0046***	-0.0016***	-0.0039***	-0.0024**	-0.0032***
	(-3.64)	(-4.92)	(-3.71)	(-3.08)	(-2.17)	(-2.93)
Log Total Income per capita	-0.0021	-0.0259**	-0.0124	-0.0220	-0.0013	0.0170
	(-0.22)	(-2.13)	(-1.36)	(-1.27)	(-0.09)	(1.46)
Depreciation Expectation Dummy	-0.0109	0.0609	-0.0442	-0.1091	0.1355*	0.0558
	(-0.21)	(0.77)	(-0.78)	(-0.85)	(1.66)	(0.72)
Don't Know Dummy (Depreciation)	0.0215	0.0488	0.0235	0.0457	0.0685**	-0.0144
	(1.19)	(1.45)	(1.15)	(0.92)	(2.00)	(-0.39)
Middle in Education Level	-0.0368	-0.0138	-0.0458	0.0027	0.0082	-0.0818**
	(-1.43)	(-0.36)	(-1.46)	(0.05)	(0.21)	(-2.19)
High in Education Level	-0.0406	-0.0610	-0.0256	-0.0076	-0.0218	-0.0720
	(-1.32)	(-1.27)	(-0.76)	(-0.12)	(-0.45)	(-1.62)
Don't Know Dummy (Education)	-0.1015***	-0.0290	-0.0811	0.0149	0.0087	-0.0644
	(-2.81)	(-0.48)	(-1.56)	(0.18)	(0.13)	(-1.22)
Self Employee Dummy	-0.0485**	-0.0083	0.0161	-0.0655*	0.0034	0.0166
	(-2.51)	(-0.30)	(0.82)	(-1.88)	(0.11)	(0.44)
Older Dummy	0.0008	0.0230	0.0152	0.0658	0.0103	0.0413
	(0.05)	(0.83)	(0.82)	(1.59)	(0.37)	(1.56)
Commune Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.1166*	0.7601***	0.3986***	0.6200***	0.8430***	0.6904***
	(1.92)	(10.24)	(6.37)	(5.36)	(10.16)	(9.81)
Observations	1733	1695	1737	856	795	1181
Adjusted R-squared	0.1084	0.2241	0.1464	0.2389	0.2440	0.2125

Note: The figures in brackets are t-statistics using clustered standard errors. Significance at 1, 5, and 10 percent is represented by ***, **, and *, respectively. The sample was winsorized at 1 percent of the distribution of amounts of assets for each asset type to reduce bias from outliers.

Table 10: The Effect of transaction sizes and possession of bank accounts

	A1	A2	A3	A4	A5	A6
	Real Estate	Furniture/Appliances	Motorcycle/ Car	Machineries for Business/Personal Use	Livestock	Inventories for Small Business/Farming
	OLS with Clustering	OLS with Clustering	OLS with Clustering	OLS with Clustering	OLS with Clustering	OLS with Clustering
Amount of Assets (Thousands of USD)	-0.0008***	-0.1124***	-0.0182***	-0.0596***	-0.0745***	-0.0385***
	(-5.26)	(-5.39)	(-6.23)	(-4.31)	(-5.18)	(-5.02)
Bank Account Dummy # Amount of Assets	0.0008***	0.0265	0.0123***	0.0383*	0.0065	0.0111
	(2.76)	(0.87)	(3.55)	(1.69)	(0.22)	(0.86)
USD Bank Account Dummy	-0.0789***	-0.1081**	-0.0798***	-0.1690***	0.0069	-0.0469
	(-2.69)	(-2.45)	(-4.15)	(-2.94)	(0.13)	(-1.21)
KHR Bank Account Dummy	-0.0352	0.0587	-0.0387	-0.0326	0.0238	-0.0063
	(-1.33)	(1.49)	(-1.61)	(-0.66)	(0.42)	(-0.18)
Ratio of Expenditure in FX	-0.0017***	-0.0046***	-0.0017***	-0.0040***	-0.0024**	-0.0032***
	(-3.65)	(-4.92)	(-3.73)	(-3.21)	(-2.16)	(-2.87)
Log Total Income per capita	-0.0012	-0.0253**	-0.0114	-0.0210	-0.0013	0.0177
	(-0.13)	(-2.07)	(-1.25)	(-1.21)	(-0.10)	(1.52)
Depreciation Expectation Dummy	-0.0062	0.0658	-0.0373	-0.1047	0.1356*	0.0581
	(-0.11)	(0.83)	(-0.64)	(-0.81)	(1.66)	(0.74)
Don't Know Dummy (Depreciation)	0.0226	0.0493	0.0261	0.0471	0.0682**	-0.0121
	(1.27)	(1.45)	(1.26)	(0.95)	(1.98)	(-0.32)
Middle in Education Level	-0.0374	-0.0133	-0.0461	0.0013	0.0080	-0.0819**
	(-1.46)	(-0.34)	(-1.47)	(0.02)	(0.20)	(-2.19)
High in Education Level	-0.0409	-0.0607	-0.0270	-0.0144	-0.0212	-0.0724
	(-1.34)	(-1.26)	(-0.80)	(-0.23)	(-0.44)	(-1.63)
Don't Know Dummy (Education)	-0.1023***	-0.0277	-0.0806	0.0151	0.0085	-0.0658
	(-2.82)	(-0.46)	(-1.54)	(0.18)	(0.12)	(-1.24)
Self Employee Dummy	-0.0495**	-0.0086	0.0161	-0.0684*	0.0035	0.0156
	(-2.56)	(-0.32)	(0.83)	(-1.97)	(0.11)	(0.41)
Older Dummy	0.0023	0.0236	0.0148	0.0620	0.0101	0.0413
	(0.14)	(0.85)	(0.80)	(1.48)	(0.37)	(1.56)
Commune Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.1207**	0.7625***	0.4010***	0.6343***	0.8445***	0.6949***
	(2.00)	(10.29)	(6.43)	(5.56)	(10.08)	(9.87)
Observations	1733	1695	1737	856	795	1181
Adjusted R-squared	0.1114	0.2242	0.1489	0.2406	0.2430	0.2126

Note: The figures in brackets are t-statistics using clustered standard errors. Significance at 1, 5, and 10 percent is represented by ***, **, and *, respectively. The sample was winsorized at 1 percent of the distribution of amounts of assets for each asset type to reduce bias from outliers.

Table 11: The Effects of network externalities (proportion of the FX earners at commune level)

	A1	A2	A3	A4	A5	A6
	Real Estate	Furniture/Appliances	Motorcycle/ Car	Machineries for Business/Personal Use	Livestock	Inventories for Small Business/Farming
	OLS with Clustering	OLS with Clustering	OLS with Clustering	OLS with Clustering	OLS with Clustering	OLS with Clustering
Amount of Assets (Thousands of USD)	-0.0005***	-0.1042***	-0.0127***	-0.0518***	-0.0668***	-0.0337***
	(-3.89)	(-7.09)	(-7.73)	(-5.57)	(-5.27)	(-5.16)
USD Bank Account Dummy	-0.0390**	-0.0978***	-0.0530***	-0.1869***	0.0443	0.0025
	(-2.09)	(-2.75)	(-3.05)	(-4.27)	(0.89)	(0.07)
KHR Bank Account Dummy	-0.0116	0.0587*	-0.0152	-0.0213	0.0454	-0.0053
	(-0.57)	(1.70)	(-0.75)	(-0.45)	(1.19)	(-0.17)
Ratio of Expenditure in FX	-0.0017***	-0.0054***	-0.0020***	-0.0053***	-0.0061***	-0.0057***
	(-4.66)	(-6.55)	(-5.29)	(-5.74)	(-4.52)	(-5.81)
Log Total Income per capita	-0.0048	-0.0171	-0.0038	-0.0047	-0.0009	0.0139
	(-0.47)	(-1.53)	(-0.39)	(-0.29)	(-0.06)	(1.34)
Depreciation Expectation Dummy	-0.0133	0.0863	-0.0231	-0.1143	0.1355	0.0853
	(-0.26)	(1.14)	(-0.42)	(-0.92)	(1.60)	(1.24)
Don't Know Dummy (Depreciation)	0.0274	0.0746**	0.0369*	0.0353	0.0953***	-0.0078
	(1.52)	(2.44)	(1.97)	(0.86)	(2.79)	(-0.24)
Middle in Education Level	-0.0237	-0.0233	-0.0546*	-0.0028	0.0196	-0.0435
	(-0.96)	(-0.67)	(-1.82)	(-0.05)	(0.60)	(-1.37)
High in Education Level	-0.0236	-0.0663	-0.0417	0.0217	0.0220	-0.0284
	(-0.82)	(-1.54)	(-1.29)	(0.38)	(0.49)	(-0.76)
Don't Know Dummy (Education)	-0.0946***	-0.0201	-0.0807*	0.0318	0.0095	0.0121
	(-2.95)	(-0.36)	(-1.75)	(0.41)	(0.15)	(0.26)
Self Employee Dummy	-0.0742***	-0.0217	-0.0206	-0.0856**	0.0091	0.0413
	(-4.08)	(-0.86)	(-1.15)	(-2.54)	(0.35)	(0.97)
Older Dummy	-0.0083	0.0015	-0.0040	0.0735**	0.0188	0.0288
	(-0.51)	(0.06)	(-0.22)	(2.05)	(0.76)	(1.17)
Proportion of FX earners at commune level	-0.0016***	-0.0034***	-0.0018***	-0.0020*	0.0008	-0.0020**
	(-3.78)	(-4.00)	(-3.49)	(-1.83)	(0.74)	(-2.48)
Commune dummies	No	No	No	No	No	No
Constant	0.2899***	0.8769***	0.2982***	0.6186***	0.8201***	0.8578***
	(4.25)	(14.12)	(4.71)	(5.66)	(8.70)	(14.69)
Observations	1733	1695	1737	856	795	1181
Adjusted R-squared	0.0564	0.1789	0.0615	0.1339	0.1171	0.1394

Note: The figures in brackets are t-statistics using clustered standard errors. Significance at 1, 5, and 10 percent is represented by ***, **, and *, respectively. The sample was winsorized at 1 percent of the distribution of amounts of assets for each asset type to reduce bias from outliers.

Table 12: The Effects of Network externalities (average ratio of expenditure in FX at commune level)

	A1	A2	A3	A4	A5	A6
	Real Estate	Furniture/Appliances	Motorcycle/Car	Machineries for Business/ Personal Use	Livestock	Inventories for Small Business/Farming
	OLS	OLS	OLS	OLS	OLS	OLS
Amount of Assets (Thousands of USD)	-0.0006***	-0.1069***	-0.0137***	-0.0510***	-0.0683***	-0.0353***
	(-4.07)	(-6.95)	(-7.73)	(-5.35)	(-5.24)	(-5.54)
USD Bank Account Dummy	-0.0444**	-0.1113***	-0.0592***	-0.2050***	0.0407	-0.0187
	(-2.35)	(-3.15)	(-3.42)	(-4.67)	(0.80)	(-0.56)
KHR Bank Account Dummy	-0.0123	0.0615*	-0.0136	-0.0162	0.0509	-0.0017
	(-0.61)	(1.76)	(-0.67)	(-0.35)	(1.38)	(-0.06)
Ratio of Expenditure in FX	-0.0016***	-0.0047***	-0.0017***	-0.0041***	-0.0032***	-0.0031***
	(-3.60)	(-5.12)	(-4.14)	(-4.05)	(-2.97)	(-3.13)
Log Total Income per capita	-0.0088	-0.0258**	-0.0079	-0.0092	0.0012	0.0103
	(-0.86)	(-2.26)	(-0.82)	(-0.56)	(0.08)	(0.93)
Depreciation Expectation Dummy	-0.0179	0.0805	-0.0258	-0.1190	0.1248	0.0614
	(-0.35)	(1.07)	(-0.47)	(-0.94)	(1.47)	(0.90)
Don't Know Dummy (Depreciation)	0.0215	0.0657**	0.0313*	0.0259	0.0893***	-0.0192
	(1.20)	(2.12)	(1.67)	(0.63)	(2.83)	(-0.61)
Middle in Education Level	-0.0228	-0.0199	-0.0526*	0.0007	0.0241	-0.0448
	(-0.91)	(-0.57)	(-1.73)	(0.01)	(0.78)	(-1.46)
High in Education Level	-0.0218	-0.0646	-0.0398	0.0163	0.0227	-0.0341
	(-0.75)	(-1.50)	(-1.21)	(0.29)	(0.52)	(-0.92)
Don't Know Dummy (Education)	-0.0961***	-0.0228	-0.0831*	0.0336	0.0251	0.0090
	(-2.95)	(-0.41)	(-1.80)	(0.43)	(0.41)	(0.20)
Self Employee Dummy	-0.0777***	-0.0321	-0.0246	-0.0924***	0.0032	0.0381
	(-4.23)	(-1.24)	(-1.37)	(-2.76)	(0.13)	(0.95)
Older Dummy	-0.0067	0.0052	-0.0020	0.0765**	0.0244	0.0347
	(-0.41)	(0.19)	(-0.11)	(2.16)	(1.01)	(1.43)
Average of Ratio of Expenditure in FX at commune level	-0.0017*	-0.0049**	-0.0023**	-0.0046**	-0.0062***	-0.0080***
	(-1.86)	(-2.27)	(-2.15)	(-2.18)	(-2.96)	(-4.88)
Commune dummies	No	No	No	No	No	No
Constant	0.2937***	0.8875***	0.2985***	0.6340***	0.8528***	0.8900***
	(4.27)	(13.90)	(4.71)	(5.67)	(9.11)	(16.13)
Observations	1733	1695	1737	856	795	1181
Adjusted R-squared	0.0517	0.1709	0.0558	0.1362	0.1301	0.1603

Note: The figures in brackets are t-statistics using clustered standard errors. Significance at 1, 5, and 10 percent is represented by ***, **, and *, respectively. The sample was winsorized at 1 percent of the distribution of amounts of assets for each asset type to reduce bias from outliers.

Table 13: Regression with pooling of all assets types as robustness checks

	(1)	(2)	(3)	(4)
	OLS with Clustering	OLS with Clustering	OLS with Clustering	OLS with Clustering
Amount of Assets (Thousands of USD)	-0.0004***	-0.0008***	-0.0005***	-0.0006***
	(-2.74)	(-4.60)	(-3.57)	(-3.82)
Bank Account Dummy # Amount of Assets		0.0009***		
		(4.01)		
USD Bank Account Dummy	-0.0782***	-0.0870***	-0.0760***	-0.0877***
	(-4.73)	(-5.05)	(-4.69)	(-5.51)
KHR Bank Account Dummy	0.0091	0.0014	-0.0010	0.0013
	(0.52)	(0.08)	(-0.05)	(0.08)
Ratio of Expenditure in FX	-0.0035***	-0.0035***	-0.0043***	-0.0035***
	(-8.89)	(-8.87)	(-11.53)	(-9.11)
Log Total Income per capita	-0.0165***	-0.0163***	-0.0109	-0.0160**
	(-2.84)	(-2.82)	(-1.61)	(-2.32)
Depreciation Expectation Dummy	0.0049	0.0058	0.0314	0.0258
	(0.14)	(0.16)	(0.86)	(0.70)
Don't Know Dummy (Depreciation)	0.0368**	0.0371**	0.0416**	0.0348**
	(2.18)	(2.21)	(2.44)	(2.07)
Middle in Education Level	-0.0309*	-0.0312*	-0.0247	-0.0227
	(-1.73)	(-1.75)	(-1.33)	(-1.21)
High in Education Level	-0.0447**	-0.0449**	-0.0314	-0.0316
	(-2.15)	(-2.16)	(-1.46)	(-1.45)
Don't Know Dummy (Education)	-0.0538*	-0.0537*	-0.0337	-0.0354
	(-1.86)	(-1.85)	(-1.16)	(-1.23)
Self Employee Dummy	-0.0129	-0.0132	-0.0284**	-0.0334**
	(-1.07)	(-1.09)	(-2.21)	(-2.54)
Older Dummy	0.0228*	0.0231*	0.0145	0.0170
	(1.84)	(1.87)	(1.12)	(1.32)
Proportion of FX earners at commune level			-0.0020***	
			(-4.86)	
Average of Ratio of Expenditure in FX at commune level				-0.0038***
				(-3.31)
Dummies for Asset Types				
Furniture/Appliances Dummy	0.4615***	0.4580***	0.4566***	0.4536***
	(25.80)	(26.11)	(25.11)	(24.72)
Motorcycle/Car Dummy	0.0071	0.0038	0.0008	-0.0028
	(0.53)	(0.29)	(0.05)	(-0.20)
Machineries for Business/Personal Use Dummy	0.3059***	0.3026***	0.3054***	0.3041***
	(14.60)	(14.63)	(14.30)	(14.29)
Livestock Dummy	0.6439***	0.6401***	0.6552***	0.6559***
	(30.11)	(30.47)	(31.55)	(31.81)
Inventories for Small Business/Farming Dummy	0.6733***	0.6699***	0.6677***	0.6654***
	(36.99)	(37.74)	(36.10)	(36.01)
Commune Dummies	Yes	Yes	No	No
Constant	0.2521***	0.2563***	0.2992***	0.3124***
	(6.45)	(6.58)	(6.21)	(6.44)
Observations	7997	7997	7997	7997

Note: The figures in brackets are t-statistics using clustered standard errors. Significance at 1, 5, and 10 percent is represented by ***, **, and *, respectively. The sample was winsorized at 1 percent of the distribution of amounts of assets for each asset type to reduce bias from outliers. For the dummy variables of asset types, we set an asset type of Real Estate as baseline.

Appendix Table 1: Definitions of variables used in the estimation

Amount of Assets (Thousands of USD)	Amount of assets for type of asset in thousands of USD; real estates (A1), household furniture/appliances (A2), motorcycle and car (A3), machineries for business and personal use (A4), livestock (A5) and inventories for small business/farming (A6).
USD Bank Account Dummy	This dummy variable takes the value one if the household head had one or more USD denominated bank accounts in financial institutions. Otherwise it takes the value zero.
KHR Bank Account Dummy	This dummy variable takes the value one if the household head had one or more KHR denominated bank accounts in financial institutions. Otherwise it takes the value zero.
Ratio of Expenditure in FX (%)	The ratio of total amount of foreign currency expenditure to total expenditure.
Log. Total Income per capita	Natural logarithm of total income, including the remittance, divided by number of family members.
Depreciation expectation Dummy	This dummy variable takes the value one if households answered more than 4100 in the question "In 6 months from now, what do you think the USD/KHR exchange rate will be?" Otherwise, it takes the value zero. In addition, if the respondent did not answer or refused to answer the question, it takes the value zero.
Don't know Dummy (Depreciation)	This is a dummy variable which takes the value one if the respondent did not answer or refused to answer the question "How much do you think the exchange rate of KHR to USD will be in 6 months." Otherwise it takes the value zero.
Middle in Education Level	This dummy variable takes the value one if a respondent answered "secondary school," or "high school," Otherwise, it takes the value zero.
High in Education Level	This dummy variable takes the value one if a respondent answered "bachelor degree," or more to the question about the household head's education level. Otherwise, it takes the value zero.
Don't know Dummy (Education)	This dummy variable takes the value one if a respondent answered "don't know" to the question about the household head's education level. Otherwise, it takes the value zero.
Self-Employee Dummy	This dummy variable takes the value one if a household has an income source from business ownership. Otherwise, it takes the value zero.
Older Dummy	This dummy variable takes the value one if the household head was older than 40. Otherwise, it takes the value zero.
Commune dummies	Dummies for communes.
Proportion of FX earners at commune level (%)	Fraction of households in a commune which have earned more than USD300 in FX currency per month (About 25% of average total income per household)
Average Ratio of Expenditure in FX at commune level (%)	The average of ratios of FX expenditure to total income at commune-level,

Appendix Table 2: Descriptive statistics of variables used in the estimation

Variable	Observations	Mean	Std. Dev.	Min	Max
Amount of Real Estate(in Thousands of USD)	1,786	39.22	50.87	0.60	470.00
Amount of Furmiture/Appliances (in Thousands of USD)	1,734	0.68	1.09	0.01	8.50
Amount of Motorcycle/Car (in Thousands of USD)	1,773	2.22	3.26	0.06	22.00
Amount of Machineries for Business/Personal Use (in Thousands of USD)	882	0.74	1.68	0.01	15.00
Amount of Livestocks (in Thousands of USD)	815	1.12	1.44	0.01	8.00
Amount of Inventories for Samll Business/Farming(in Thousands of USD)	1,208	1.12	2.29	0.01	18.50
KHR Bank Account	2,273	0.14	0.35	0.00	1.00
USD Bank Account	2,273	0.11	0.32	0.00	1.00
Bank Account (Either in KHR or USD)	2,273	0.22	0.41	0.00	1.00
Ratio of Expenditure in FX	2,264	8.88	16.62	0.00	100.00
Log. Total Income per capita	2,233	5.00	1.16	-0.79	9.36
Depreciation expectation Dummy	2,273	0.02	0.14	0.00	1.00
Don't know Dummy (Exchange rate)	2,273	0.80	0.40	0.00	1.00
Middle in Education Level	2,273	0.57	0.50	0.00	1.00
High in Education Level	2,273	0.23	0.42	0.00	1.00
Don't know Dummy(Education)	2,273	0.07	0.25	0.00	1.00
Self employee Dummy	2,273	0.66	0.47	0.00	1.00
Older Dummy	2,273	0.61	0.49	0.00	1.00
Proportion of FX earners at commune level	135	26.68	22.48	0.00	100.00
Average of Ratio of Expenditure in FX at commune level	135	9.59	11.84	0.00	85.14

Note: Since the units of observations for proportion of FX earners and Average Ratio of FX Expenditure are communes, we present the summary statistics at commune-level. Asset 1 stands for real estates, Asset 2 for household furniture/appliances, Asset 3 for motorcycle and car, Asset 4 for machineries for business and personal use, Asset 5 for livestock, and Asset 6 for inventories for small business/farming.

Appendix Table 3: Correlation matrix of variables used in the estimation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
(1) Amount of Asset 1 (in Thousands of USD)	1.00																				
(2) Amount of Asset 2 (in Thousands of USD)	0.01	1.00																			
(3) Amount of Asset 3 (in Thousands of USD)	0.20	0.10	1.00																		
(4) Amount of Asset 4 (in Thousands of USD)	0.02	0.15	0.04	1.00																	
(5) Amount of Asset 5 (in Thousands of USD)	0.00	0.05	-0.09	0.21	1.00																
(6) Amount of Asset 6 (in Thousands of USD)	-0.07	0.11	0.12	0.13	-0.06	1.00															
(7) KHR Bank Account	-0.05	-0.01	0.01	-0.02	-0.02	0.18	1.00														
(8) USD Bank Account	0.18	0.00	0.30	0.05	-0.05	-0.07	-0.01	1.00													
(9) Bank Account (Either in KHR or USD)	0.11	-0.01	0.23	0.00	-0.04	0.09	0.68	0.68	1.00												
(10) Ratio of Expenditure in FX	-0.04	0.17	0.05	0.26	-0.11	0.16	0.02	0.03	0.01	1.00											
(11) Log. Total Income per capita	0.07	0.29	0.21	0.12	-0.11	0.09	-0.04	0.11	0.05	0.21	1.00										
(12) Depreciation expectation Dummy	-0.04	-0.06	-0.02	-0.05	0.18	-0.05	-0.04	-0.04	-0.06	-0.03	-0.10	1.00									
(13) Don't know Dummy (Exchange rate)	0.10	0.00	-0.03	-0.01	0.01	-0.19	-0.06	-0.10	-0.11	-0.06	-0.07	-0.19	1.00								
(14) Middle in Education Level	-0.09	-0.13	-0.18	-0.11	-0.07	0.05	0.01	-0.04	0.02	0.04	-0.09	-0.04	-0.12	1.00							
(15) High in Education Level	0.04	0.12	0.27	0.05	-0.04	0.04	0.06	0.11	0.06	0.04	0.12	-0.05	-0.02	-0.61	1.00						
(16) Don't know Dummy(Education)	0.01	0.27	0.03	0.05	0.11	-0.06	0.03	-0.07	-0.03	0.02	0.02	-0.02	0.04	-0.28	-0.09	1.00					
(17) Self employee Dummy	-0.01	0.16	0.14	-0.07	-0.12	0.07	-0.12	0.01	-0.07	0.10	0.41	-0.16	-0.10	0.04	0.06	-0.06	1.00				
(18) Older Dummy	-0.07	-0.05	-0.19	-0.05	0.05	-0.11	0.19	-0.02	0.15	-0.11	-0.10	-0.03	0.06	0.04	-0.25	0.01	-0.14	1.00			
(19) Rural Dummy	-0.12	-0.21	-0.14	-0.05	0.04	0.03	-0.22	0.03	-0.11	-0.11	-0.09	0.09	-0.04	0.15	-0.13	-0.12	-0.15	-0.06	1.00		
(20) Proportion of FX earners	0.13	0.11	0.09	0.07	-0.11	0.11	0.05	0.06	0.04	0.22	0.16	-0.06	-0.07	-0.04	0.04	0.11	-0.01	0.10	-0.19	1.00	
(21) Average of Ratio of Expenditure in FX	0.08	0.06	0.08	0.19	-0.13	0.43	0.21	0.06	0.16	0.52	0.09	0.00	-0.23	0.04	0.01	0.00	-0.14	0.07	-0.16	0.49	1.00

Abstract (in Japanese)

要約

ドル化した経済では、金融部門や企業部門での金融ドル化が観察される場合が多いが、実物ドル化や決済ドル化が家計部門に及んでいる場合もしばしば観察される。日常的な取引の際、家計が自国通貨に代えて外国通貨を使用している。

本稿は、家計による取引通貨の選択に影響を与える要因について、全国的に実施されたカンボジアの家計調査データを使って分析を行った。調査では、各家計に対して所有財産（６種類：土地/家屋、家具/家電、バイク/自動車、業務用及び個人用の機器、家畜/家禽、農業用及び個人事業用の資材/在庫）の現在価格、当該財産を売却する際の代金希望受取通貨（自国通貨か外国通貨）について聞き取りを行っており、そのデータを利用した。

分析の結果、全ての財産種類において取引額が大きくなるほど外国通貨をより選ぶ傾向があることが分かった。ただし、銀行口座を保有する場合は、取引額の影響は緩和された。自国通貨利用に伴う取引費用が銀行口座サービスの利用によって縮減されるためと考えられる。このほか、支出全体の中で外国通貨での支出割合の高い家計ほど外国通貨をより希望する傾向がみられ、また、通貨利用のネットワーク外部性、すなわち支出に外国通貨をより多く使うコミューンに居住する家計ほど外国通貨をより希望する傾向も確認された。いずれも財産種類に関係なく共通に見られた。

家計部門の自国通貨利用促進のためには、自国通貨利用に伴う取引費用を外国通貨に対して相対的に引き下げることが重要と考えられる。

キーワード: ドル化、通貨選択、取引費用、家計調査データ

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