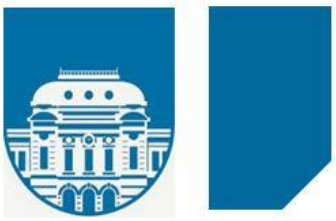

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Debit and credit card holdings: effects of the Uruguayan Financial Inclusion Law

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Abstract

This paper examines the impact of measures implemented in Uruguay to promote financial inclusion. We analyse the changes in terms of access to debit and credit cards and their determinants. We also employ Diff in Diff strategies to assess the effect of a particular measure: the mandatory payment of salaries through bank accounts. We find evidence that financial inclusion has improved during the period analysed, through the expansion of debit cards. We document that the impact was strongest among low-income households and those headed by women or Afro-descendants. We also show that the expansion was greater than that observed in other similar countries. However, we find almost no change in access to credit cards.

JEL Classification: G21, G50, O16

Keywords: Financial inclusion; Household finances; Payment instruments.

Resumen

Este trabajo examina el impacto de las medidas aplicadas en Uruguay para promover la inclusión financiera. Analizamos los cambios en términos de acceso a las tarjetas de débito y crédito y sus determinantes. Empleamos estrategias *Diff in Diff* para evaluar el efecto de una medida concreta: el pago obligatorio de los salarios a través de cuentas bancarias. Nuestra evidencia sugiere de que la inclusión financiera ha mejorado durante el período analizado, a través de la expansión de las tarjetas de débito. Documentamos que el impacto fue más fuerte entre los hogares de bajos ingresos y los encabezados por mujeres o afrodescendientes. Asimismo mostramos que la expansión fue mayor que la observada en otros países similares. Sin embargo, no encontramos casi ningún cambio en el acceso a las tarjetas de crédito.

JEL Classification: G21, G50, O16

Keywords: Inclusión financiera; Finanzas de los hogares; Instrumentos de pago.

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1. Introduction

The promotion of an inclusive financial system has received increased attention among researchers and policy makers, especially in low- and middle-income countries. Financial inclusion is understood as the process that ensures the access, availability and usage of the formal financial system for all members of an economy (Sarma and Pais (2011); Sarma (2008)). Greater and better access to quality financial services may significantly improve the daily management of resources, enable savings and the ability to cope with shocks, leading to higher long-term consumption (Bachas et al. (2021)). In the same line, it provides a pathway to a variety of financial options, promoting increased welfare through greater investment and efficient allocation of resources. Moreover, an inclusive financial system helps to discourage the proliferation of informal credit sources, which are often characterized by abusive practices. Although financial services have spread steadily over the past decades around the world, access to some basic financial products, such as a bank account or debit and credit cards, still remains as a barrier to financial inclusion in many developing countries Demirgüç-Kunt et al. (2020).
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In this paper we examine the impact of the so-called "Financial Inclusion Law" (FIL) implemented in Uruguay in 2014. The Uruguayan law is one of the major efforts within the region in favor of a profound reform of the payment system and an expansion of basic financial instruments to segments that previously did not have access (Trivelli and Caballero (2018)). Remarkably, it includes a unique measure that makes mandatory to pay salaries through bank accounts for the private sector, besides the public one. Other countries, such as Argentina, had also implemented the payment of public employees' salaries through bank deposits. However, no other country in the region had implemented the mandatory payment of salaries by bank account for private sector employees.

We use data from the Survey of Uruguayan Households Finances (*Encuesta Financiera de los Hogares Uruguayos*, EFHU) and from the World Bank Global Findex Dataset. We first analyse the determinants of debit and credit cards holdings and check whether they have changed over the period 2012-2017. Then, taking advantage of the fact that the FIL affects various groups of households differently, we employ a Diff in Diff strategy plus Propensity Score Matching to assess the impact of the mandatory payment of salaries through bank accounts. Finally, we apply a Diff in Diff plus re-weighting approach that compares Uruguayan progress in terms of access to debit and credit cards with those observed in other similar countries.

While there is significant recent research on financial inclusion linked to financial literacy and innovation (Mejía and Azar (2021); Mhlanga (2020); Ozili (2018); Gabor and Brooks (2017); Hospido et al. (2021)), there is less evidence on how public policies can improve access to financial instruments in contexts that lag behind. We contribute to this understanding by exploiting the particular features of the Uruguayan FIL to study the effectiveness of measures implemented to spread access to debit and credit cards. Our results are of particular interest for developing countries, where a substantial fraction of the population remains excluded from the financial system.

Our main findings are the following. First, access to debit cards dramatically increases during the period where

the FIL was implemented, and the influence of variables such as income, gender and race on the probability of owning a debit card weakens significantly. In particular, the racial gap in debit card ownership disappears in 2017, while the gender gap narrows. Second, access to credit cards remains constant over the period, and the influence of income and education on the probability of having a credit card slightly increases. Third, the probability of having a debit card rises in around 12 percentage points (p.p.) for the groups affected by the mandatory payment of wages through electronic instruments, compared to similar groups do not affected by the measure. In turn, we find no effect on the probability of having a credit card. Fourth, we show that the expansion in access to debit cards in Uruguay was substantially higher than that observed in similar countries during the period 2014-2017.

The rest of the paper is as follows. Section 2 describes the Uruguayan financial system and explains the FIL. Section 3 presents the data sources and descriptive statistics. Section 4 includes the empirical strategy and the corresponding results. Finally, Section 5 concludes the paper.

2. Background

2.1. Financial inclusion policies

Several policies have been implemented in countries from different regions to promote or consolidate the financial inclusion throughout their economies. Regarding Latin American countries, according to Demirguc-Kun et al.(2018) only 55 % workers receive their salary through a bank account, meaning that a high share of workers still are paid in cash. In addition, Trivelli and Caballero (2018) review the nine "national policies" (Brazil, Colombia, Ecuador, Haiti, Jamaica, Honduras, Mexico, Paraguay, Peru) and the two "laws" (Nicaragua, Uruguay) that have been developed between 2011 and 2017 to promote financial inclusion. They point out that the actions planned by the countries' governments include all or some of the following dimensions: i) expansion of customer service channels, ii) financial education, iii) regulatory changes, iv) modernization of the payment system, v) consumer protection and vi) new financing schemes. As mentioned, they also highlight that the Uruguayan law (explained in more depth in Section 2.2) differed from the other strategies in the region. Its main measures lie in the creation of subsidies for the expansion of the payment terminal (POS) network, tax incentives for final consumers to use debit cards and electronic money instruments, and the obligation for salary payments (both public and private sector) and social benefits to be made through a bank account.

Financial inclusion has been a policy priority in some Asian and African countries, as well. Ayyagari and Beck (2015) reports that less than 27% of adults in developing Asia had an account at a formal financial institution and only 33% of firms access to a line of credit or a loan from a financial institution. Through a greater use of formal accounts and formal savings, China achieved high levels of inclusion compared to the region Fungácová and Weill (2015)). In turn, among the factors that have significantly impacted financial inclusion in Africa are foreign banks from emerging markets which improves te access to credit (Beck et al.

2015), innovative financial services that helped overcome infrastructure problems and improved access to finance (Allen et al. (2014)), and the increased access to the internet and cell phones (Evans (2018)). However, in sub-Saharan Africa the main obstacle to inclusion lies in high illiteracy rates.

Regarding the developed world, the policy initiatives implemented in the United Kingdom and Australia are very similar to those in the United States, from which they draw their inspiration (Marshall (2004)). The main obstacles to financial inclusion in these countries are the households concentrated in deprived urban areas of larger cities who are still outside the formal sector facing major financial disadvantages. As well, Marshall (2004) highlights the difficulties that these policies face in enlisting the cooperation of financial institutions. For European countries, the policies are mainly focused on granting access to credit markets for small and medium-size firms (Infelise (2014)) and to ensure the system stability (Comparato (2015)).

2.2. The Uruguayan financial system

Uruguay is a small upper-middle income Latin American country, widely open to regional and international markets. The country's financial system is based on the banking sector, while stock markets are severely under-developed.

Assets of banks account for 99% of the financial intermediation institutions (BCU (2017a)), but there are other non-banking firms that play a role by providing financial services as well. The financial system also includes other types of institutions such as off-shore banking, pension funds administrators and insurance companies.

The banking system comprised eleven banks in 2017, two of which are state-owned. Banks are deeply involved in the payment system, foreign exchange markets, money market and credit for households and firms. A particular characteristic is the high dollarization of the system. Both families and firms have a high preference for keeping savings in foreign currency (the 73% of total deposits were denominated in US dollars in 2017). Following a deep financial crisis in 2002, foreign currency-denominated loans declined sharply, standing at around 50% of total gross credit to the non-financial sector in 2017.

Regarding the Uruguayan credit markets, they are composed of a reduced number of suppliers, primarily banks, where the state-owned ones figure prominently. The predominant role of banks for credit supply is evidenced, for example, by the fact that in 2017 they accounted for 93% of total outstanding credit amongst regulated credit-suppliers, with 43% alone originated by the two state-owned banks (Rivero Wildemauwe and Sanroman (2022)). In addition to banks, there are other credit providers operating in the market, especially firms focused at consumer credit in local currency. They provided about 15% of all credit to households in 2017. These institutions specialize in lending to low-income borrowers at very high rates (even higher than 150% when inflation is lower than 10%).

Given this figure, efforts have been made to improve the financial inclusion and the formalization of the economy. Among the main problems related to high evasion and low access to financial services was the scarce use of electronic payment instruments, mainly debit cards (Lluberas and Saldain (2015)). The local issuers

of electronic means of payment are financial institutions authorized by the Central Bank of Uruguay (BCU), mostly banks in terms of number of transactions and total amounts transacted (BCU (2017b)).

To access a credit card, the customer must have a sufficient credit rating for the financial institution to assume the risk of granting the card. The issuer defines the credit limit in accordance with the customer's credit risk assessment that determines the payment capacity and compliance with the established requirements. Depending on the client's behavior, the card may be used as a means of payment (amortization of all purchases made in the month) or as a means of borrowing, incurring interest costs.

Concerning the banking system's operations in the credit card market, the BCU informs about active interest rates, in local currency and US dollars (see Table 1). Financial institutions must report the capital that was financed and the interest rates for the previous month of the report. That Table shows an upward trend in the cost of financing in local currency, from 62.9% in December 2011 reaching a maximum of 81.6% in December 2017. On the other hand, during the same period, rates in US dollars decreased from 13.3% to 7.5%. As a weighted average, the growth trend in rates may be due to the increase in the share of banks with higher interest rates. During the period, the state-owned bank tended to set the lowest rates in the market.

Credit card holders generally pays an annual fee. There are different types of cards depending on the user: commercial, corporate, business and for preferential customers, each with its own characteristics and benefit schemes. These benefits include among others purchase rewards (including discounts that can be as high as 25%), travel programs, travel medical assistance, cash advances. In addition, an important feature is the possibility to pay for some purchases in installments of up to 12 or 24 months at no additional cost (e.g. furniture or household appliances).

The debit card is an electronic payment instrument issued by banking institutions, associated with a deposit account (savings or checking account) and generally issued at no cost to the customer. This card can be used in automatic teller machines (ATMs) to perform operations such as cash withdrawals, transfers between accounts, deposits, consultations, or for the payment of goods and services by debiting the holder's bank account at the time of purchase. In this case, the customer bears the cost of maintaining the bank account and the commercial firm pays a fee, as with credit cards. Alternatively to debit cards, there are prepaid cards issued by banks and other financial intermediaries that allow to pay for purchases or electronic transactions.

Most households in Uruguay receive income on a monthly basis. The access to credit or debit cards benefits households' resources management by enabling obligations to be scheduled with available funds. They also allow consumers to deal with unexpected expenses or family emergencies. Credit cards offer the advantage of paying the bill almost a month later, the option to pay without a surcharge and rewards for frequent use. Debit cards provide the convenience of accessing cash at any ATM and the ability to make purchases without handling cash, or use them as a means of savings.

Regarding the access and use of electronic means of payment in the country, Lluberas and Saldain (2015) study the drivers of households payment instrument choice in 2012. They find that households are intensive in the

use of cash while the use of credit and debit cards is limited by this year. Their results show that income, age and education increase the probability of using electronic payment instruments and that the access to financial services is an important determinant of using plastic over cash, as well as the supply side conditions, like card acceptance at stores. Similarly, Sanroman and Santos (2016) find that income, education, gender, age and employment status significantly influence the likelihood of having debit cards and credit cards, using data from 2012 Uruguayan households. There are also works that find that financial inclusion was rather limited by 2014 and that education played a strong influence even after controlling for income, by elaborating a synthetic index of financial inclusion that includes several measures of access, use and barriers using microdata (Ferre et al. (2016). Other papers such as Dassatti and Mariño (2017) yield similar results using aggregate data.

2.3. The Financial Inclusion Law

Over the last decades, the Uruguayan governments have made several efforts to promote access to banking services and spread the use of electronic transfers or electronic means of payment, such as debit and credit cards. The first measures, introduced in 2005, included a 9 p.p. reduction in VAT for payments in restaurants, provided that a debit or credit card was used. Besides, a subsidy for the cost of using network of payment terminals (Point-Of-Sales, POS) by small businesses started from 2013. As a result, the number of POS increased 120% from 2012 to 2014 (Lluberas and Saldain (2015) and contributed to the decrease of the indirect tax evasion rate.

In 2014, important changes were addressed with the FIL, which comprised previous and new measures towards financial inclusion and development, as well as against tax evasion. In terms of impact on household finances, the most relevant measures of the FIL are: (i) the mandatory payment of salaries, pensions and social benefits through bank accounts or electronic means of payment; (ii) the exemption of the cost of accounts in financial institutions for the purposes of such payments (iii) the reduction of VAT on purchases of final goods and services paid with a debit card (4 p.p.) or credit card (2 p.p.)[1]. Other measures include the ban of discounts through cash payment to the detriment of payment by debit card or electronic money instrument, the ease of access to a network of ATMs with multiple withdrawal points throughout the country and the restriction of the use of cash for high-value transactions.

The peculiar measure of compulsory payment of salaries through a bank account took a center stage of the FIL, according to academics and local policy makers interviewed. However, given the short period of implementation, they argue that the technological change on the payment system should be still more visible than the effect on household finances. On the other hand, the law lead to a widespread resistance from several financial intermediation institutions, such as private banks and credit cooperatives. These associations argued that they would bear the brunt of economic impact, as they would begin to offer free services for which they had previously charged.

[1]This reduction also applies to other electronic money instruments, such as prepaid cards. In this document, prepaid cards, as well as other analogous instruments, are included in the category "debit card" because they share their main characteristics.

The aggregate impact of the FIL can be seen through substantial changes in the Uruguayan payment system. Once the law was enforced, financial institutions had to diversify and sophisticate their supply of products as well as improve technology, promotions and loyalty policies. Figure 1.*a* depicts the number of cards, in millions of units, by instrument from the second half of 2012 to the first half of 2021. It shows the expansion throughout the period, mainly of debit cards and particularly electronic money, which was created in 2016. Figure 1.*b* shows the amounts traded per instrument, in millions of dollars, for the same period. From this data, we calculate that the application of the 4-point VAT rebate in the second half of 2014 might have led to an increase in debit card transactions of 111% compared to the previous half. Furthermore, applying the VAT rebate to the total amounts transacted, we estimate that this policy resulted in savings of USD 305 million for households in 2017 which represents around 0.75% of aggregate household consumption.

In this paper, the aim is to examine the impact of the measures described above, after the implementation of the FIL. It is difficult to consider all potential effects because there is no available information about all financial inclusion dimensions. Therefore, to do so, we focus on the access to credit and debit cards as an indicator of financial inclusion.[2]

To guide our analysis, the main hypothesis is that the FIL could have directly and indirectly promoted a series of outcomes that contribute to achieving the deepening the financial inclusion of the population. On the one side, access to debit cards is expected to improve given that the measures implemented with the FIL are aimed directly at expanding access to this particular instrument. On the other side, although the FIL does not include any specific measure to promote access to credit cards, in line with previous research (Hogarth and O'Donnell (2000); Hogarth et al. (2005)) spillover effects would be expected. Notably, the bank account holding granted by law could bring users closer to the banking system and, therefore, to access to other types of instruments, such as credit cards. Besides, the FIL provided subsidies for the expansion of the POS, which meant an expansion on the supply side, that could also affect the incentives to hold credit cards.

3. Data and Descriptive Statistics

We use data from the Survey of Household Finances in Uruguay ("Encuesta Financiera de los Hogares Uruguayos", EFHU), a nationally representative survey conducted by the National Institute of Statistics. The survey provides reliable information on the demographic and financial characteristics of households. The main financial variables used in this paper are the ones that indicate the access of the household to banking services (credit card, debit card and bank account). We use the first and third waves of the survey, corresponding to the years 2012 and 2017.

[2]It should be noted that in 2020 several articles of the FIL were repealed. The measures related to the mandatory payments of salaries through banking institutions and the use of financial instruments for large transactions were eliminated. In addition, the new government halved the VAT reduction for all purchases using debit card (from 4 to 2 p.p.) and in restaurants using debit or credit cards (from 9 to 5 p.p.)

As an additional source, we use the Global Financial Inclusion (Findex) database from the World Bank to compare the evolution of access to debit and credit card in Uruguay with other similar countries. The Global Findex database complies nationally representative surveys in over 140 countries. It is at the individual level and is representative of the population older than 15 years old in each country. The Findex database contains variables such as access to debit card, credit card and bank account in a financial institution, among many others. We use the three waves of the database, that correspond to the years 2011, 2014 and 2017.

Table 2 shows descriptive statistics of credit card and debit card holders in Uruguay by demographics, based on EFHU. We find some interesting facts regarding the evolution of access to debit and credit cards in the different household groups. During 2012 and 2017 the percentage of households with credit cards remains relatively constant in 57-59%, while the percentage of households with debit cards shows an important increase from 52% to 76%.

The percentage of households with access to debit cards during this period increases for all income and education levels, but the increases are greater for lower income and less educated families. Considering the households in the 1st quintile of income, the percentage with debit card increases 32 p.p. from 23% to 55%. Among the households of the 2nd quintile the increase is of 31 p.p (from 39% to 70%) and among the 3rd quintile of 24 p.p (from 53% to 77%). There is also an increase in the percentage of households with debit cards in the higher quintiles of income, in the 4th quintile the increase is of 18 p.p., being 84% the households with debit cards in 2017, and in the 5th quintile of 12 p.p., reaching 91% of the households with debit cards in 2017. As to the access to credit cards, the results are very different. We only find slight increases in the percentage of households with credit card for the 4th and 5th quintiles of income (6 and 4 p.p. increase, respectively) and a decrease of 5 p.p. in the 1st quintile of income.

The percentage of debit card holders also increases for all educational levels. Among families with elementary school, secondary school incompleted or secondary school completed the increase is around 25 p.p. Meanwhile, those with incomplete and complete tertiary education show an increase of less than 10 p.p., but achieved in 2017 a very high percentage of households with debit cards (92% and 97%, respectively).

Regarding the labor status of the head of household, 98% of public employees already have debit cards in 2012, and the percentage remains constant during the period. The percentage of private employees that holds debit cards increases 29 p.p. (from 55% to 84%). Among informal workers, the increase is of 30 p.p. (from 28% to 58%) and among self-employed workers of 25 p.p. (from 43% to 68%). As to the location of the household, we find that the percentage having debit card for households living in the capital city increased from 57% to 82% and for households not living in the capital city from 48% to 71%.

Although these improvements in terms of access to debit cards during this period, inequalities by income, educational level, location and labor status still persist. We find that the difference in the percentage of debit card holders between the 1st and the 5th quintile of income is of 36 p.p., between individuals with elementary school and complete tertiary education of 40 p.p., and between households living in the capital city and those who do not, the difference is of 11 p.p. If we consider credit card, this differences are much higher. For

example, considering the income level of the household, 30% of households in the 1st quintile hold credit cards and 83% in the 5th quintile (there is a difference of 53 p.p.). From these descriptives an interesting question that arises is whether the determinants of credit and debit card holdings have changed during this period, we address this question in Section 4.1.

In order to compare the evolution of Uruguay in this period with other countries we use the Findex database. It is worth noting that the EFHU is at the household level, while the Findex database is at the individual level. Therefore, the variables from the EFHU indicate if the household has at least one debit card/credit card, while the variables from the Findex indicate if the individual has access to these financial instruments. As a consequence, it is expected that the percentage of debit card and credit card holders are higher considering the EFHU. For the year 2017, we find that 76% of households in Uruguay have access to debit cards according to the EFHU, while 54.5% of the individuals (using the Findex database). Regarding credit card, 59% of households have credit card (EFHU) and 40% of the individuals (Findex).

Figure 2 compares Uruguay with high-income countries in terms of access to debit and credit cards. We see that Uruguay starts from a position far from the rest of the countries in 2011, especially in terms of debit card access. In 2011, most countries show between 30-100% of individuals with debit cards, while this percentage for Uruguay is around 18%. In terms of credit card, Uruguay has 30% access, while the other countries between 20% and 70%. In 2017, the point cloud shifts upward and Uruguay is closer with almost 60% of debit card access and around 40% for credit cards.

The picture is different in the context of Latin American countries. In 2011, Uruguay ranks mid-table in terms of access to debit card and second best in access to credit card, after Brazil. By 2017, Uruguay is in the first position in terms of credit card holding and within the top four regarding debit cards, together with Chile, Brazil and Venezuela (see Figure 3).

4. Empirical strategy and results

The main objective of this Section is to provide rigorous evidence on the evolution of financial inclusion in the analyzed period, which spans from 2012 to 2017. Access to financial products has been growing in recent decades, but the period under analysis is of particular interest due to the fact that during it the government deployed a set of measures in pursuit financial inclusion, in particular those included in the FIL, as we explained in Section 2. For this purpose, we focus on debit and credit card holdings as proxies of household inclusion in financial markets.

As is well known, it is not an easy task to assess the causal impact of policies that simultaneously affect all individuals, like those that are generally included in laws. Although we do not have a strong strategy to isolate the causal effect of the FIL, we still can evaluate how the probability of having debit and credit cards, as well as their determinants, evolved over the period, and study the impact of a particular measure, as it is the mandatory payment of salaries through bank accounts.

With this aim, we use three empirical approaches. The first two use data from the EFHU. To begin, we separately estimate biprobit models for the probability of having debit and credit cards in the years 2012 and 2017, and test whether the influence of various covariates changed over the period. Then, we take advantage of the fact that the mandatory payment of salaries through bank accounts affected heterogeneously different groups of workers to perform a Diff in Diff strategy. Finally, using the Findex data set we apply a procedure that combines Diff in Diff and re-weighting to compare the evolution in Uruguay with those of countries that were similar in terms of relevant variables at the beginning of the period.

4.1. Determinants of debit and credit card holdings

As we previous stated, the proportion of household that have debit cards substantially increased (from 0.52 to 0.76), that of credit card holders remains almost unchanged (0.57 and 0.59), while the fraction of those who owns debit cards given they also have credit cards increased (from 0.67 to 0.89) during the period under analysis. The question we want to address in this Section is whether the determinants of having debit and credit cards have changed in this period where the measures described in Section 2 had been implemented.

To this aim, we estimate limited dependent variable models (LDV) in which "holding a debit card" and "holding a credit card" are the dependent binary variables. Let y_j^* and y_j^* be latent variables corresponding to the utility of having debit and credit cards respectively, and let us define

$$y_j = 1(y_j^* > 0) \text{ with } j = D, C$$

It is possible to write down the latent model as:

$$y_D^* = x'\delta_D + u_D$$
$$y_C^* = x'\delta_C + u_C$$

Where (u_D, u_C) are assumed to be independent of X, and follow a bivariate normal distribution with zero mean and unit variance and likely correlated (being $\rho = corr(u_D, u_C)$ the correlation index). We observe y_D and y_C as previously defined. Notice that if ρ is different from 0 (u_D and u_C are correlated), estimates of δ using a bivariated probit is preferred than to use separated univariate probits. Correlation could arise because of the presence of unobservable components that simultaneously influence the likelihood of debit and credit card holdings. In addition, if we estimate a bivariate model we can obtain the effect of each covariate on the joint probability.

Among controls we include familyâĂŹs income, age, gender, education level and working status of the householdâĂŹs head. We also add housing tenure and a dummy indicating if household residence is in the capital city to the set of covariates. In addition, we include an indicator of whether the household head is Afro-descendant. Finally, we use an indicator of whether the household head receives a Conditional Cash Transfer, as the payment of social benefits was made through debit cards even before the FIL.

In line with Sanroman and Santos (2016), our results for 2012, indicate that household income, education level, gender, age and employment status significantly influence the probability of having both types of financial instruments. These results hold considering 2017, but we observe interesting changes.

The bivariate probit estimates, provided in Table 3, show that the effect of household income on the probability of having debit cards is significant and positive in 2017, but lower than in 2012 (marginal effects are 0.185 and 0.141, respectively). In contrast, the estimated influence of income on credit card access is higher in 2017, while the influence of this variable on the joint probability of having debit and credit cards increases slightly.

In addition, education has a significant impact on the probability of having debit cards. Including dummy variables for each educational level, we find that, over the period, the influence of having secondary education strengthens, while the effect of tertiary education weakens. Given that a large share of the working population attains the secondary education level, this result seems to be in line with the widespread access to this instrument and, therefore, to reinforce the impact of income discussed above. For example, those with completed secondary education are 8.8 p.p. more likely to have debit cards than those with primary education in 2012 and those with completed tertiary education are 24.8 p.p. more likely in 2012. These figures are 11.7 p.p. and 19.1 p.p., respectively, in 2017. Similarly, education positively influences the probability of having credit cards and both of the instruments, and do not change significantly between 2012 and 2017 .

Our estimates also show that gender is significant and negative in explaining the probability of having debit cards, credit cards and both in 2012; while by 2017 that gap narrows. The effect is also negative on the probability of having debit cards in 2017 but lower (the point estimates are -6.5 p.p. and -2.3 p.p. in 2012 and 2017, respectively), but the influence on having credit card and both is not significant at the 5% level. In addition, we find that in 2017 households headed by Afro-descendants are equally likely to have debit or credit cards; whereas in 2012 they are less likely to have access to debit and/or credit cards. Also, households living outside the capital city are less likely to have debit or credit cards in 2017, while in 2012 the effect is also negative for credit cards but not significant for debit cards.

As for employment status, we include four dummy covariates in our specification. The first one captures whether the household head is a public employee. This variable is important because public employees have been receiving their salary through a bank account long before the approval of the FIL. Our estimates indicate that the influence of this variable is highly relevant in 2012 for debit card holding (public employees are 47.8 p.p. more likely to have debit cards than private employees) but its influence drops sharply in 2017 (to 20.4 p.p.). However, the effect of this variable is not significant for credit card holding, neither in 2012 nor in 2017; while its influence on the joint probability decreases over the period (from 27.4 p.p. to 9.9 p.p.).

The second and third variables indicate whether the household head is self-employed or an informal worker, respectively. In 2012, the influence of the former variable is significant and negative on the probability of having debit and credit cards and also on the joint probability (-4.3, -4.2 and -4.4 p.p, respectively). In 2017 its effect on debit card holdings is larger (-7.3 p.p.) but does not significantly affect the latter two. Also, our results indicate that informal and unemployed workers are less likely to have debit and/or credit cards in both

2012 and 2017, with the magnitudes of the effect being similar in both years (point estimates range between -14.8 and -17.7 p.p. for informal workers, and between -11.1 and -13.8 for unemployed). Both the effect of informality and unemployment are as expected, given that the application of the law is limited to formal sector employment.

Finally, recipients of conditional cash transfers increase their probability of holding a debit card during the period (from 5.3 p.p. to 12.2 p.p.). This result is expected as the payment of cash transfers is made through a debit card. It is worth noting that previous to the FIL the debit card was not associated to a bank account.

In summary, our results indicate progress in terms of financial inclusion in Uruguay during the period under analysis. In particular, access to debit cards expands and the influence of variables such as income, gender, race and being a public employee on the probability of having a debit card weakens. However, the effect of informality, self-employment and unemployment remains almost unchanged over the period. Besides, the picture in terms of access to credit cards remains almost unchanged, except for Afro-descendants and self-employed. These patterns are in line with what might be expected from the effects of the FIL, which through the measure of making it mandatory to pay wages through bank accounts, directly impacted the likelihood of access to debit (but not credit) cards for formal private employees.

4.2. Difference in Difference approach

In this section, we estimate the impact of the FIL measure that made it mandatory to pay wages through a bank account. To do so, we use a Diff in Diff approach to assess whether this measure influences the probability of having debit and credit cards. The measure had a heterogeneous impact on different groups of workers. In particular, formal private employees are the group that was directly affected, and on which the FIL actually has enforcement, for housemaids the mandatory payment through banks was applied later (in 2018), and residents of towns with less than 2,000 inhabitants were excluded of this measure.

Taking advantage of these facts, we conduct four diff in diff exercises to estimate the impact of the FIL. In the first two, formal private employees are the treated group, while public employees and informal private employees act as alternative control groups. Public employees have been receiving their salaries through bank transfers since before the law was passed. On the other hand, the obligation to pay wages through electronic instruments directly affects formal private employees, but has no enforcement to informal workers.

Thirdly, we compare individuals formally employed by firms in cleaning occupations as the treated group with housemaids as controls. Recall that housemaids were comprised later in the FIL, in 2018, outside the period covered by available data. Finally, we define the treated group as private employees living in urban locations outside the capital city with more than 5,000 inhabitants, and the control group private employees living in towns with less than 5,000 inhabitants. Notice that in the latter the rule does not exactly replicates the rules of the FIL (town of less than 2,000 inhabitants) but is the closer classification available in the data.

To perform the diff in diff estimation we use a biprobit model plus propensity score matching re-weighting

(PSM). We estimate the model using data from both EFHU's waves (2012 and 2017) and add additional covariates as is standard in Diff in Diff equations. The latent model is defined now as,

$$y_j^* = \gamma_j \textit{Treated*2017} + \alpha_j 2017 + \beta_j \textit{Treated} + x'\delta_j + u_j \text{ with j=D,C.}$$

Where "2017" indicates that the observation correspond to the following period, and *Treated* is a dummy variable that takes the value one if the individual is in the treated group, and zero if she or he is the control group. Therefore, we can estimate the impact of the law through γ_D and γ_C, which are the coefficients of the interaction between these two covariates (and thus a measure of the Treatment Effect on the Treated) in the corresponding equation for the probability of holding debit and credit cards, respectively.

To perform the PSM we use probit models, considering a set of covariates that includes income per capita, race, gender, age, education and residence in the capital city. For the third alternative, that of employed in cleaning occupations, we omit gender due to almost all are women. For the fourth, we omit residence because neither the treated nor the control group includes people in the capital city. in all cases, we use individual covariates and household-level outcome variables. Therefore, we include restrictions related to the presence of other workers in the household who had already had access to the cards, so that the groups were not contaminated.

The results of the estimations are provided in figures 5, 6, 7 and 8, and tables 4, 6, 8 and 10. In each table, Column (1) exhibits the marginal effect on the probability of having a debit card, Column (2) the effect on the probability of having a credit card, and Column (3) on the joint probability of having a debit and a credit card. The balance tests for the treated and control groups before and after the PSM are presented in Tables 5, 7, 9 and 11.

First, considering the estimations with formal private employees as the treated group and public employees as the control group, results shown in Figure 5 and Table 4 indicate that the probability of having a debit card in households of the treated group increases significantly (12.2 p.p.), compared to households in the control group. However, there is no significant effect for the probability of having credit cards. After the PSM, the balance of the groups improved, as can be seen in Table 5.

Similarly, considering formal private employees as the treated group and informal private employees as the control group, results shown in Figure 6 and Table 6 indicate that the probability of having debit cards in households of the treated group increases in 10.5 p.p., compared to households in the control group. We find no effect on the probability of holding a credit card. The table 7 shows that, before PSM, the treatment and control groups are quite different on almost all characteristics considered. Moreover, some imbalance persists after the PSM: the main differences lie in a higher proportion of women, young people and individuals with a higher level of education in the treated group.

We also can see that the probability of having a debit card in the treated group is lower than that of the control group, both pre- and post-policy, when we consider private formal employees compared to public employees, while the reverse is true when we consider private formal employees compared to private informal employees. However, the results in both cases lead to similar conclusions. We also note that in the case of formal and

informal employees, both groups increased their probability of having a debit card, although this increase was greater for the treated group.

Second, regarding the estimations with individuals formally employed in cleaning occupations as the treated group and housemaids as the control group, results in Figure 7 and Table 8 show an increase of 17.7 p.p. in the probability of holding a debit card relative to the control group, and no effect on the probability of having a credit card. In this case we see that the control group has a higher probability of having a debit card both before and after the reform, and that both groups increased their probability of having a debit card during the period, although this increase was greater for the treatment group. We also tested the control group restricted to formal domestic workers. The point estimates are the same, with wider confidence intervals. The composition of the groups after PSM is similar, as can be observed in the balance test (Table 9).

Third, considering formal private employees in towns with more than 5,000 inhabitants as the treated group and individuals in towns of less than 5,000 inhabitants as the control group, results shown in Figure 8 and Table 10 indicate that the probability of having a debit card increases in 12.9 p.p. relative to the control group. It should be noted that the measure was applied in towns of more than 2,000 inhabitants, not 5,000, therefore, within our control group there are individuals who were also affected by the policy. Thus, this estimation must be regarded as a lower bound of the actual effect. In addition, our evidence suggest that race influences the magnitude of the effect; the probability of access for households headed by Afro-descendants is 28.1 p.p. lower. Finally, the composition of the groups is similar, as can be observed in the balance test (Table 11).

In summary, we assess the effect of mandatory payment of wages by bank account using different control and treatment groups. The results lead to similar conclusions in the four performed counterfactual exercises: we find a significant increase in the probability of having a debit card for households affected by the measure, relative to the control group, and no effect of this norm on the probability of having a credit card. Likewise, when comparing all formal private employees with public employees and informal workers the effect in the probability of having a debit card is around 12 p.p., while we report an increase of almost 18 p.p. for those formally employed in cleaning occupations. This finding is quite interesting given that cleaning occupations are characterised by a low educational attainment of its workers and deprived salaries, in addition to being largely feminized. As well, we find heterogeneous effects associated with Afro-descent when comparing formal private employees in towns with more than 5,000 inhabitants (no capital city) with those in towns with less than 5,000 inhabitants. In contrast, in no case gender appears to be a source of heterogeneity on the estimated effects.

4.3. Diff in Diff using households of other countries as the control group

In the previous sections we showed that access to debit cards has expanded significantly in Uruguay in the period under analysis, and we found evidence that could support the hypothesis that the FIL contributed to this fact. However, access to financial instruments has expanded worldwide over the last decades, so it is worth asking whether the Uruguayan evolution could be explained only from this common trend.

In this section we try to answer this question by comparing the evolution of the probability of having debit and credit cards in Uruguay with that of other countries, using data from the Findex dataset. Findex includes information from about 140 countries, and has three waves corresponding to the years 2011, 2014 and 2017. Unfortunately, we cannot follow a synthetic control approach (Abadie and Gardeazabal (2003)) or a DID plus matching approach (Abadie (2005)) for that purpose, because Findex is a cross-sectional survey and only includes three time periods. Instead, we use a procedure that combines Diff in Diff and re-weighting.

In order to construct the "counterfactual", we use a kernel algorithm to define which countries to include and their relative weights. The algorithm is based on the distance between each country and Uruguayan figures in the baseline period (2011) in three key variables: i. ratio of people owning debit card in the country, ii. ratio of people owning credit card in the country, and iii. GDP per capita. We first compute a measure of that distance as:

$$dist_j = exp\left(-\frac{1}{2}\left(\frac{D_j - D_U)}{bw_D}\right)^2 + \left(\frac{C_j - C_U)}{bw_C}\right)^2 + \left(\frac{GDP_j - GDP_U)}{bw_{GDP}}\right)^2\right)$$

where D_j, C_j and GDP_j are the proportion of people with debit cards, credit cards and the GDP per capita in country j (with $j = U$ to denote for Uruguay), respectively. Meanwhile bw stands for "bandwidth", and we compute it as the optimal bandwidth determined by an univariate gaussian kernel. Afterwards, we compute $w_j = \frac{dist_j}{\sum dist_j}$ (for all available countries excluding Uruguay) and select those countries with $w_j > 0.02$. Finally, we re-scale weights of the selected countries to sum the value one.

As a result, the ten countries that entered to the control group (and each country weight) are: Chile (0.4327), Argentina (0.2401), Mexico (.0693), Montenegro (.0541), Malaysia (.0447), Brazil (.0383), Poland (.0340), Lebanon (.0331), Panama (.0299) and Dominican Republic (.0238); and Uruguay's weight equals one.

Once the country weights have been calculated, we return to the Findex microdata to estimate a weighted biprobit Diff in Diff equation, where the weight of each individual observation is given by the product of the country weights and those of the Findex dataset. We consider three alternative periods to perform the estimation. The first period considered is 2011-2014, the second is 2014-2017; and the last is 2011-2017. The second is of particular interest because the FIL rules since 2014, while the latter is more suitable to compare with our results from EFHU dataset which covers the period 2012-2017.

The latent model is defined now as,

$$y_j^* = \gamma_j Uruguay{*}Year + \alpha_j Year + \beta_j Uruguay + x'\delta_j + u_j \text{ with j=D,C.}$$

Where "Year" indicates that the observation correspond to the following period (2014 or 2017), and *Uruguay* is a dummy variable that takes the value one if the household lives in Uruguay. Therefore, we can estimate the impact of the law through γ_D and γ_C, which are the coefficients of the interaction between these two covariates (and thus a measure of the Treatment Effect on the Treated).

Table 12 presents the results for the periods 2011-2014 (Columns (1) to (3)), 2014-2017 (Columns (4) to (6)) and 2011-2017 (Columns (7) to (9)). The results for the 2011-2014 period show that the increase in the joint

probability of having a credit card and debit card is 4.3 p.p. higher in Uruguay relative to the control group (significant at the 1% level). The effect is of 4.2 p.p. for the probability of having a debit card and of 6.2 p.p. for credit card (but the former is significant only at the 10%). Thus, we find modest effects for this period and a smaller one for debit card than credit card.

The results change substantially for the period 2014-2017. Uruguay shows an increase in the probability of having a debit card during this period significantly higher than the countries included in the control group (the difference is about 12.9 p.p.). Moreover, the effect for credit card holding is not significantly different than zero, suggesting that the evolution of the probability of having a credit card in Uruguay was very similar to that of the control group. Finally, if we consider the complete period, we find an effect of 15.3 p.p. in the probability of holding a debit card, of 6.4 p.p. in the probability of holding a credit card, and of 8 p.p. in the joint probability of holding a debit and credit card. It is worth noting that our regressions do not control for differences in growth across countries. Indeed, the annual growth rate during 2011-2017 was 2.2% for Uruguay while it was 1.2% for the control group.

In order to check for the robustness of our results we estimate the model with alternative control groups of countries and weights. First, we estimate with the same countries as before but without re-weighting. Second, all 140 countries enter to the estimation without country weights. Afterwards, we select the control group alternatively within High Income countries and Latin American countries. In addition, the selection of countries and weights is done by considering the distance just in the dimensions of percentages of debit and credit card holders. Finally, the selection is done by considering the distance in the dimensions of percentages of debit and credit card holders plus the proportion of the population that has tertiary education.

The results of this robustness checks are found in Table 13 and indicate that the expansion of debit card holders in Uruguay was larger than that observed in the countries used as controls, but when compared to high-income countries. Barring that, the magnitude of the difference does not change dramatically between the control groups, except when all countries are considered without weights, where this magnitude is notably larger. Moreover, the results show that the evolution of credit cards was similar in Uruguay as in the control groups.

Our findings in this Section are in line with those documented earlier in this paper using the EFHU, but allow us to assess Uruguay's performance in relative terms. Therefore, to some extent, separating the effects of the measures implemented in the country with other regional or global trends that might have increased the use of electronic means of payment.

In summary, we evidence that the increase in the probability of accessing a debit card over 2011-2017 is higher than what could be explained by common international trends. Specifically, this result strengthens during the period where the FIL was implemented (2014-2017), while the findings are more modest prior to its entry into force (2011-2014). Furthermore, the evolution of credit card holdings was similar to those of the control group countries. Thus, we conclude that the measures taken to promote financial inclusion (in particular the FIL) had an effective but limited impact (only in the dimension of access to debit cards).

5. Conclusion

In this paper we study financial inclusion in Uruguay during 2012-2017. The period under analysis is of particular interest because the government deployed a set of financial inclusion measures, notably those included in the Financial Inclusion Law (FIL). We analyse the determinants of debit and credit cards holdings and check whether they have changed over the period. Besides, we employ a Diff in Diff strategy plus Propensity Score Matching to assess the impact of the mandatory payment of salaries through bank accounts on the most affected population. In addition, we apply a Diff in Diff plus re-weighting approach that compares Uruguayan progress in terms of access to debit and credit cards with those observed in similar countries.

We document a large increase in the probability of households owning debit cards, and some changes on its determinants, that are in line with the expected impact of the FIL. In particular, we find a reduction in the influence of variables such as income, gender and race on the probability of having debit cards. However, we find no effect of the FIL on the probability of having credit cards. This result is somewhat not anticipated because, although the FIL does not include any particular measure to promote the spread of credit cards (except for a very small discount in the V.A.T.), some spillover effects of having a debit card on the probability of having credit cards could have been expected.

We use a Diff in Diff approach that allows us to assess the impact of a particular measure of the FIL: the mandatory payment of wages by bank account on debit and credit card holdings. Our results employing alternative treatment and control groups lead to similar conclusions: a significant increase of around 12 percentage points (p.p.) in the probability of having a debit card for households affected by the measure and no effect of this norm on the probability of having a credit card. We also show that for the case of individuals employed in cleaning occupations, a low-paid and highly feminised sector, the effect is even larger (up to 17.7 p.p.).

We compare Uruguay with other similar countries to answer the question of whether its observed results can be explained by common international trends, in terms of access to electronic means of payment. We document that the increase in the fraction of the population owning debit cards in Uruguay is 13 p.p. larger than that observed in the control group countries, during the period 2014-2017. In addition, we find no differences between Uruguay and the control group in terms of credit card holdings.

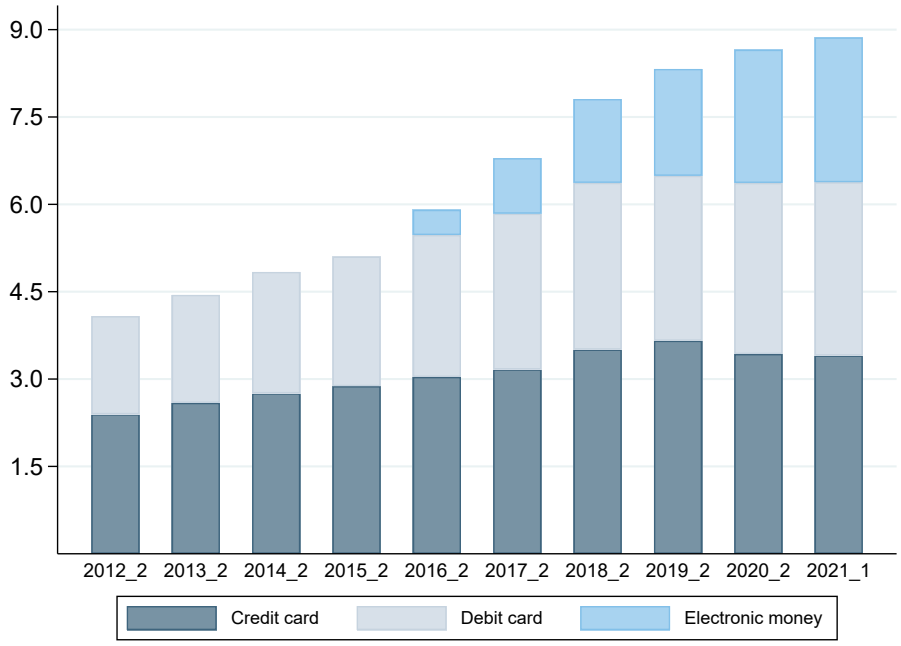
As concluding remarks, it is important to note that our work shows significant advances in financial inclusion in Uruguay during the period studied. In terms of macroeconomic data, these advances are mainly reflected in considerable changes in the payment system, through a substantial reduction in the use of cash. Moreover, according to our results, the FIL facilitated access to electronic payment instruments for traditionally excluded subpopulations.

However, our findings also suggest that the impact of the FIL is limited to the diffusion of debit cards, with no direct or indirect effects on the probability of having credit cards. This is consistent with the specific design of the FIL. According to policy makers interviewed by the authors for this paper, the FIL was prevented from generating incentives to promote the use of payment instruments that would lead to over-indebtedness, partic-

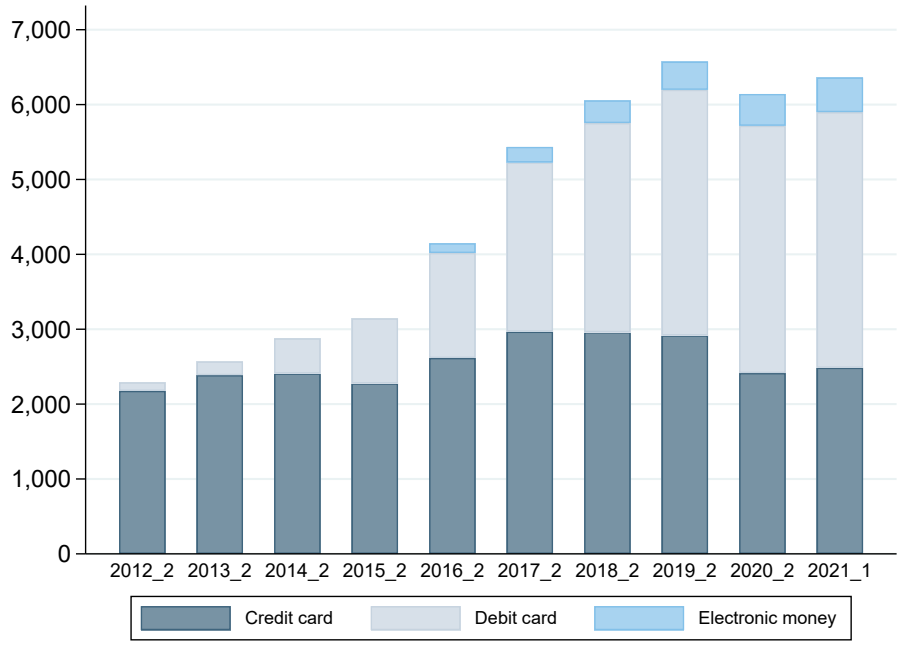
ularly for vulnerable households. In our view, credit cards are a valuable instrument that, when used properly, has the advantage of making it easier to smooth consumption at no additional cost A possible alternative would have been to foster the access to credit cards and include financial education programs to prevent undesirable effects.

This paper does not explore all relevant dimensions of financial inclusion. Future studies should include addressing the impact of the FIL on the effective use of debit and credit cards, on household indebtedness (in terms of quantity and quality), as well as on household savings, which are in our research agenda.

Figure 1: Quantity of cards and traded amounts by intrument. Second semesters, Uruguay



(a) Quantity of cards by instrument (in million units)

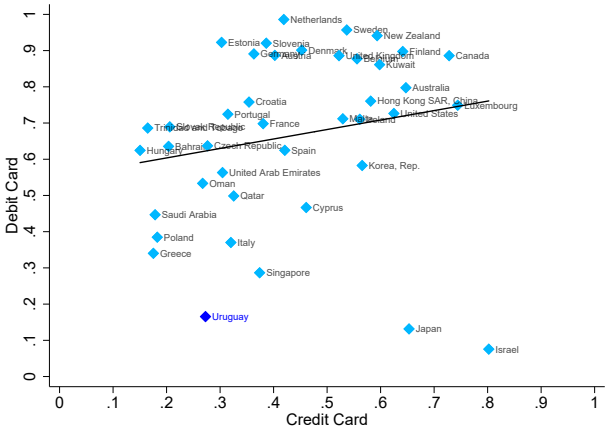


(b) Amount traded by instrument (Second semesters, millions of current USD)

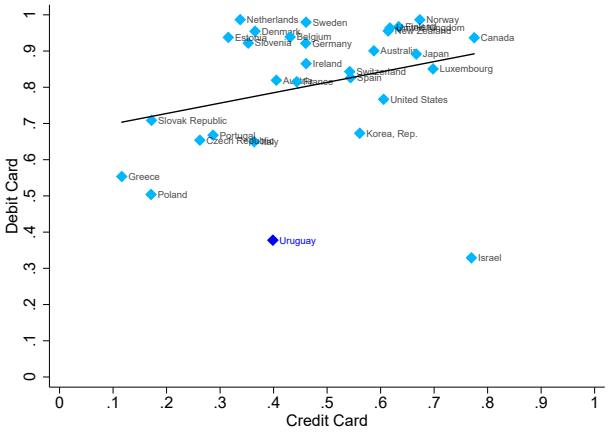
Source: Own elaboration based on Central Bank of Uruguay, *Reporte del sistema de pagos minorista*. *Notes:* (a) The quantity of cards does not specifically reflect the evolution in access, since an individual may have increased the number of cards he/she holds over the period. (b) USD stands for U.S. dollars.

Figure 2: Rate of debit and credit cards holders. Uruguay vs High Income Countries (2011, 2014 and 2017)

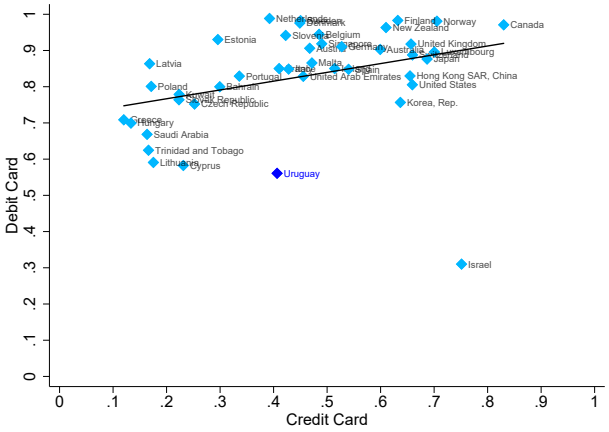
(a) 2011



(b) 2014



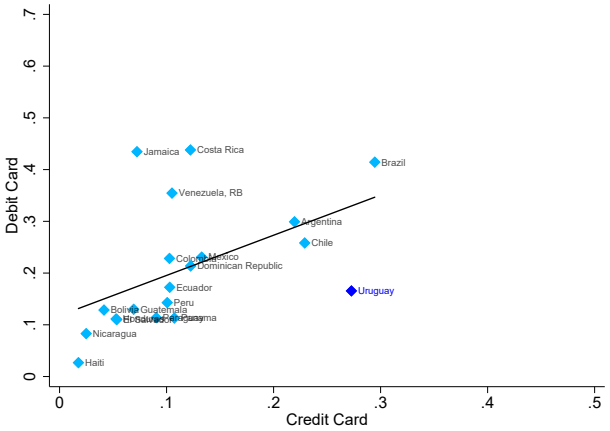
(c) 2017



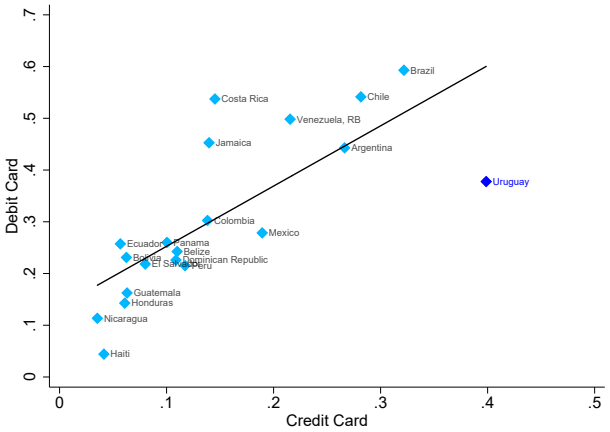
Source: Own elaboration based on Global Financial Inclusion (Findex) Dataset. *Notes:* (a) Findex complies nationally representative surveys in over 140 countries. (b) We use the three waves of the database, that correspond to the years 2011, 2014 and 2017.

Figure 3: Rate of debit and credit cards holders. Uruguay vs Latin American Countries (2011, 2014 and 2017)

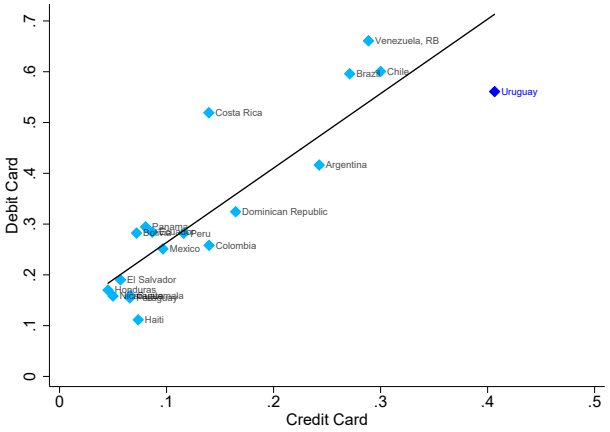
(a) 2011



(b) 2014

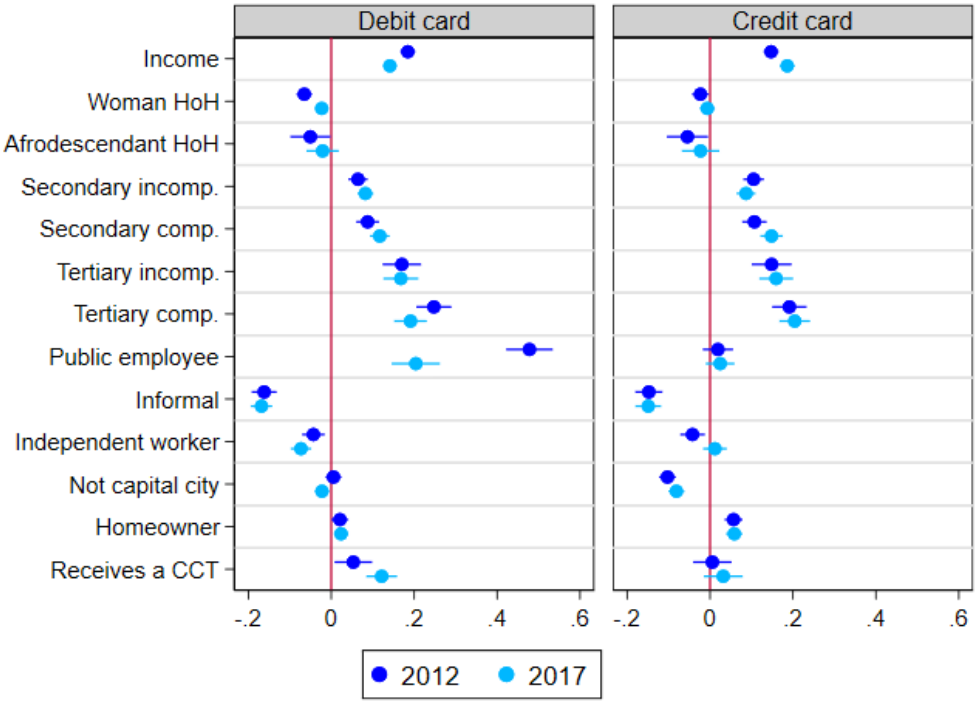


(c) 2017



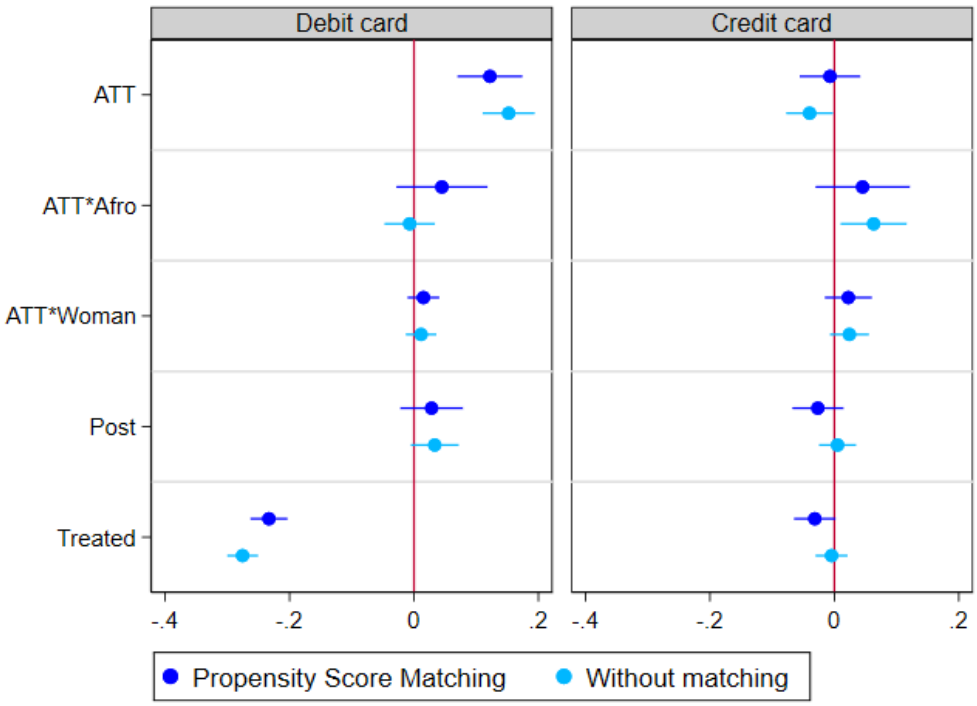
Source: Own elaboration based on Global Financial Inclusion (Findex) Dataset. *Notes:* (a) Findex complies nationally representative surveys in over 140 countries. (b) We use the three waves of the database, that correspond to the years 2011, 2014 and 2017.

Figure 4: Average Marginal Effects after Biprobit estimations for the probability of holding debit and credit cards (2012 and 2017).



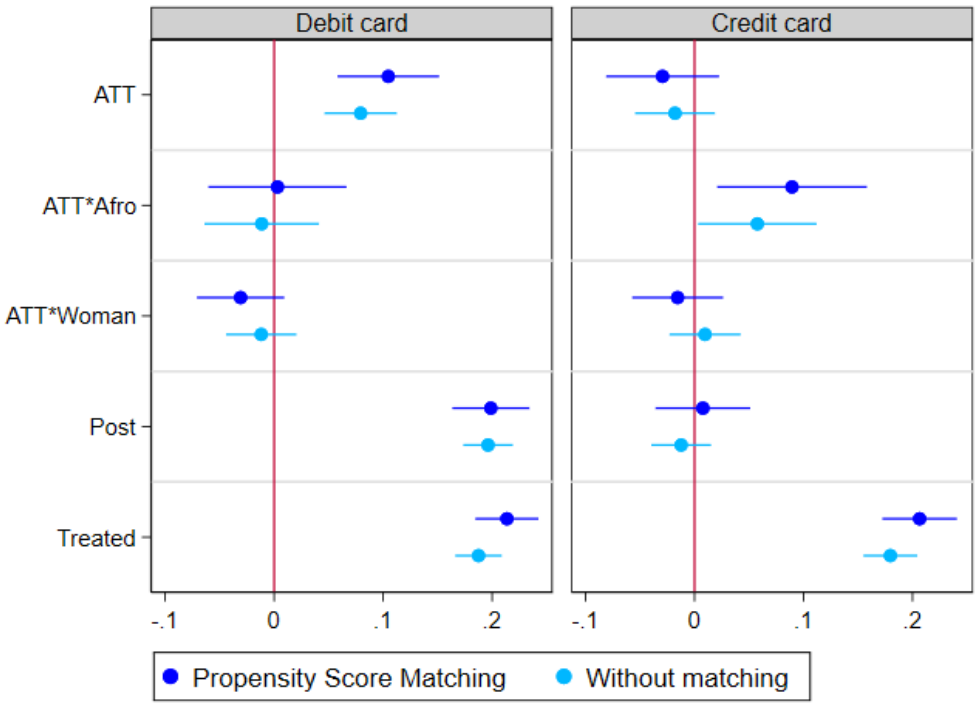
Source: Authors' estimations based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017. *Note:* Each point indicates the Average Marginal Effect of each variable on the probability of having debit or credit cards, while the straight line indicates the 95% confidence interval of the estimation.

Figure 5: Average Marginal Effects after biprobit: Diff in Diff estimation (Treated group: Private employees. Control group: Public employees)



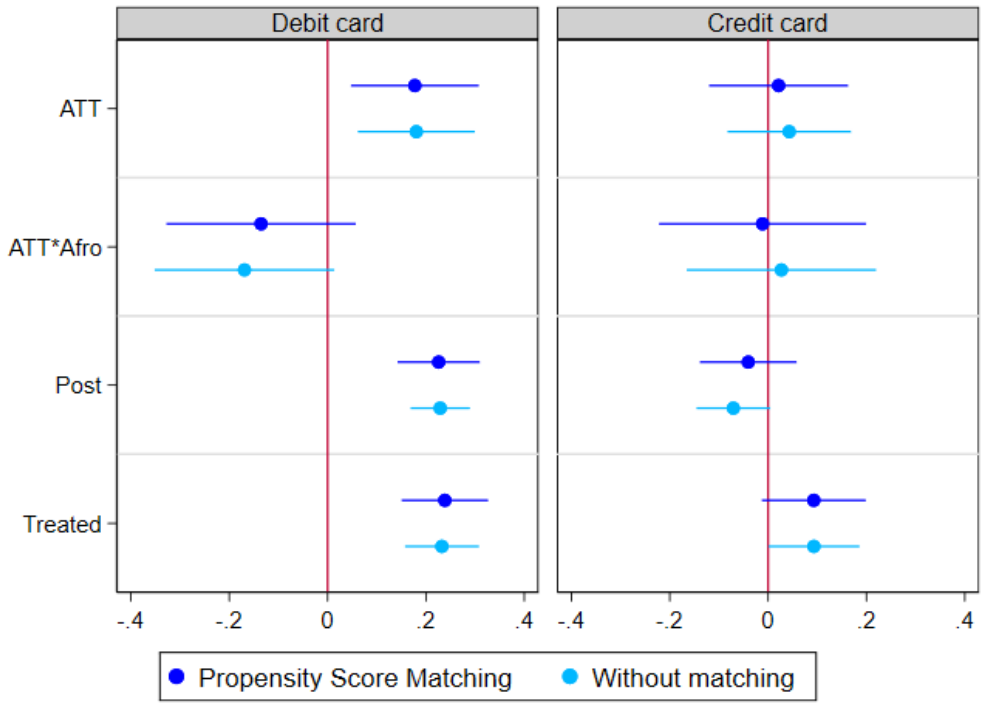
Source: Authors' estimations based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017. *Notes:* (a)Figures are the point estimates and 95% confidence intervals for the diff-in-diff on the proportion of people who has debit and credit cards in Uruguay, relative to the control group. (b) ATT captures de impact of the FIL on private employees, the group that was directly affected by the FIL while the control group includes public sector employees who receive their salaries through bank accounts since before the passage of the law. (c) Interaction with dummies indicating whether the person is Afro-descendant or female test for the presence of heterogeneous effects.

Figure 6: Average Marginal Effects after biprobit: Diff in Diff estimation (Treated group: Formal private employees. Control group: Informal private employees)



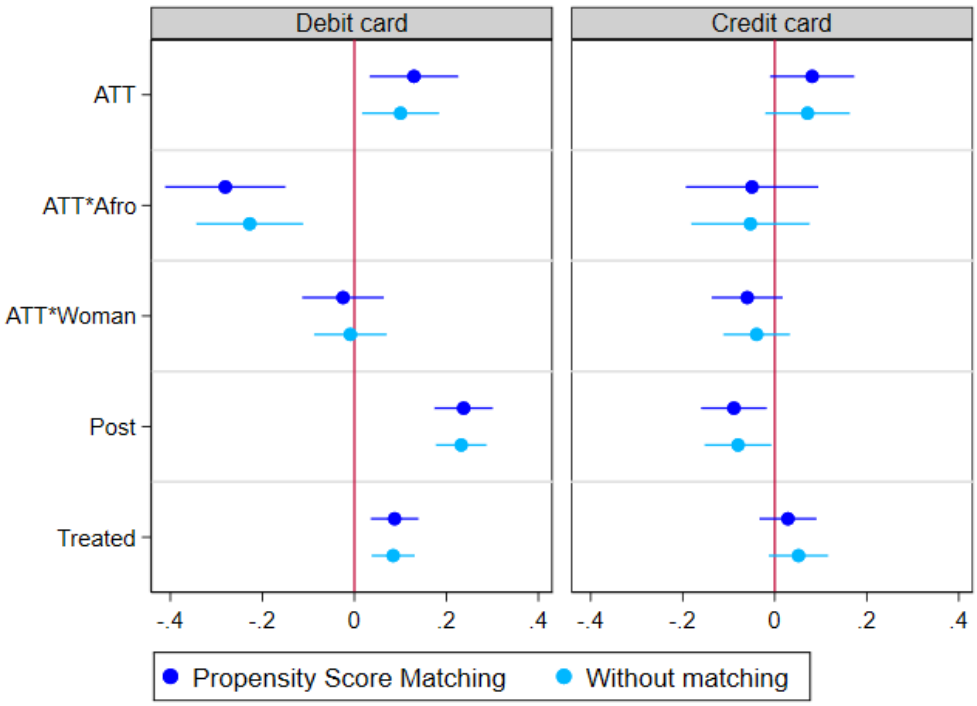
Source: Authors' estimations based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017. *Notes:* (a) Figures are the point estimates and 95% confidence intervals for the diff-in-diff on the proportion of people who has debit and credit cards in Uruguay, relative to the control group. (b) ATT captures de impact of the FIL on private employees, the group that was directly affected by the FIL while the control group includes informal workers for whom the law has no enforcement. (c) Interaction with dummies indicating whether the individual is Afro-descendant or female test for the presence of heterogeneous effects.

Figure 7: Average Marginal Effects after biprobit: Diff in Diff estimation (Treated group: Formal employees of firms in cleaning occupations. Control group: Housemaids)



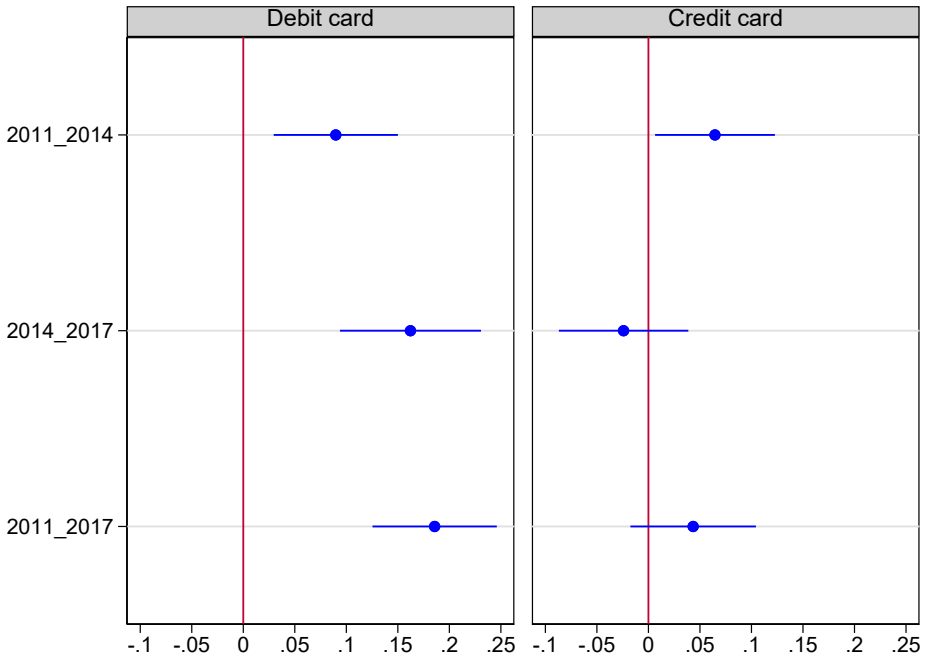
Source: Authors' estimations based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017. *Notes:* (a) Figures are the point estimates and 95% confidence intervals for the diff-in-diff on the proportion of people who has debit and credit cards in Uruguay, relative to the control group. (b) ATT captures de impact of the FIL on maids formally employed in hotels, offices and other enterprises, while the control group includes housemaids (to pay salary through bank accounts to housemaids became mandatory in 2018). (c) Interaction with a dummy indicates whether the individual is Afro-descendant test for the presence of heterogeneous effects.

Figure 8: Average Marginal Effects after biprobit: Diff in Diff estimation (Treated group: Towns with more than 5,000 inhabitants (no capital city). Control group: Towns with less than 5,000 inhabitants)



Source: Authors' estimations based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017. *Notes:* (a) Figures are the point estimates and 95% confidence intervals for the diff-in-diff on the proportion of people who has debit and credit cards in Uruguay, relative to the control group. (b) ATT captures de impact of the FIL on employees working in towns of 5,000 or more inhabitants relative to those working in towns of less than 5,000 inhabitants. (c) Interaction with a dummy indicates whether the individual is Afro-descendant or female test for the presence of heterogeneous effects.

Figure 9: Average Marginal Effects after biprobit: Diff in Diff estimation using similar countries as the control group.



Source: Authors' estimations based on Global Financial Inclusion (Findex) Dataset 2011, 2014 and 2017. *Notes:* (a) Figures are the point estimates and 95% confidence intervals for the diff-in-diff on the proportion of people who has debit and credit cards in Uruguay, relative to the control group. (b) The Control group is defined using a weighting procedure that considers the distance between Uruguay and all countries included in the Findex dataset in 2011. (c) Three relevant dimensions are considered to compute weights: percentage of debit and credit card holders and GDP per capita. (d) Included countries and respective weights are Chile 0.433, Argentina 0.240, Mexico 0.069, Montenegro 0.054, Malaysia 0.045, Brazil 0.038, Poland 0.034, Lebanon 0.033, Panama 0.030 y Dominican Republic 0.024.

Table 1: Interest rates for households (in percentage)

	July 2011		July 2014		July 2017		July 2021	
	Nominal	Real	Nominal	Real	Nominal	Real	Nominal	Real
Consumer credit (payroll lending) (UY $)	33.4	23.2	33.1	22.1	36.8	30.0	32.5	23.5
Consumer credit (non-payroll lending) (UY $)	60.0	47.8	64.3	50.7	74.5	65.8	55.8	45.2
Consumer credit (UY UI)	n.a.		n.a.		11.1	11.1	9.7	9.7
Credit card (UY $)	61.2	48.9	71.5	57.3	81.7	72.6	82.8	70.3
Credit card (USD)	13.3	23.1	12.2	24.3	7.6	12.2	6.3	5.8
Consumer price annual variation	8.2		9.1		5.2		7.3	
Depretiation rate UY $ vs USD	17.6		20.8		9.8		6.8	

Source: Own elaboration based on Central Bank of Uruguay.

Notes: (a) Payroll lending consists of personal loans for which principal and interest payments are directly deducted from the borrower's payroll or pension check. UY $ stands for Uruguayan pesos. UI is the Spanish acronym for "Unidades Indexadas", a Uruguayan CPI-linked unit of account. USD stands for U.S. dollars. (b) Includes public and private banks and financial firms in activity on each date. The BCU does not include credit companies in the financial statistics, where nominal interest rates for households reach about 131%.

Table 2: Descriptive statistics on debit card and credit card access, 2012 and 2017.

	2012			2017		
	Mean	Has debit card	Has credit card	Mean	Has debit card	Has credit card
All population		0.52	0.57		0.76	0.59
Also has debit card			0.67			0.89
Also has credit card		0.73			0.70	
Income						
1st quintile		0.23	0.35		0.55	0.30
2nd quintile		0.39	0.49		0.70	0.50
3rd quintile		0.53	0.58		0.77	0.61
4th quintile		0.66	0.66		0.84	0.72
5th quintile		0.79	0.79		0.91	0.83
Age head of household						
<20	0.00	0.22	0.21	0.00	0.47	0.15
20-34	0.18	0.56	0.61	0.17	0.82	0.57
35-49	0.28	0.57	0.63	0.29	0.82	0.63
50-64	0.27	0.54	0.60	0.27	0.80	0.65
65-79	0.19	0.42	0.51	0.19	0.65	0.54
≥ 80	0.07	0.39	0.34	0.07	0.49	0.39
Labor status						
Unemployed	0.07	0.29	0.44	0.08	0.64	0.43
Private employee	0.35	0.55	0.65	0.34	0.84	0.63
Public employee	0.12	0.98	0.75	0.11	0.99	0.80
Retired	0.26	0.40	0.47	0.27	0.64	0.52
Independent worker	0.20	0.43	0.51	0.20	0.68	0.56
Education level						
Elementary school	0.36	0.32	0.39	0.33	0.57	0.39
Secondary school incomplete	0.29	0.52	0.60	0.29	0.78	0.57
Secondary school complete	0.17	0.58	0.67	0.18	0.85	0.71
Higher education incomplete	0.07	0.83	0.77	0.07	0.92	0.76
Higher education complete	0.12	0.90	0.85	0.13	0.97	0.88
Location						
Montevideo (capital city)	0.44	0.57	0.67	0.41	0.82	0.70
Interior (not capital city)	0.56	0.48	0.50	0.59	0.71	0.51
Other characteristics						
Informal	0.19	0.28	0.38	0.18	0.58	0.40
Afro	0.04	0.33	0.46	0.04	0.67	0.48
Woman head of household	0.41	0.48	0.56	0.43	0.74	0.58
Homeowner	0.66	0.53	0.59	0.63	0.75	0.62
Receives salary in a bank account (out of total employees)	0.54	1.00	0.79	0.78	0.98	0.76
Observaciones	8,322	8,322	8,322	9,412	9,412	9,412

Source: Own elaboration based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017.

Table 3: Average Marginal Effects after Biprobit estimations for the probability of holding debit and credit cards, 2012 and 2017.

	2012			2017		
	Has debit card	Has credit card	Has debit and credit card	Has debit card	Has credit card	Has debit and credit card
	(1)	(2)	(3)	(4)	(5)	(6)
Monthly income per capita (log)	0.185***	0.147***	0.173***	0.142***	0.186***	0.194***
	(0.009)	(0.009)	(0.007)	(0.008)	(0.009)	(0.008)
Woman HoH	-0.065***	-0.023**	-0.047***	-0.023***	-0.007	-0.014*
	(0.010)	(0.010)	(0.008)	(0.008)	(0.009)	(0.008)
Age $<$ 20	-0.162**	-0.282***	-0.225***	-0.114**	-0.280***	-0.252***
	(0.072)	(0.080)	(0.059)	(0.058)	(0.101)	(0.082)
Age 20-34	0.015	-0.006	0.005	0.000	-0.064***	-0.047***
	(0.015)	(0.016)	(0.012)	(0.014)	(0.015)	(0.014)
Age 50-64	-0.018	-0.018	-0.019*	-0.034***	-0.013	-0.023**
	(0.013)	(0.014)	(0.011)	(0.012)	(0.013)	(0.012)
Age 65-79	-0.030	-0.052***	-0.042***	-0.101***	-0.071***	-0.093***
	(0.019)	(0.020)	(0.016)	(0.015)	(0.018)	(0.016)
Age $>$ 80	-0.076***	-0.212***	-0.144***	-0.244***	-0.237***	-0.272***
	(0.025)	(0.027)	(0.021)	(0.020)	(0.024)	(0.021)
Afrodescendant HoH	-0.050**	-0.055**	-0.054***	-0.021	-0.023	-0.025
	(0.025)	(0.025)	(0.020)	(0.020)	(0.023)	(0.020)
High school incomplete	0.064***	0.105***	0.086***	0.082***	0.087***	0.097***
	(0.012)	(0.013)	(0.010)	(0.010)	(0.012)	(0.010)
High school complete	0.088***	0.107***	0.100***	0.117***	0.148***	0.156***
	(0.014)	(0.015)	(0.011)	(0.012)	(0.014)	(0.012)
Tertiary incomplete	0.170***	0.149***	0.166***	0.168***	0.159***	0.184***
	(0.024)	(0.025)	(0.019)	(0.022)	(0.021)	(0.019)
Tertiary complete	0.248***	0.191***	0.229***	0.191***	0.204***	0.227***
	(0.022)	(0.021)	(0.017)	(0.020)	(0.019)	(0.017)
Unemployed	-0.118***	-0.138***	-0.131***	-0.129***	-0.111***	-0.134***
	(0.021)	(0.022)	(0.017)	(0.016)	(0.019)	(0.017)
Public employee	0.478***	0.019	0.274***	0.204***	0.025	0.099***
	(0.029)	(0.019)	(0.019)	(0.030)	(0.018)	(0.018)
Informal worker	-0.162***	-0.148***	-0.160***	-0.168***	-0.149***	-0.177***
	(0.015)	(0.017)	(0.013)	(0.013)	(0.016)	(0.014)
Independent worker	-0.043***	-0.042***	-0.044***	-0.073***	0.012	-0.020
	(0.014)	(0.015)	(0.011)	(0.013)	(0.015)	(0.013)
Not capital city	0.005	-0.103***	-0.046***	-0.022**	-0.081***	-0.069***
	(0.010)	(0.010)	(0.008)	(0.009)	(0.010)	(0.009)
Homeowner	0.021**	0.057***	0.039***	0.024***	0.059***	0.053***
	(0.010)	(0.011)	(0.008)	(0.009)	(0.010)	(0.009)
Receives CCT	0.053**	0.006	0.032*	0.122***	0.032	0.072***
	(0.023)	(0.024)	(0.018)	(0.019)	(0.024)	(0.020)
Observations	8,212	8,212	8,212	9,295	9,295	9,295

Source: Authors' estimations based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017.

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Average Marginal Effects after biprobit: Diff in Diff estimation (Treated group: Private employees. Control group: Public employees)

	Has debit card	Has credit card	Has debit and credit card
ATT	0.122***	-0.007	0.066***
	(0.027)	(0.025)	(0.024)
ATT*Afro	0.045	0.045	0.064**
	(0.037)	(0.039)	(0.030)
ATT*Woman	0.015	0.023	0.028
	(0.013)	(0.019)	(0.018)
Post	0.028	-0.027	-0.005
	(0.026)	(0.021)	(0.021)
Treated	-0.233***	-0.031*	-0.163***
	(0.015)	(0.017)	(0.015)
Monthly income per capita (log)	0.091***	0.178***	0.201***
	(0.007)	(0.011)	(0.010)
Afrodescendant	-0.049	-0.042	-0.064***
	(0.034)	(0.031)	(0.021)
Woman	-0.020**	0.015	0.001
	(0.010)	(0.015)	(0.014)
Age 20-34	-0.008	-0.028**	-0.027**
	(0.010)	(0.014)	(0.012)
Age 50-64	-0.020**	-0.035***	-0.041***
	(0.009)	(0.014)	(0.013)
Age 65-79	-0.066**	-0.095**	-0.117***
	(0.026)	(0.041)	(0.037)
High school incomplete	0.059***	0.056***	0.081***
	(0.014)	(0.017)	(0.014)
High school complete	0.070***	0.098***	0.122***
	(0.015)	(0.019)	(0.016)
Tertiary incomplete	0.117***	0.119***	0.167***
	(0.019)	(0.023)	(0.020)
Tertiary complete	0.172***	0.130***	0.208***
	(0.021)	(0.022)	(0.021)
Not capital city	-0.020**	-0.069***	-0.069***
	(0.010)	(0.012)	(0.011)
Observations	11,486	11,486	11,486

Source: Authors' estimations based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017.

*** p<0.01, ** p<0.05, * p<0.1.

Notes: (a) ATT captures de impact of the FIL on private employees, the group that was directly affected by the FIL, while the control group includes public sector employees who receive their salaries through bank accounts since before the passage of the law. (b) Interaction with dummies indicating whether the person is Afro-descendant or female test for the presence of heterogeneous effects.

Table 5: Balance test (Treated group: Private employees. Control group: Public employees)

	Without matching			After PS matching		
	Mean Control	Mean Treated	Diff	Mean Control	Mean Treated	Diff
Debit card	0.972	0.639	-0.333***	0.964	0.648	-0.317***
credit card	0.776	0.714	-0.063***	0.745	0.724	-0.022*
Monthly income per capita (log)	9.646	9.449	-0.197***	9.483	9.461	-0.023
Afrodescendant	0.090	0.089	-0.001	0.073	0.079	0.006
Woman	0.535	0.457	-0.078***	0.427	0.452	0.025*
Age 20-34	0.257	0.427	0.17***	0.409	0.418	0.009
Age 50-64	0.328	0.208	-0.12***	0.207	0.207	0.000
Age 65-79	0.024	0.016	-0.008**	0.02	0.017	-0.004
High school incomplete	0.238	0.367	0.129***	0.404	0.379	-0.025**
High school complete	0.196	0.212	0.017	0.201	0.216	0.014
Tertiary incomplete	0.138	0.114	-0.024***	0.119	0.117	-0.002
Tertiary complete	0.336	0.104	-0.233***	0.105	0.105	0.000
Not capital city	0.571	0.519	-0.052***	0.512	0.524	0.012

Source: Authors' estimations based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017.

*** p<0.01, ** p<0.05, * p<0.1.

Table 6: Average Marginal Effects after biprobit: Diff in Diff estimation (Treated group: Formal private employees. Control group: Informal private employees)

	Has debit card	Has credit card	Has debit and credit card
ATT	0.105***	-0.029	0.039*
	(0.024)	(0.026)	(0.022)
ATT*Afro	0.003	0.089**	0.054*
	(0.032)	(0.035)	(0.029)
ATT*Woman	-0.031	-0.015	-0.026
	(0.020)	(0.021)	(0.018)
Post	0.199***	0.008	0.112***
	(0.018)	(0.022)	(0.018)
Treated	0.214***	0.207***	0.237***
	(0.015)	(0.017)	(0.014)
Monthly income per capita (log)	0.176***	0.170***	0.195***
	(0.011)	(0.013)	(0.011)
Afrodescendant	-0.009	-0.080***	-0.052**
	(0.021)	(0.026)	(0.021)
Woman	0.022	0.049***	0.041***
	(0.014)	(0.016)	(0.013)
Age 20-34	0.023	-0.010	0.006
	(0.014)	(0.015)	(0.013)
Age 50-64	-0.034**	-0.025	-0.033**
	(0.015)	(0.017)	(0.014)
Age 65-79	-0.052*	-0.052**	-0.059**
	(0.027)	(0.026)	(0.023)
High school incomplete	0.091***	0.074***	0.093***
	(0.013)	(0.015)	(0.012)
High school complete	0.118***	0.154***	0.154***
	(0.016)	(0.018)	(0.016)
Tertiary incomplete	0.235***	0.170***	0.227***
	(0.026)	(0.029)	(0.024)
Tertiary complete	0.303***	0.268***	0.321***
	(0.036)	(0.035)	(0.030)
Not capital city	-0.023*	-0.053***	-0.044***
	(0.012)	(0.013)	(0.011)
Observations	11,863	11,863	11,863

Source: Authors' estimations based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017.

*** p<0.01, ** p<0.05, * p<0.1.

Notes: (a) ATT captures de impact of the FIL on private employees, the group that was directly affected by the FIL, while the control group includes informal workers for whom the law has no enforcement. (b) Interaction with dummies indicating whether the individual is Afro-descendant or female test for the presence of heterogeneous effects.

Table 7: Balance test (Treated group: Formal private employees. Control group: Informal private employees)

	Without matching			After PS matching		
	Mean Control	Mean Treated	Diff	Mean Control	Mean Treated	Diff
Debit card	0.211	0.607	0.396***	0.346	0.609	0.263***
credit card	0.343	0.695	0.352***	0.479	0.699	0.219***
Monthly income per capita (log)	8.937	9.421	0.484***	9.441	9.418	-0.023
Afrodescendant	0.148	0.091	-0.057***	0.093	0.09	-0.003
Woman	0.445	0.455	0.011	0.422	0.448	0.026**
Age 20-34	0.265	0.423	0.158***	0.376	0.415	0.039***
Age 50-64	0.281	0.209	-0.072***	0.227	0.212	-0.015
Age 65-79	0.147	0.017	-0.129***	0.019	0.018	-0.001
High school incomplete	0.326	0.368	0.041***	0.395	0.364	-0.031**
High school complete	0.141	0.212	0.072***	0.216	0.213	-0.003
Tertiary incomplete	0.034	0.110	0.076***	0.098	0.11	0.013
Tertiary complete	0.023	0.095	0.072***	0.068	0.094	0.027***
Not capital city	0.689	0.523	-0.165***	0.554	0.52	-0.034**

Source: Authors' estimations based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017.

*** p<0.01, ** p<0.05, * p<0.1.

Table 8: Average Marginal Effects after biprobit: Diff in Diff estimation (Treated group: Formal employees of firms in cleaning occupations. Control group: Housemaids)

	Has debit card	Has credit card	Has debit and credit card
ATT	0.177***	0.021	0.103*
	(0.066)	(0.072)	(0.054)
ATT*Afro	-0.135	-0.011	-0.075
	(0.098)	(0.107)	(0.082)
Post	0.226***	-0.040	0.092**
	(0.043)	(0.050)	(0.037)
Treated	0.238***	0.093*	0.174***
	(0.045)	(0.054)	(0.039)
Monthly income per capita (log)	0.174***	0.277***	0.246***
	(0.032)	(0.034)	(0.027)
Afrodescendant	-0.037	0.028	-0.003
	(0.050)	(0.058)	(0.042)
Age 20-34	-0.029	-0.014	-0.023
	(0.038)	(0.044)	(0.032)
Age 50-64	-0.055	0.009	-0.023
	(0.039)	(0.043)	(0.032)
Age 65-79	-0.248**	-0.104	-0.185**
	(0.104)	(0.114)	(0.092)
High school incomplete	0.085***	0.043	0.068**
	(0.033)	(0.037)	(0.028)
High school complete	0.023	0.090	0.063
	(0.054)	(0.062)	(0.043)
Tertiary incomplete	0.317**	0.110	0.224
	(0.158)	(0.164)	(0.154)
Not capital city	0.015	-0.043	-0.017
	(0.032)	(0.036)	(0.026)
Observations	969	969	969

Source: Authors' estimations based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017.

*** p<0.01, ** p<0.05, * p<0.1.

Notes: (a) ATT captures de impact of the FIL on maids formally employed in hotels, offices and other enterprises, while the control group includes housemaids (to pay salary through bank accounts to housemaids became mandatory in 2018). (b) Interaction with a dummy indicates whether the individual is Afro-descendant test for the presence of heterogeneous effects.

Table 9: Balance test (Treated group: Formal employees of firms in cleaning occupations. Control group: Housemaids)

	Without matching			After PS matching		
	Mean Control	Mean Treated	Diff	Mean Control	Mean Treated	Diff
Debit card	0.283	0.503	0.22***	0.312	0.514	0.201***
credit card	0.521	0.573	0.052	0.586	0.568	-0.018
Monthly income per capita (log)	8.964	9.038	0.073	9.043	9.036	-0.007
Afrodescendant	0.162	0.164	0.001	0.161	0.163	0.002
Age 20-34	0.210	0.363	0.152***	0.343	0.355	0.012
Age 50-64	0.325	0.205	-0.12***	0.211	0.199	-0.012
Age 65-79	0.067	0.006	-0.061***	0.004	0.005	0.002
High school incomplete	0.398	0.439	0.041	0.447	0.445	-0.002
High school complete	0.112	0.099	-0.012	0.111	0.112	0.001
Tertiary incomplete	0.016	0.006	-0.01	0.006	0.007	0.000
Tertiary complete	0.336	0.104	-0.233***	0.105	0.105	0.000
Not capital city	0.664	0.532	-0.132***	0.542	0.55	0.007

Source: Authors' estimations based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017.

*** p<0.01, ** p<0.05, * p<0.1.

Notes: (a) ATT captures de impact of the FIL on employees working in towns of 5,000 or more inhabitants relative to those working in towns of less than 5,000 inhabitants. (c) Interaction with a dummy indicates whether the individual is Afro-descendant or female test for the presence of heterogeneous effects.

Table 10: Average Marginal Effects after biprobit: Diff in Diff estimation (Treated group: Formal private employees in towns with more than 5,000 inhabitants (no capital city). Control group: Towns with less than 5,000 inhabitants)

	Has debit card	Has credit card	Has debit and credit card
ATT	0.129***	0.081*	0.142***
	(0.049)	(0.047)	(0.050)
ATT*Afro	-0.281***	-0.049	-0.222***
	(0.067)	(0.073)	(0.073)
ATT*Woman	-0.025	-0.060	-0.057
	(0.045)	(0.039)	(0.045)
Post	0.237***	-0.089**	0.099***
	(0.032)	(0.036)	(0.035)
Treated	0.087***	0.029	0.078***
	(0.027)	(0.032)	(0.029)
Monthly income per capita (log)	0.179***	0.273***	0.306***
	(0.022)	(0.024)	(0.023)
Afrodescendant	0.147***	0.050	0.133***
	(0.042)	(0.052)	(0.049)
Woman	0.012	0.045*	0.039
	(0.025)	(0.027)	(0.026)
Age 20-34	0.002	-0.012	-0.007
	(0.026)	(0.025)	(0.026)
Age 50-64	-0.013	-0.085***	-0.066**
	(0.032)	(0.030)	(0.031)
Age 65-79	-0.106**	-0.017	-0.083
	(0.054)	(0.056)	(0.056)
High school incomplete	0.000	0.052*	0.035
	(0.026)	(0.026)	(0.026)
High school complete	0.023	0.120***	0.097***
	(0.034)	(0.033)	(0.034)
Tertiary incomplete	0.149**	0.167***	0.213***
	(0.067)	(0.053)	(0.062)
Tertiary complete	0.250**	0.150**	0.270***
	(0.099)	(0.076)	(0.086)
Observations	2,148	2,148	2,148

Source: Authors' estimations based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017.

*** p<0.01, ** p<0.05, * p<0.1.

Table 11: Balance test (Treated group: Formal private employees in towns with more than 5,000 inhabitants (no capital city). Control group: Towns with less than 5,000 inhabitants)

	Without matching			After PS matching		
	Mean Control	Mean Treated	Diff	Mean Control	Mean Treated	Diff
Debit card	0.500	0.610	0.11***	0.556	0.613	0.057***
credit card	0.534	0.678	0.144***	0.614	0.68	0.066***
Monthly income per capita (log)	9.172	9.319	0.147***	9.312	9.31	-0.002
Afrodescendant	0.096	0.081	-0.015	0.086	0.081	-0.005
Woman	0.521	0.522	0.002	0.51	0.51	0.000
Age 20-34	0.375	0.383	0.008	0.382	0.375	-0.008
Age 50-64	0.253	0.233	-0.021	0.233	0.235	0.002
Age 65-79	0.067	0.057	-0.01	0.055	0.057	0.002
High school incomplete	0.364	0.385	0.021	0.379	0.386	0.007
High school complete	0.144	0.205	0.061***	0.207	0.202	-0.005
Tertiary incomplete	0.047	0.071	0.024**	0.064	0.069	0.005
Tertiary complete	0.062	0.085	0.023*	0.083	0.086	0.003

Source: Author's estimations based on *Encuesta Financiera de los Hogares Uruguayos* 2012 and 2017.

*** p<0.01, ** p<0.05, * p<0.1.

Table 12: Average Marginal Effects after biprobit: Diff in Diff estimation using similar countries as the control group.

	2011-2014			2014-2017			2011-2017		
	Has debit card	Has credit card	Has debit and credit card	Has debit card	Has credit card	Has debit and credit card	Has debit card	Has credit card	Has debit and credit card
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Post year*Uruguay	0.090***	0.065**	0.061***	0.162***	-0.024	0.033	0.186***	0.043	0.079***
	(0.031)	(0.030)	(0.021)	(0.035)	(0.032)	(0.025)	(0.031)	(0.031)	(0.022)
Post year*Uruguay*Female	-0.084***	-0.003	-0.031	-0.059	0.045	0.010	-0.051	0.041	0.006
	(0.032)	(0.031)	(0.021)	(0.039)	(0.036)	(0.027)	(0.034)	(0.033)	(0.023)
Post year	0.162***	0.048***	0.079***	-0.003	-0.012	-0.008	0.185***	0.036**	0.075***
	(0.016)	(0.017)	(0.011)	(0.019)	(0.019)	(0.014)	(0.016)	(0.018)	(0.012)
Uruguay	-0.106***	0.084***	0.000	-0.072***	0.156***	0.073***	-0.107***	0.082***	0.010
	(0.018)	(0.018)	(0.012)	(0.019)	(0.017)	(0.013)	(0.018)	(0.018)	(0.013)
Female	-0.015	0.027	0.007	-0.081***	-0.007	-0.028**	-0.014	0.030	0.011
	(0.017)	(0.018)	(0.012)	(0.019)	(0.017)	(0.014)	(0.017)	(0.018)	(0.013)
Post year*Female	-0.012	-0.031	-0.018	0.079***	0.015	0.032*	0.016	-0.017	-0.004
	(0.022)	(0.024)	(0.016)	(0.026)	(0.025)	(0.019)	(0.023)	(0.025)	(0.017)
Age	0.002***	0.003***	0.002***	0.002***	0.004***	0.003***	0.001***	0.003***	0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Secondary education	0.148***	0.124***	0.108***	0.169***	0.151***	0.141***	0.143***	0.134***	0.113***
	(0.014)	(0.015)	(0.010)	(0.016)	(0.015)	(0.012)	(0.014)	(0.016)	(0.011)
Tertiary education or more	0.333***	0.278***	0.242***	0.360***	0.282***	0.275***	0.323***	0.253***	0.230***
	(0.020)	(0.019)	(0.014)	(0.024)	(0.021)	(0.017)	(0.022)	(0.021)	(0.015)
Quintile 2	0.034	0.042*	0.031**	0.054**	0.062***	0.053***	0.052**	0.082***	0.058***
	(0.021)	(0.023)	(0.015)	(0.023)	(0.023)	(0.017)	(0.021)	(0.024)	(0.016)
Quintile 3	0.041**	0.072***	0.047***	0.076***	0.109***	0.088***	0.076***	0.101***	0.076***
	(0.020)	(0.021)	(0.014)	(0.022)	(0.022)	(0.017)	(0.021)	(0.023)	(0.015)
Quintile 4	0.125***	0.159***	0.115***	0.152***	0.158***	0.140***	0.162***	0.171***	0.139***
	(0.020)	(0.021)	(0.014)	(0.022)	(0.021)	(0.016)	(0.020)	(0.021)	(0.015)
Quintile 5	0.210***	0.200***	0.164***	0.232***	0.216***	0.198***	0.236***	0.247***	0.200***
	(0.019)	(0.020)	(0.013)	(0.022)	(0.021)	(0.016)	(0.020)	(0.021)	(0.014)
Observations	25,595	25,595	25,595	25,468	25,468	25,468	25,493	25,493	25,493

Source: Authors' estimations based on Global Financial Inclusion (Findex) Dataset 2011, 2014 and 2017.

*** p<0.01, ** p<0.05, * p<0.1.

Notes: (a) The coefficient of "Post year*Uruguay" can be interpreted as the ATT from a diff-in-diff approach. The Control group is defined using a weighting procedure that considers the distances between Uruguay and all countries included in the Findex dataset in 2011, 2014 and 2017. (b) Three dimensions are considered to measure such distances: percentage of debit and credit card holders and GDP per capita. (c) Included countries and respective weights are Chile 0.397, Argentina 0.224, Mexico 0.071, Montenegro 0.056, Malaysia 0.047, Brazil 0.037, Lebanon 0.035, Poland 0.034, Panama 0.032, Dominican Republic 0.026, Botswana 0.023 and Colombia 0.017.

Table 13: Average Marginal Effects after biprobit: Diff in Diff estimation using alternative sets of countries as the control group.

	Has debit card	Has credit card	Has debit and credit card	Observations	Countries and weights
Preferred Weights (1)	0.186***	0.043	0.079***	25,493	Chile 0.397, Argentina 0.224, Mexico 0.071 Montenegro 0.056, Malaysia 0.047, Brazil 0.037 Lebanon 0.035, Poland 0.034, Panama 0.032 Dominican Republic 0.026, Botswana 0.024, Colombia 0.017
Similar countries without weights (2)	0.192***	0.019	0.048***	25,493	
All countries without weights (3)	0.261***	0.026	0.058***	295,713	
High income (4)	0.047	0.041	0.036	7,794	Poland 0.849, Greece 0.103, Saudi Arabia 0.048
Latin American (5)	0.202***	0.053	0.091***	17,814	Chile 0.485, Argentina 0.275, Mexico 0.087 Brazil 0.046, Panama 0.040 Dominican Republic 0.031, Colombia 0.021, Peru 0.016
Latin American without referenced financial inclusion measures (6)	0.185***	0.049	0.084***	11,881	Chile 0.573, Argentina 0.325, Mexico 0.083 Brazil 0.047, Panama 0.046 Dominican Republic 0.037, Peru 0.018
Only debit & credit card (7)	0.157***	0.033	0.064***	40,987	Chile 0.226, Argentina 0.134, Singapore 0.075 Montenegro 0.062, Ukraine 0.055, Mexico 0.049, Italy 0.046, Dominican Republic 0.040, Greece 0.039 Lebanon 0.035, Malaysia 0.033, Botswana 0.028 Albania 0.026, Panama 0.024, Ecuador 0.024 Peru 0.022, Brazil 0.021, Macedonia 0.020 Colombia 0.020, Poland 0.019
Debit & credit card plus Tertiary education (8)	0.161***	0.043	0.071***	27,522	Chile 0.177, Argentina 0.141 Montenegro 0.133, Greece 0.098, Italy 0.092 Singapore 0.079, Ecuador 0.059, Peru 0.056 Macedonia 0.052, Brazil 0.04, Albania 0.03 Botswana 0.026, Guatemala 0.017

Source: Authors' estimations based on Global Financial Inclusion (Findex) Dataset 2011, 2014 and 2017.

*** p<0.01, ** p<0.05, * p<0.1.

Notes: (a) Figures correspond to the APE of the covariate "Post year*Uruguay" in each model from alternatives groups of countries and weights. (b) In rows 1,2,4 and 5 countries are selected and weights are computed taking into account three relevant dimensions: percentage of debit and credit card holders and GDP per capita. Results in row (1) are those already reported in Table 12. Row (2) uses the same countries as in (1) but without weighting, row (3) uses all 191 countries of Findex without weighting, row (4) select the Control group within High Income countries, row (5) selects the Control group within Latin American countries, row (6) selection is done by considering the distance only in the dimensions of percentages of debit and credit card holders, row (7) selection is done by considering the distance in the dimensions of percentages of debit and credit card holders plus the proportion of the population that has tertiary education.

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