

Consumer Homing on Payment Cards: From Theory to Measurement*

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August 2007

DRAFT, VERY PRELIMINARY

ABSTRACT

Consumer “homing” behavior matters greatly in theories of payment card platforms as two-sided markets. But payment card homing is rarely measured in practice. Moving from theory to measurement requires defining what types of multi-homing, and whose multi-homing, matter. We highlight several related issues and present an extensive set of new results on multi-homing prevalence and trends. On balance we find that multi-homing is more prevalent than single-homing, particularly if one counts substitution between credit and debit cards as multi-homing. Multi-homing trends vary across different measures, and the dramatic rise in households using both credit and debit cards is especially noteworthy.

Other keywords: retail payments, retail banking, household finance, survey measurement, data quality

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I. Introduction

“We need to figure out empirically whether the case of single-homing or that of multi-homing is more descriptive”

- Rochet and Tirole (2006a), p. 13.

Consumer “homing” behavior matters greatly in theories of payment card platforms as two-sided markets. In Guthrie and Wright (2007) variation in the extent to which consumers use multiple platforms can produce a full range of price equilibria. When consumers always multi-home, platform competition pushes the interchange fee-- the marginal price that the platform charges merchants-- down to the socially optimal level. Otherwise the equilibrium fee is too high. Consumer homing also impacts equilibrium prices in Rochet and Tirole (2003), and in some versions of the model (Rochet and Tirole 2006a) multi-homing produces interchange fees that are socially too low.

But consumer payment homing is rarely measured in practice. Consequently the empirical question raised in the introductory quote-- whether single-homing or multi-homing is more descriptive-- remains open. Rysman (2007) finds prevalent multi-homing in credit card network membership, but infrequent multi-homing in credit card network usage, using data from the Visa Payment Systems Panel Study (PSPS). We expand on Rysman’s work using complementary data from the 1992-2004 Surveys of Consumer Finances (SCFs).¹ Our objective is to measure multi-homing in ways that inform theoretical models and related policy analysis.² Moving from theory to measurement highlights several issues for theorists, empiricists, and regulators interested in payment card platforms.

¹ Klee (2006) also uses SCF data to explore consumer payment multi-homing, but considers payment media more broadly (whereas we consider payment cards only). Klee also focuses on identifying the determinants of multi-homing (whereas we simply describe the prevalence of multi-homing and discuss implications for theory).

² [recent policy actions/issues here].

One critical issue is whether multi-homing on credit cards is distinct from multi-homing on credit and debit. In theoretical models credit and signature debit are typically assumed to be homogenous payment devices; in reality they seem to be increasingly close but not necessarily perfect substitutes (Zinman 2007a). We present new evidence on multi-homing on credit and debit and find high prevalence that has been increasing over time.

A second definitional issue is whether to define multi-homing based on actual or potential card use. Theories have focused on the latter, with Rochet and Tirole (2006b) stating explicitly: “What matters here is membership multi-homing rather than usage multi-homing.” But the “single-homing index” in Rochet and Tirole (2003) highlights the more general importance of consumer willingness (and/or ability) to substitute across networks (or more broadly across payment media). Low actual multi-homing may indicate low substitutability. So we present evidence on both potential and actual multi-homing. Notably we find that multi-homing on credit and debit is prevalent in actual as well as potential terms.

A third issue is whose homing behavior matters. Both broad and narrow groups of consumers are relevant. Theorists and policymakers are often interested in the entire population of consumers, since platform pricing can impact the prices of final goods faced by consumers who do not own or use cards. But for other applications card users may be the marginal consumers and hence the agents of greatest interest. We report estimates of multi-homing prevalence for groups ranging from the entire U.S. population to card users. We find that while multi-homing was far more prevalent among card users

at the beginning of our sample period, relatively strong growth in the population at-large had generally narrowed the gap by 2004.

A final issue is how homing behavior is changing over time. Trends may be of particular interest to policymakers and regulators. We find that multi-homing has changed substantially over 1992-2004 for many definition*sample combinations. The rise in multi-homing in credit and debit usage has been especially dramatic.

In all, the available evidence suggests that multi-homing is a better description of consumer payment card choices than single-homing, particularly if one considers households that use both credit and debit as multi-homers. But we find that potential multi-homing on credit cards is substantially less prevalent in the SCF than the PSPS. Also the results vary across the many definition*sample combinations, and data limitations preclude measuring yet more combinations that may be important. This suggests the need for additional data collection and modeling that homes in on what types of multi-homing, and whose multi-homing, matter most.

Section II outlines the importance of consumer multi-homing in theory, and details the issues that arise when moving from theory to measurement. Section III describes the SCF and its strengths and weaknesses relative to the PSPS, and estimates the prevalence of consumer payment card multi-homing under many different definition*sample combinations. Section IV interprets the results and highlights some directions for further research.

II. Multi-homing: From Theory to Measurement

A. Consumer Multi-Homing in Theory

We start by briefly outlining the role and implications of consumer (a.k.a. “buyer”) homing behavior in theoretical models of payment card networks as two-sided markets.³ We focus on models that are meant to describe payment card platforms in particular,⁴ and where consumer homing behavior is allowed to vary.⁵ The relevant models have focused on how platforms set prices (interchange fees),⁶ and on the conditions under which prices will be socially efficient.

Models of competing payment platforms suggest that the extent of consumer multi-homing is important. In Rochet and Tirole (2006a) interchange fees are too high under single-homing and too low under multi-homing. More generally, in Rochet and Tirole (2003) “the impact of platform competition on price structure depends on the fine characteristics of the demand functions of final users”.⁷ High consumer substitutability across platforms, captured in part by a low “single-homing index”, creates an incentive for platforms to steer *sellers* (a.k.a. merchants, who are faced with the choice of accepting a card/platform or not), thereby putting downward pressure on interchange fees.⁸ In

³ For more general reviews of the theory of payment networks see, e.g., Chakravorti (2003) and Hunt (2003).

⁴ So, e.g., we do not consider Armstrong (2006). Although in this model “It makes a significant difference to outcomes whether groups single-home or multi-home” (p. 669), the model’s assumptions on tariffs and costs are not meant to fit card platforms (p. 671).

⁵ So, e.g., we do not consider Chakravorti and Roson (2006), where consumers are assumed to single-home (p. 123).

⁶ Rochet and Tirole (2006c) finds that multi-homing (or more specifically the degree of substitutability between debit and credit) is also a critical determinant of the welfare effects of the Honor-All-Cards (HAC) rule. Proposition 9 in that paper finds that the HAC rule may decrease welfare when credit and debit are strong substitutes (and the total profit margin of banks is large).

⁷ Pp. 26-28 of Rochet and Tirole (2006b) provides a nice summary of the importance of multi-homing in their 2003 model.

⁸ Sometimes overlooked is that higher elasticities of consumer demand may induce price competition for consumers, putting upward pressure on interchange fees and making the net effect of consumer substitutability on prices in Rochet and Tirole (2003) ambiguous.

Guthrie and Wright (2007) variation in homing can produce a full range of price equilibria. When consumers always multi-home, competition between payment schemes lowers interchange fees all the way to the socially optimal level. Otherwise the equilibrium still contains some upward bias (p. 51).

Thus consumer multi-homing has different welfare effects in the Rochet and Tirole and Guthrie and Wright models, but is critical in either setup. This motivates developing empirical evidence on multi-homing that will inform theoretical modeling and policy analysis.

B. From Theory to Measurement: Definitional and Sampling Issues

Providing evidence that speaks to the models requires attention to several conceptual and technical issues regarding the measurement of multi-homing.

First, *how exactly should we define multi-homing?*

One related issue is whether multi-homing in credit cards is distinct from multi-homing across credit and debit. In theoretical models credit and signature debit are typically assumed to be homogenous payment devices; in reality they are probably increasingly close but not necessarily perfect substitutes (Zinman 2007a). Moreover theory has yet to incorporate the complications introduced by PIN (“online”) debit, where there are additional platforms, consumers are relatively captive (e.g., nearly all ATM cards are compatible with the Visa and MasterCard platforms), and merchants must be induced to install costly PIN terminals (Rochet and Tirole 2003).⁹

⁹ [a bit here on online vs. offline debit, diffusion of PIN terminals and signature/offline/check cards, and hence virtually identical acceptance].

A second definitional issue is whether to define multi-homing based on actual or potential use. One important definition of potential multi-homing is the ownership of cards from multiple networks. Guthrie and Wright and Rochet and Tirole both emphasize this definition, with Rochet and Tirole (2006b) stating explicitly: “What matters here is membership multi-homing rather than usage multi-homing.” But the “single-homing index” in Rochet and Tirole (2003) highlights the more general importance of consumer willingness (and/or ability) to substitute across networks (or more broadly across payment media). Low actual multi-homing may indicate low substitutability. So below we present evidence on both potential and actual multi-homing, following and expanding on Rysman (2007).

Another question that arises in moving from theory to measurement is: *whose homing behavior matters?*

Rochet and Tirole and Guthrie and Wright take the natural approach of considering all consumers. The models assume that holding a card is costless, and that all consumers hold cards (or are indifferent between holding and not). But in practice payment cards are rationed due to credit risk and fixed costs.¹⁰ More generally substitutability might be different for those with and without cards, and for card users and non-users. So below we present evidence on several different segments of consumers.

¹⁰ Debit cards are effectively rationed as well as credit cards, since consumers deemed severe credit/fraud risk are denied checking accounts.

A third question is: *how to measure the extent of multi-homing?*

As noted above, in Rochet and Tirole the single-homing index is critical. As Rysman notes, this index is difficult to measure in practice. But evidence on consumer price sensitivity in payment choice is clearly related, and we discuss it below. In Guthrie and Wright multi-homing is a discrete choice. Below we focus on discrete measures of multi-homing. Describing multi-homing in terms of prevalence sheds light on the question raised at the outset: “whether the case of single-homing or that of multi-homing is more descriptive”.

III. Multi-homing in Practice

A. Measuring Payment Card Multi-Homing in the PSPS and the SCF

Rysman (2007) measures multi-homing using the Visa Payment Systems Panel Study (PSPS). Here we produce some comparable estimates of multi-homing using the Survey of Consumer Finances (SCF), along with several additional measures of multi-homing. The PSPS and SCF each have their advantages.

The PSPS’ main advantage for measuring the *prevalence* of multi-homing is that it contains household-*card* level information on card holding, network membership, and usage.¹¹ In contrast the SCF only reports credit card information at the household-*card type* level. SCF Households reports their aggregate holdings and usage of general purpose credit cards (Visa, MasterCard, Discover, and American Express cards with revolving credit), charge cards (primarily American Express cards without revolving credit), and debit cards.

¹¹ The PSPS also has a panel component and transaction-level detail that the SCF lacks. PSPS is a diary survey where households record their entire spending activity for each quarter. See Rysman for additional details.

The SCF data is useful despite lacking information on network membership. Card holdings are interesting in and of themselves, to the extent that substitutability across cards (e.g., credit and debit) matters in theory and practice. Card holding can also be used to measure potential multi-homing on networks. Households that are sufficiently creditworthy to hold multiple general purpose credit cards presumably *could* hold credit cards from different networks at little cost. Households that hold both a credit card and debit card presumably *could* hold cards from different networks, given the ubiquity of Visa and MasterCard debit cards.

The SCF does have several advantages relative to the PSPS. The SCF is publicly available. Its relevant data on credit and debit cards is available over a longer timeframe than reported in Rysman, facilitating analysis of trends in multi-homing. And it samples the entire U.S. population, whereas the PSPS only samples payment card holders. The SCF thus permits analysis of potential payment card holders and users (e.g., the “cash users” who figure prominently in many theoretical models) who are excluded from the PSPS by design.¹²

B. Multi-Homing on Credit Cards, Over Time

i. Potential Multi-Homing

We start by reporting estimates of multi-homing in credit card holding (Table 1).

Table 1 shows various estimates of potential multi-homing. Recall that the SCF lacks information on network membership. So we define potential multi-homing as: (holding ≥ 2 general purpose credit cards) OR (holding ≥ 1 general purpose credit cards and

¹² Both surveys claim to be nationally representative of their different sample frames; see Section III-B for related discussion.

holding > 0 charge cards).¹³ Row 1 estimates the proportion of SCF households satisfying this definition of multi-homing in the entire U.S. population. It was only 39% in 1992, and has been relatively constant at nearly 50% over 1995-2004. Row 3 limits the sample to those with a checking account or payment card (with Row 2 showing that this sample has comprised a very large and rising share of the U.S. population). Households in this sample likely have a higher average ability and preference for using electronic payments than the population at-large. The proportion of potential multi-homers in Row 3 is again stable over 1995-2004, and now rises above 50% after 1992.

Row 5 presents estimates on the sample frame used in Rysman: households holding one or more payment cards. Following the PSPS we include households that own any credit, charge, or ATM card.¹⁴ Row 4 shows that this sample represents a large (90% in 2004) and growing (vs. 79% in 1992) segment of the U.S. population. Row 5 suggests that proportion of SCF payment card holders who were potential multi-homers was stable at around 55% over the 1995-2004. Rysman does not examine the trend, but finds that 64% of households multi-homed in network membership over 1994-2001.

The size of the difference between the SCF and PSPS estimates of potential multi-homing is striking, and almost certainly understated to a substantial degree. The 0.55 in the SCF should represent an *upper* bound on the proportion of households who actually hold credit cards from different networks. The 0.64 represents the proportion of PSPS who *do* hold credit cards from different networks. More generally Rysman (in his footnote 11) finds higher credit card holdings in the PSPS than in the SCF. The

¹³ The proportion of households with a charge card is small and falling (from 11% to 7% over 1992-2004).

¹⁴ This definition produces higher prevalence of SCF households with a payment card than is reported in Rysman. Our Table 1, Panel A, Column 4 shows that the proportion has been at least 0.84 since 1995. Rysman (footnote 11) reports that 81.4% of SCF households hold at least one payment card.

discrepancies could be due to any of several factors. As Rysman notes, the PSPS has a slightly more inclusive definition of a household. The PSPS is also more detailed and may capture cards that SCF households neglect to report. On the other hand, new evidence suggests that aggregated SCF account holdings match up well with counts reported by issuers (Zinman 2007b). This suggests that perhaps the PSPS is not a representative sample of payment card holders. In any case the finding that potential credit card multi-homing is substantially lower in the SCF than the PSPS is notable and should motivate additional data collection and scrutiny.

Rows 6 and 7 narrow the sample to households owning a credit or charge card. This is a relevant sample if the proportion of credit or charge card holders (Row 6) continues to hold steady (at around 70%), due to credit rationing or other factors. Row 7 shows that potential multi-homing in this sample has been stable since 1995, and is markedly higher in this sample (at nearly 70%) than in the other population segments considered thus far.

Rows 8-11 limit the sample based on card *use* rather than card holding.¹⁵ This sample might be particularly relevant for card issuers who are interesting in retaining or stealing active customers. Rows 8 and 9 consider SCF households that use a credit, charge, or debit card. We define credit and charge use as positive charges on the most recent billing cycle(s), and debit use as responding affirmatively to SCF question x7582: “Do you/[your family] use any debit cards?” This question did not emphasize use the first year it was asked, so we do not report any results based on debit use for 1992. Row 8 shows that the proportion of households using a credit, charge, or debit card has been increasing steadily and rapidly. Row 9 shows that the proportion of potential credit card

¹⁵ We do not report results for the broader sample of payment card users because the SCF lacks a precise measure of ATM use.

multi-homers in this sample has been falling steadily, from 0.68 in 1995 to 0.57 in 2004. This probably due in part to a composition effect (as marginally creditworthy households with only one credit card enter the sample), and in part due to the growing substitutability between credit and debit discussed below.

Rows 10 and 11 limit the sample to those using credit or charge cards. The prevalence of households meeting this condition has grown from 0.48 to 0.59 since 1992 (but only from 0.55 to 0.59 since 1995). Meanwhile the prevalence of potential multi-homers with credit/charge card users has held relatively steady, at around 70%.

ii. Actual Multi-Homing

The SCF's lack of card-level data makes it difficult to construct useful estimates of multi-homing in credit card usage. Close examination of Rysman's findings on usage provokes a question for future research. Rysman reports that 75% of consumer-months in the Visa PSPS put more than 87% of their spending on a single card in a given month. This suggests that single-homing is a fair description of typical card credit card usage. But this finding is based (we surmise) only on the sample of households with nonzero card payments. But what of households who are not using a card (at the moment)? Presumably these consumers are the "cash users" included in some models and have some margin of substitutability between cash and card(s). In fact cash users who hold a card(s) may be the marginal consumers in some cases. So (how) should we classify the actual homing behavior of cash users? They are relevant for many models yet clearly neither single- or multi-homing in card usage.

C. Multi-Homing on Credit and Debit Cards, Over Time

We now present some evidence on multi-homing across credit and debit cards. Recall again that the SCF does not indicate the network affiliations of payment cards. As such our measures of potential debit and credit multi-homing estimate upper bounds on the prevalence of multi-homing in network membership, and our measures of multi-homing in debit and credit usage estimate upper bounds on the prevalence of multi-homing in network usage. Rysman does not tabulate any results on debit cards so we have no way of comparing our SCF results to the PSPS.

i. Potential Multi-Homing on Credit and Debit Cards

Table 2 Panel A shows potential multi-homing prevalence under two alternative definitions. The first counts as a household as a multi-homer if it has a credit or charge card, and an ATM card. The latter condition almost perfectly reflects low-cost potential debit card use, given the diffusion of both point-of-sale PIN terminals, and Visa and MasterCard logos that allow ATM cards to function as “signature”/“offline”/“check” debit wherever credit cards are accepted. The second definition counts a household as a potential credit and debit multi-homer if it has a credit or charge card, and a checking account. The latter condition is interesting since nearly all households with a checking account can obtain an ATM card if desired.

Table 2, Panel A, Rows 1 and 2 show the proportion of potential credit and debit multi-homers in the U.S. population under these two definitions. The proportions are large and growing. Under the ATM card (checking account) definition 58% (71%) of the population was a potential multi-homer in 2004. Rows 4 and 5 show multi-homer

proportions in the sample of those with a payment card or checking account. By definition the proportions are (a bit) higher than in the population at-large. Rows 7 and 8 further restrict the sample to those with a payment card. The proportion under the ATM definition again grows from 1992-2004, peaking at 65%. The proportion under the checking account definition is now high (77%- 80%) and stable throughout the sample period. Rows 10 and 11, and 13 and 14, highlight that certain relevant segments of consumers are potential debit and credit multi-homers by definition.

The next set of rows in Table 2, Panel A show the proportion of potential credit and debit multi-homers in samples that are defined based on card use. Among households that use credit, charge, or debit, multi-homing is prevalent (70%) and stable under the ATM-based definition (Row 16), and very prevalent but falling (from 92% to 82%) under the checking account-based definition (Row 17). Among households that use credit or charge, potential multi-homing is prevalent and rising (from 71% to 81%) under the ATM-based definition (Row 19), and nearly universal under the checking-account based definition (Row 20). Among debit users, multi-homing has held around 80% under both definitions (Rows 22 and 23).

ii. Credit and Debit Multi-Homing in Usage

Table 2, Panel B reports the proportion of households who actually multi-home in each of the samples considered above. Here we count a household multi-homing if it reports using debit and having nonzero credit or charge card charges on its last bill(s). Actual multi-homing has risen dramatically over 1995-2004 in each of the samples except debit users (Row 8). The growth mirrors the general rise in debit use shown in Table 2, Panel

A, Row 21. The estimated 2004 prevalence of actual credit and debit multi-homing ranges from 37% (of the entire U.S. population) to 63% (among households using a credit or charge card).

D. Any Multi-Homing: Credit Card, and/or Credit and Debit Card, Multi-Homers

Table 3 shows the large proportion of 2004 SCF households who multi-home in some fashion— either on credit cards, and/or on credit and debit cards.

The 2004 prevalence of *potential* “any multi-homing” ranges from 66% to 100% of households in the eight samples of interest. We use the ATM-based definition of potential debit and credit multi-homing here; prevalence is weakly higher under the checking account-based definition. The prevalence of any multi-homing has been growing in samples based on card holding. Meanwhile it has been falling a bit (from high initial levels) in two of the three samples that are defined based on card usage.

Recall that SCF data limitations on credit card use preclude repeating the exercise for *actual* multi-homing. But Table 2, Panel B provides lower bounds.

IV. Discussion and Concluding Remarks

So is single-homing or multi-homing is a more descriptive view of consumer payment card choice? The short answer is that “multi-homing” is more descriptive.

The long answer depends in part on one’s preferred definition of multi-homing. If the definition includes debit as well as credit, then multi-homing gets substantially more descriptive. For example, while an estimated 54% of SCF payment card holders were potential credit card multi-homers in 2004; an estimated 75% were potential multi-

homers on either credit, or credit and debit. A second definitional issue is whether to focus on potential multi-homing (or the closely related concept of multi-homing in network membership), or on actual multi-homing (card usage). Our key finding here is that multi-homing on credit and debit is prevalent in actual as well as potential terms.

The answer depends also on whose homing behavior matters. Theoretical models have tended to encompass all consumers. But practically, equilibrium outcomes and welfare effects may depend more on the homing behavior of those who already participate in payment card networks. The prevalence of potential multi-homers is high in many segments of interest, and 100% in some.

The answer may also depend greatly on the point in time. Multi-homing has changed substantially over 1992-2004 for many definition*sample combinations. The rise in multi-homing in credit and debit usage has been especially dramatic.

Coupled with related results suggesting that consumer substitution between debit and credit is strong and growing over time (Zinman 2007a), the results suggest that multi-homing is a good, and increasingly good, description of actual behavior if one considers debit a relevant margin.

The picture remains less clear if we consider multi-homing on credit cards only. We find that multi-homing in card holding is prevalent, although substantially less prevalent in the SCF than in the Visa Payment Systems Panel Study (Rysman 2007). SCF data limitations preclude us from building on Rysman's finding that there seems to be relatively little multi-homing in credit card usage. Nevertheless we note that clear thinking about "cash users" may be critical for interpreting the prevalence and equilibrium impacts of multi-homing in credit card usage.

More generally additional theory may be needed to define precisely what type of multi-homing, and whose multi-homing, matters most. More data— at the transaction- and network-level— may be needed to measure the prevalence and intensity of multi-homing more precisely. And more intense collaborations between theorists and empiricists may be needed to make better sense of consumer payment choices and their implications for market outcomes and optimal regulation.

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Table 1. Credit Card Potential Multi-Homers

		1992	1995	1998	2001	2004
(1)	U.S. population: proportion of multi-homing households	0.39	0.46	0.45	0.50	0.48
(2)	Has checking account or payment card: proportion of U.S. households	0.88	0.90	0.92	0.93	0.94
(3)	proportion of these households who are multi-homers	0.44	0.51	0.49	0.53	0.51
(4)	Has payment card: proportion of U.S. households	0.79	0.84	0.86	0.88	0.90
(5)	proportion of these households who are multi-homers	0.49	0.55	0.53	0.57	0.54
(6)	Has credit or charge card: proportion of U.S. households	0.63	0.67	0.68	0.73	0.72
(7)	proportion of these households who are multi-homers	0.61	0.69	0.66	0.68	0.67
(8)	Uses credit, charge or debit card: proportion of U.S. households		0.60	0.67	0.76	0.81
(9)	proportion of these households who are multi-homers		0.68	0.62	0.61	0.57
(10)	Uses credit or charge card: proportion of U.S. households	0.48	0.55	0.54	0.60	0.59
(11)	proportion of these households who are multi-homers	0.66	0.72	0.69	0.70	0.70

Each cell is a population-weighted proportion from the Survey of Consumer Finances (SCF). Proportions that estimate multi-homing prevalence in bold. The SCF is a cross-sectional survey at the household level.

"Payment card" refers to any type of credit, charge, debit, or ATM card.

"Credit card" refers to general purpose credit cards (Visa, MasterCard, Discover, AMEX credit).

"Charge card" refers to general purpose credit cards that offer float of up to 60 days but no revolving line of credit (mostly AMEX).

The SCF provides only the total number of credit or charge cards, not the issuing network. So SCF multi-homers have ≥ 2 credit cards, or ≥ 1 credit cards and ≥ 1 charge cards. Results are very similar if defined based only on credit cards, due to the low prevalence of charge cards.

"Uses credit card, charge card, or debit card" = credit or charge card charges during last billing cycles >0 , or uses debit (question x7582). This is not defined for 1992 because the SCF question on debit cards for 1992 did not emphasize use.

Table 2. Credit and Debit Card Multi-Homers

Panel A. Potential Multi-Homers		1992	1995	1998	2001	2004
U.S. population						
(1)	proportion with credit or charge card, and ATM card	0.43	0.49	0.52	0.57	0.58
(2)	proportion with credit or charge card, and checking account	0.61	0.65	0.66	0.70	0.71
(3)	Has checking account or payment card: proportion of U.S. households	0.88	0.90	0.92	0.93	0.94
(4)	proportion of these households with credit or charge card, and ATM card	0.48	0.55	0.56	0.61	0.62
(5)	proportion of these households with credit or charge card, and checking account	0.69	0.72	0.72	0.75	0.75
(6)	Has payment card: proportion of U.S. households	0.79	0.84	0.86	0.88	0.90
(7)	proportion of these households with credit or charge card, and ATM card	0.54	0.59	0.60	0.64	0.65
(8)	proportion of these households with credit or charge card, and checking account	0.77	0.77	0.77	0.80	0.79
(9)	Has credit or charge card, and checking account: proportion of U.S. households (from Row 2)	0.61	0.65	0.66	0.70	0.71
(10)	proportion of these households with credit or charge card, and ATM card	0.69	0.74	0.77	0.79	0.82
(11)	proportion of these households with credit or charge card, and checking account	1.00	1.00	1.00	1.00	1.00
(12)	Has a credit or charge card, and ATM card: proportion of U.S. households (from Row 1)	0.43	0.49	0.52	0.57	0.58
(13)	proportion of these households with credit or charge card, and ATM card	1.00	1.00	1.00	1.00	1.00
(14)	proportion of these households with credit or charge card, and checking account	0.98	0.98	0.98	0.98	0.99
(15)	Uses credit or charge or debit card: proportion of U.S. households		0.60	0.67	0.76	0.81
(16)	proportion of these households with credit or charge card, and ATM card		0.71	0.71	0.71	0.70
(17)	proportion of these households with credit or charge card, and checking account		0.92	0.88	0.85	0.82
(18)	Uses credit or charge card: proportion of U.S. households	0.48	0.55	0.54	0.60	0.59
(19)	proportion of these households with credit or charge card, and ATM card	0.71	0.73	0.77	0.79	0.81
(20)	proportion of these households with credit or charge card, and checking account	0.98	0.97	0.98	0.97	0.98
(21)	Uses debit card		0.18	0.34	0.47	0.59
(22)	proportion of these households with credit or charge card, and ATM card		0.80	0.78	0.79	0.77
(23)	proportion of these households with credit or charge card, and checking account		0.82	0.79	0.80	0.77

Each cell is a population-weighted proportion from the SCF. Proportions that estimate multi-homing prevalence in bold.

"Payment card" refers to any type of credit, charge, debit, or ATM card.

"Credit card" refers to general purpose credit cards (Visa, MasterCard, Discover, AMEX credit).

"Charge card" refers to general purpose credit cards that offer float of up to 60 days but no revolving line of credit (mostly AMEX).

"Uses debit" is not defined for 1992 because the SCF question on debit cards for 1992 did not emphasize use.

Panel B. Actual Multi-Homers		1995	1998	2001	2004
(1)	U.S. population	0.12	0.21	0.31	0.37
(2)	Has checking account or payment card	0.13	0.23	0.33	0.39
(3)	Has payment card	0.14	0.25	0.35	0.41
(4)	Has credit or charge card, and checking account	0.18	0.32	0.43	0.52
(5)	Has credit or charge card, and ATM card	0.24	0.40	0.53	0.62
(6)	Uses credit or charge or debit card	0.20	0.32	0.41	0.45
(7)	Uses credit or charge card	0.22	0.39	0.52	0.63
(8)	Uses debit card	0.68	0.63	0.66	0.62

Each cell is the population-weighted proportion of those who report using debit and having nonzero credit or charge card charges on their last billing cycle(s).

"Uses debit" and hence actual debit and credit multi-homing is not defined for 1992 because the SCF question on debit cards for 1992 did not emphasize use.

Table 3. Any Multi-Homing: Credit Card, and/or Credit and Debit Card, Potential Multi-Homers

	1992	1995	1998	2001	2004
(1) U.S. population	0.53	0.60	0.61	0.66	0.66
(2) Has checking account or payment card	0.60	0.67	0.66	0.71	0.70
(3) Has payment card	0.67	0.71	0.71	0.75	0.75
(4) Has credit or charge card, and checking account	0.85	0.90	0.90	0.91	0.92
(5) Has credit or charge card, and ATM card	1.00	1.00	1.00	1.00	1.00
(6) Uses credit or charge or debit card		0.86	0.82	0.81	0.78
(7) Uses credit or charge card		0.90	0.91	0.91	0.92
(8) Uses debit card		0.82	0.79	0.80	0.78

Each cell is a weighted proportion of SCF households that multi-home in credit card ownership (per the definition in Table 1 Panel A), and/or multi-home in credit and debit card ownership (per the ATM card-based definition in Table 2 Panel A).