



DISCUSSION PAPER

PAYMENT CARDS CENTER

Measuring U.S. Credit Card Borrowing: An Analysis of the G.19's Estimate of Consumer Revolving Credit

Mark Furletti*
Christopher Ody

April 2006

***Summary:** This paper describes the Federal Reserve System's monthly estimate of revolving consumer credit as published in the G.19 statistical release. It analyzes the source data, sampling methods, and calculations on which this estimate currently relies. In addition, it proposes a framework for analyzing the revolving credit statistic and suggests modifications to how the estimate is calculated and presented. The paper concludes that the revolving credit estimate is highly accurate and proposes that the System consider five modifications that would improve its usefulness to researchers.*

* Corresponding Author: Payment Cards Center, Federal Reserve Bank of Philadelphia, Ten Independence Mall, Philadelphia, PA 19106. E-mail: mark.furletti@phil.frb.org. We thank members of the Board's staff for helpful comments on an earlier draft of this paper and for extensive discussions on the construction of the G.19 estimates. The views expressed here are not necessarily those of this Reserve Bank or of the Federal Reserve System.

I. Introduction

Every month, with the help of statisticians throughout the Federal Reserve System, Board staff estimate how much consumers owe on their automobile loans, credit cards, student loans, boat loans, and other personal loans not secured by real estate. Such loans, which at present total over \$2 trillion, represent a significant portion of total consumer indebtedness.¹ Board staff also estimate the terms and prices of some categories of loans, calculating the average interest rates consumers are paying and, for automobile loans, the average maturity and amount financed. All of these estimates are published in a consumer credit statistical release called the G.19.

The G.19 is the most widely used and cited measure of nonmortgage consumer credit. It helps economists forecast demand for consumer goods and services, gauge consumer optimism about the future, calculate household debt service levels, and model consumer credit markets. The G.19 also helps investors, providing them with a measure of the health of the consumer lending sector, an indication of the fastest growing consumer credit segments, and an understanding of the extent to which lenders are using structured finance products, such as asset-backed securities, to finance growth. G.19 data also help researchers seeking to study consumer reliance on debt, understand popular loan terms and pricing, and support various consumer lending policy positions.

For those with an interest in the credit card industry, the G.19 is of particular importance. Its revolving credit estimate is one of the best publicly available measures of the broad credit card market, indicating the rate at which the industry is expanding or contracting. The estimate also provides insights into consumer attitudes toward card borrowing, indicating, for example, how aggressively consumers use credit card debt to finance holiday spending. The G.19's data on credit card interest rates are also important and are probably the most representative available.

¹ Federal Reserve Statistical Release, G.19, Consumer Credit, June 2005, available at www.federalreserve.gov/releases/g19/.

These data provide card industry researchers and participants with valuable information about how interest rates are affecting the price of credit card credit.

Despite the G.19's central role in research, policymaking, and industry analysis, few of those who rely on it are likely to understand how its estimates are derived. This paper describes how the G.19 currently measures the size of the revolving credit market, which primarily comprises loans made through credit and charge cards. We focus our attention on the revolving credit statistic because of its importance to the credit card industry and credit card consumers. We also find this statistic of particular interest given the volume of recent research on the effects of significantly increasing levels of revolving and largely unsecured consumer debt.

This paper proceeds as follows: Section II explains how Board staff estimate a monthly total of revolving credit for U.S. consumers. Specifically, the Board analyzes the source data, sampling methods, and calculations on which the estimate relies. Section III proposes a framework for analyzing the revolving credit statistic and suggests five modifications to how the estimate is calculated and presented. Section IV concludes that while it may be possible to improve the usefulness of the revolving consumer credit statistic, the present method of estimation is accurate and reliable.

II. Revolving Consumer Credit in the U.S.

The Federal Reserve's monthly estimate of total consumer revolving credit outstanding, which is typically made available on the fifth business day of each month, comprises six segments: commercial banks, finance companies, credit unions, savings institutions, nonfinancial businesses, and pools of securitized assets. The first five segments represent the various types of organizations that can issue credit cards. These organizations offer different products and operate in different regulatory environments. Commercial banks offer a wide range of financial services, including lending and banking services, and are regulated by the Office of the Comptroller of the Currency (OCC), the Federal Reserve System, the Federal Deposit Insurance Corporation

(FDIC), a state banking regulator, or some combination of these regulators. Finance companies can make loans but cannot take deposits, and they are regulated by the Federal Trade Commission (FTC) and state agencies. Credit unions take deposits and make small loans, but they can serve a group of consumers only within a specific community. They are typically regulated by the National Credit Union Administration (NCUA) or state agencies. Savings institutions, which include thrifts and savings banks, offer a wide range of banking services and are usually regulated by the Office of Thrift Supervision (OTS), the FDIC, state banking agencies, or some combination of these regulators. In most cases, a nonfinancial business is an entity that sells goods or services to consumers and offers revolving credit to customers in connection with this retail business. Nonfinancial businesses may be regulated by state entities and, if publicly traded, the Securities and Exchange Commission (SEC).²

The sixth segment, pools of securitized assets, refers not to a type of organization that issues credit cards but to a method of holding credit card loans. These loans have been sold by the card-issuing organization to a special purpose entity (SPE) that in turn has issued bonds backed by these loans to investors.³ Card-issuing organizations do not report securitized card loans on their balance sheets because, in theory, these loans are no longer assets of the card issuer. In practice, card issuers continue to “manage” the accounts associated with these loans by providing customer service, producing and mailing statements, and collecting payments. All of the organizations mentioned above, with the exception of credit unions, sell credit card loans to SPEs. As a result, the credit card loans that these organizations report on their balance sheets are not representative of all of the card loans they actually “manage.” This sixth segment captures

² For more details on the U.S. banking system and various charters for lenders, see the “Know Your Depository Institution” pamphlet published by the Philadelphia Fed’s Public Affairs Department at www.philadelphiafed.org/consumers/knowyourinstitution.html.

³ For a more complete discussion of credit card asset securitization, see Mark Furletti, “An Overview of Credit Card Asset-Backed Securities,” Payment Cards Center Discussion Paper (December 2002), available at www.philadelphiafed.org/pcc/workshops/CreditCardSecuritization_012002.pdf.

loans held by SPEs that would otherwise not be measured using the on-balance-sheet data historically available from card-issuing organizations.

Because four of the five card-issuing organizations discussed above securitize their card loans (credit unions do not), Board staff actually gather data on nine different loan types (e.g., on-balance-sheet commercial bank, off-balance-sheet commercial bank, etc.). This section describes how Board staff estimate all nine of these types of credit, and it is organized by type of lender. The information contained in this section comes from interviews with Board staff that prepare the G.19 and our own analysis of the data that underlie the G.19.

Two challenges facing those estimating revolving consumer credit are generally outside the scope of this paper. The first challenge involves making estimates before source data become available. As described below, some of the data on which G.19 estimates ultimately rely are not often available when the G.19 is released. As a result, Board staff must make predictions about what source data will reveal. Later, when the source data become available, Board staff use it to correct any inaccuracies in their predictions. The second challenge involves interpolation. In many instances, Board staff have a reliable estimate of a particular value for two points in time separated by intervening months (e.g., December and March). Using these two known values, they interpolate values for intervening periods (e.g., January and February). We do not discuss in detail the methods used to make preliminary predictions or interpolations, since, in our view, these techniques have little, if any, effect on the G.19's long-term accuracy or reliability.

A. Commercial Banks

Commercial banks, which include credit card giants such as Citibank, Bank of America, and JPMorganChase, held over 80 percent of all revolving debt in December 2004. Roughly half of this was held on commercial banks' balance sheets, and the other half was held in securitized pools. Although over 4,000 commercial banks issue credit cards, the market is highly

concentrated. The top three commercial banks, for example, held almost 40 percent of all on-balance-sheet revolving loans at the end of 2004 (and the top 10 held nearly 75 percent).⁴

Estimating *on-balance-sheet revolving loans* held by commercial banks is relatively straightforward and involves two data sources, one quarterly and one weekly. All commercial banks in the U.S. are required by law to submit to banking regulators a quarterly Report of Condition and Income (commonly referred to as a Call Report).⁵ Two publicly available Call Report fields are used for the estimate: Schedule RC-C, item 6.a (Loans to individuals for household, family, and other personal expenditures: Credit cards) and Schedule RC-C, item 6.b (Loans to individuals for household, family, and other personal expenditures: Other revolving credit plans).⁶ The first of these items captures consumer credit card balances, including balances that consumers pay off during the interest-free grace period. The second item, other revolving credit, includes noncredit-card extensions of consumer credit, such as check-accessed lines of credit and credit extended in connection with prearranged overdraft protection.⁷

Board staff estimate commercial banks' total on-balance-sheet loans by summing the two fields described above across all unique, nonsavings-bank entities that file Call Reports. To derive a list of unique entities, Board staff must remove subsidiaries that, because of a "parent" entity's filing, report overlapping loan amounts. In 4Q2004, for example, Citibank N.A. reported

⁴ Call Report data, 4Q2004. See Appendix A for more detail.

⁵ Call Report data can be accessed on the FDIC's website at www2.fdic.gov/Call_TFR_Rpts/.

⁶ For those attempting to find these items on the National Information Center (NIC) database, the relevant mnemonics are as follows: RC-C item 6.a is field RCON B538 and RC-C item 6.b is field RCON B539.

⁷ We believe that a third field should be included in this calculation: Schedule RC-S, item 6.a (Amount of ownership interests carried as: Securities) (NIC field RCFD B762). This field includes credit card balances held on a bank's balance sheet by way of an ownership interest in its own asset-backed securities. In general, a bank that relies on off-balance-sheet financing retains an interest in the credit card loans it sells to its off-balance-sheet trust in order to mitigate investors' exposure to risk and to make it easier to do future securitizations. The vast majority of banks retain this interest, commonly referred to as the seller's interest, in the form of on-balance-sheet credit card loans reported on schedule RC-C. A very small minority of card issuers, however, retain this interest in the form of certificated securities. These securities, which are reported in different ways on schedule RC-B, are best accounted for using item 6.a on schedule RC-S. Board staff do not include this field in their calculation because it could potentially include foreign loans. Based on our analysis, however, this has not historically been a problem. For more information on the function of seller's interest, see Matthew Murphy and Michael R. Dean, "ABCs of Credit Card ABS," Fitch, IBCA, Duff & Phelps, April 2001, pp. 4-6.

\$42.7 billion in on-balance-sheet credit card loans and Citibank South Dakota N.A. reported \$42.3 billion in such loans. Because Citibank N.A. is the parent of Citibank South Dakota N.A. and because Citibank N.A.'s Call Report includes Citibank South Dakota N.A.'s data, including the card loans from both entities in an estimate of the total would overstate the estimate by \$42.3 billion. Because of this potential for double-counting, Board staff remove any bank subsidiaries subsumed by a parent entity for reporting purposes. In 4Q2004, we excluded the following five entities to avoid the double-counting of revolving loans: Citibank South Dakota N.A., Fleet Bank (R.I.), N.A., First Citizens Bank, N.A., USAA Savings Bank, and RBC Centura Card Bank. In addition, Board staff remove savings banks that file a Call Report from the commercial bank total, since loans for these institutions are included in the savings bank estimate.⁸

Using the technique described above, we approximated the G.19's on-balance-sheet commercial bank estimate.⁹ The results of this approximation can be found in Appendix A.

While Call Report data are the foundation of commercial bank estimates, they are not ideal for *monthly* reporting purposes for two reasons: They are available only for March, June, September, and December, and they are not available in time to make the initial estimates for these months. To overcome these problems, Board staff rely on the weekly data they collect for the H.8 (Assets and Liabilities of Commercial Banks in the United States), a weekly statistical release.¹⁰ The H.8 summarizes information collected from a sample of banks regarding their

⁸ In 4Q2004, 265 savings institutions with \$1.3 billion in revolving loans were excluded from the commercial bank total. One institution, Citizens Bank of Pennsylvania, held the vast majority (\$1 billion) of these loans.

⁹ We include Schedule RC-S, item 6.a (Amount of ownership interests carried as: Securities) in our calculation. See footnote 6 for an explanation of why we do this.

¹⁰ The H.8 statistical release can be accessed through the Federal Reserve Board's website at www.federalreserve.gov/releases/h8/. While both the H.8 and the G.19 measure the outstanding credit card debt of commercial banks, the two releases have different purposes and are compiled in different ways. The G.19 provides a series of end-of-month snapshots of consumer credit. For any given month, whether recent or long ago, the G.19 reflects the volume and distribution of consumer credit at that particular time. The H.8 provides a snapshot of commercial bank credit for the most recent weekly period, but in contrast to the G.19, its historical snapshots are adjusted to make them more comparable with the most recent snapshot. For this reason, when a large and small bank merge or when commercial bank assets are sold to a noncommercial bank, H.8 historical data are adjusted to remove the effects of these changes. (See H.8

loans, securities, other assets, and borrowings; specifically, it measures commercial bank loans resulting from credit extended through credit cards and related plans.¹¹ Since H.8 data are collected frequently and are based on a sample that represents a significant portion of the commercial bank credit card market, those preparing the G.19 use a growth rate derived from it to estimate commercial bank revolving credit for periods when Call Report data are not or not yet available.¹² When Call Report data become available, quarterly estimates and interpolated monthly data are revised to reflect differences between the H.8 and the Call Report.

The G.19's estimate of *off-balance-sheet revolving loans* held by commercial banks is not based on Call Report data but on estimates published in the H.8. Board staff use H.8 data because of the high frequency—the estimate is published weekly—and because, unlike Call Report data, the H.8's off-balance-sheet information excludes foreign receivables.¹³ In general, the G.19 estimate is the result of summing H.8-derived end-of-month estimates of securitized credit card loans for “large” and “small” domestically chartered commercial banks.¹⁴

Statistical Release, Jan. 7, 2005, p. 14, fn. 1.) For the purpose of estimating commercial bank card loans on the G.19, these cross-lender movements of assets are included.

¹¹ H.8 data are collected from large banks on form FR 2416 (Weekly Report of Assets and Liabilities for Large Banks) and from small banks on form FR 2644 (Weekly Report of Selected Assets). Both forms can be accessed at www.federalreserve.gov/boarddocs/reportforms/CategoryIndex.cfm?WhichCategory=1. Data for on-balance-sheet credit cards and related plans can be found on the H.8 in item 10.a. on pages 7 and 10.

¹² As we understand it, to calculate a monthly estimate in the absence of Call Report data, Board staff calculate a month-over-month growth rate using H.8 data. Because of week-to-week fluctuations in these data, however, the Board does *not* simply use the H.8 data point closest to the end of the month for the growth rate calculation. Instead, it uses a weighted average of the four weeks of H.8 data points surrounding the end of the month (i.e., the two data points preceding the end of the month and the two data points following the end of the month). The weeks immediately bracketing the end of the month are weighted 0.375 each and the weeks on either side of the bracketing weeks are weighted 0.125 each. For example, to calculate the weighted average for February, the second to last week of February and the second week of March are weighted 0.125 each and the last week of February and the first week of March are weighted 0.375 each. Board staff then apply this growth rate to the most recently available Call Report total. For example, if March Call Report data are the most recent available and Board staff are trying to estimate a commercial bank total for June, they calculate monthly growth rates from March to June using the H.8 and apply these rates to the March Call Report data. (Note: The H.8 does include a monthly estimate, but Board staff do not rely on it because it represents an average for the month, not an end-of-month estimate.)

¹³ Off-balance-sheet credit card data were reported on the two lines labeled 33a on page 13 of the January 7, 2005 H.8 release. This release is available at www.federalreserve.gov/releases/h8/20050107/.

¹⁴ We believe that the Board derives end-of-month off-balance-sheet estimates from H.8 data using the weighting process described in footnote 12.

H.8 data are based on a survey completed by voluntary reporters among commercial banks. As explained above, these volunteers are divided into two groups: large and small.¹⁵ The entire universe of large banks participates in the survey.¹⁶ As a result, the H.8's off-balance-sheet estimate for large banks, of which there are currently 29, is simply equal to the sum of these banks' off-balance-sheet card loans (from line M.7.a of form FR 2416).

Calculating the H.8's off-balance-sheet estimate for small banks is slightly more complicated. Approximately 1,000 of the approximately 7,500 small commercial banks complete the weekly survey, which includes a question about off-balance-sheet loans to individuals made through credit cards and related plans (line M.3.a of form FR 2644). As a result, data collected from survey participants must be adjusted in order to approximate the entire small bank universe. To accomplish this, Board staff add data collected from respondents to the weekly survey to data collected from nonrespondents on the most recent quarterly Call Reports (schedule RC-S, column C, item 1). When two consecutive quarters of Call Report data are available, Board staff interpolate weekly data for the nonrespondents using the two available quarterly estimates as starting and ending points.¹⁷

If a small and large bank merge or if a commercial bank acquires assets from or transfers assets to a noncommercial-bank entity, Board staff adjust the G.19 inputs accordingly.¹⁸

Appendix B contains an estimate of the of the off-balance-sheet card loans held by commercial banks. We constructed our estimate using publicly available Call Report data,

¹⁵ The distinction between large and small banks is not straightforward, since bank characteristics other than asset size are involved. For an explanation of how banks are classified for the purposes of the H.8, see www.federalreserve.gov/releases/h8/about.htm.

¹⁶ See the instructions to form FR 2416 available at www.federalreserve.gov/boarddocs/reportforms/default.cfm.

¹⁷ This method is appropriate because of the concentrated nature of card receivables securitization. When making other estimates, such as the on-balance-sheet card loan estimate, Board staff further separate the small bank data into eight strata (with an additional stratum populated mostly by credit card specialty banks) and perform multiplicative extrapolation on each.

¹⁸ Adjustments must be made because of differences between the H.8 and G.19 methodologies. See footnote 10 for more details.

making adjustments for banks that include foreign and domestic off-balance-sheet loans in their Call Report total.¹⁹

B. Finance Companies

Finance companies are relatively minor participants in the revolving credit market, accounting for just 7 percent of revolving credit receivables as of December 2004.²⁰ It is difficult to track the finance companies that issue revolving credit, since they do not have standardized reporting requirements and are often owned by corporate parents that engage in consumer lending through a variety of bank and nonbank entities. Based on a review of consumer lenders' websites and annual reports, we found four institutions with significant consumer lending operations that report owning a finance company: General Electric,²¹ HSBC,²² Wells Fargo,²³ and Citigroup.²⁴ While the extent to which these entities rely on finance companies to extend revolving credit is unclear, we know that these corporate parents play a significant role in the consumer revolving sector.

Unlike commercial banks, finance companies do not have uniform regulatory reporting requirements. As a result, the G.19's estimates of finance companies' *on- and off-balance-sheet* revolving loans rely on three rounds of confidential surveys that finance companies complete voluntarily. The first round, undertaken by Board staff every five years, involves every known finance company in the U.S. (approximately 3,000 entities). These companies are asked about

¹⁹ Schedule RC-S, column C, item 1 requires that banks report domestic *and* foreign off-balance-sheet card loans. In December 2004, we estimate that only two banks, MBNA America and Capital One, included foreign loans in their RC-S total. We believe that the loan totals reported by the remaining banks include only domestic receivables.

²⁰ In December 2004, finance companies' on-balance-sheet revolving loans totaled \$40.0 billion, off-balance-sheet revolving loans totaled \$19.3 billion, and all consumer revolving loans totaled \$811.6 billion.

²¹ GE Consumer Finance reports that it issues credit cards and private label cards in 47 countries. See www.geconsumerfinance.com/AboutConsFinance/AboutConsumerFinance.htm.

²² HSBC reports that it is the nation's second largest finance company and a significant lender of unsecured credit to consumers. See www.hsbcusa.com/ourcompany/linesofbusiness.html

²³ Wells Fargo's finance company, Wells Fargo Financial, offers credit cards through its website. See <http://financial.wellsfargo.com/>.

²⁴ Citigroup's 2004 Annual Report (p.30) indicates that the company has a consumer finance division that makes unsecured personal loans. See www.citi.com/citigroup/fin/data/ar042c.pdf.

their approximate size, lines of business, and structure. The second round of surveys, also undertaken quinquennially, involves a stratified and randomly selected subset of finance companies that responded to the first survey (approximately 600 entities). Finance companies in this subset provide detailed information about their assets, liabilities, and off-balance-sheet activity. Data from these surveys are used to estimate the size of the entire finance company market. The third round of surveys, undertaken every month, involves a subset of those that responded to the second survey (fewer than 100 entities). Respondents to this monthly survey, the Domestic Finance Company Report of Consolidated Assets and Liabilities (DFCR),²⁵ provide Board staff with detailed data on assets, liabilities, and off-balance-sheet activity, including totals for on- and off-balance-sheet consumer revolving loans.²⁶

To estimate revolving credit for finance companies, Board staff calculate a monthly growth rate for on- and off-balance-sheet revolving credit from the monthly DFCR data. They then apply this growth rate to the quinquennial estimate of the consumer revolving market (adjusted for any intervening growth) and report the results on the G.19.²⁷ For example, if the entire finance company industry held \$10 billion in revolving loans as of December 2005 (the date of the last quinquennial survey) and the monthly data for January 2006 showed that

²⁵ DFCR data are collected on form FR 2248, which can be accessed on the Board's website at www.federalreserve.gov/boarddocs/reportforms/default.cfm. The fields on FR 2248 on which Board staff rely are Consumer receivables: Revolving credit (DFCR 1682) and Securitized consumer receivables: Revolving credit to consumers (DFCR A198). Adjustments are occasionally made to these totals to ensure that the loans of corporate parents that engage in consumer lending through finance companies and other bank and nonbank entities are not double-counted.

²⁶ The data collected from finance companies are also used for the purposes of the G.20, another monthly statistical release from the Board. More details about the G.20 and the survey methodology explained in this paragraph can be found on the Board's website at www.federalreserve.gov/releases/g20/. For more information on finance companies and the data collected from them, see Karen E. Dynan et al., "Survey of Finance Companies, 2000," *Federal Reserve Bulletin*, January 2002, p. 1.

²⁷ This is also the method used to calculate most of the estimates for noncredit-card loans related to finance companies on the G.19 and G.20.

revolving loans grew by 2 percent, the January 2006 estimate in the G.19 would be approximately \$10.2 billion.²⁸

C. Credit Unions

Like finance companies, credit unions are minor participants in the market for revolving consumer loans. At the end of 2004, credit unions held less than 3 percent of all revolving outstandings (approximately \$23 billion). Unlike revolving loans made by finance companies, however, those made by credit unions are not concentrated. Over 4,500 credit unions issue credit cards and the top 25 entities control less than a quarter of the market. The largest card-issuing credit union is Navy Federal. Its \$1.8 billion portfolio makes Navy Federal almost three times the size of its next closest competitor, Pentagon Federal.

The *on-balance-sheet estimate* for credit unions is provided monthly to staff that prepare the G.19 by the Credit Union National Association (CUNA), a trade association that represents credit unions.²⁹ CUNA uses a two-step process to arrive at its estimate. First, in June and December, the organization collects data on all credit unions in the U.S. This involves gathering loan and balance-sheet data from the so-called 5300 Call Reports that federal credit unions (FCUs), federally insured state credit unions (FISCUs), and some state credit unions not federally insured (NFICUs) file with the federal regulator of credit unions—the National Credit Union Administration (NCUA). It also involves collecting similar data via surveys from any state credit

²⁸ While Board staff do not disaggregate the figure for pools of securitized assets on the G.19, it is possible to determine finance companies' contribution to the estimate of securitized pools using the G.20, available at www.federalreserve.gov/releases/g20 (page 2, Consumer: Securitized assets: Revolving).

²⁹ The National Credit Union Administration (NCUA) publishes its own estimate of credit card credit owed to credit unions. This estimate is based on data the NCUA collects via the 5300 Call Reports, an analog to the commercial bank Call Report. The NCUA requires that federal credit unions and federally insured state credit unions file this report. State credit unions not federally insured do not have to file, although many do. (NCUA estimates that fewer than 500 credit unions do not file a 5300 Call Report with the administration.) For G.19 purposes, the NCUA's estimate is less than ideal because it includes only credit card loans owed to federal credit unions and federally insured state credit unions. It does not include any card debt owed to state credit unions not federally insured (even if the NCUA receives a 5300 Call Report for these institutions). The NCUA's estimates can be accessed on the administration's website at www.ncua.gov/data/FOIA/foia.html.

unions that do not file regulatory reports. CUNA sums the credit card loans reported by all of the credit unions through the regulatory reports and surveys to arrive at an estimate of the total amount of credit card loans held by all credit unions. These totals are reported to Board staff in time for the G.19's June and December estimations. The second step in the process involves a survey of approximately 600 FCUs, FISCUs, and NFICUs. Data on the credit union card portfolios obtained from this sample are used in conjunction with the most recent six-month benchmark estimate to arrive at estimates for the remaining 10 months of the year (i.e., January through May and July through November). To ensure that revisions to the 5300 Call Reports are reflected in its estimate, CUNA periodically checks the benchmark data and revises its estimates as required.³⁰

Unlike most other consumer lenders, credit unions do not securitize their loans. As a result, the G.19 need not include an estimate of *off-balance-sheet card loans* for credit unions.

Using publicly available 5300 Call Report data, we estimated the amount of credit card loans held by credit unions in December 2004.³¹ Our estimate can be found in Appendix C.

D. Savings Institutions

Savings institutions are a third minor source of revolving consumer credit. In December 2004, over 400 savings institutions held approximately \$43 billion, or 5.3 percent, of total consumer revolving debt. Nearly three-quarters (or \$20 billion) of the on-balance-sheet portion of these loans were held on credit cards issued by four institutions: USAA Federal Savings Bank,

³⁰ The 5300 Call Report requires credit unions to separately report "unsecured credit card loans" and "all other unsecured loans/lines of credit." According to the NCUA, this latter category included nearly \$21 billion (as of December 2004) in personal installment loans, overdraft loans, and other nonauto/nonmortgage consumer loans. (See 5300 Call Report forms available at www.ncua.gov/data/FOIA/foia.html.) As explained above, the G.19 revolving estimate includes unsecured credit card loans but does not include "all other unsecured loans/lines of credit." We speculate that some portion of these "other unsecured loans" should be included in the G.19's revolving estimate. Therefore, further research into this issue is most likely warranted. (See section III, question 5, for more details.)

³¹ These data are available through the National Credit Union Administration.

GE Capital Consumer Card Company (now GE Money Bank), American Express Bank, and Capital One Federal Savings Bank.³²

On-balance-sheet savings bank data for the G.19 are derived from two sources: Call Reports and Thrift Financial Reports (TFRs). Call Reports, described above in the commercial bank section, are completed by all state-chartered, FDIC-insured savings institutions, including state savings banks and cooperative banks, and are filed with the FDIC. TFRs, which generally collect the same types of data as Call Reports, are completed by all federally chartered savings institutions, including federal savings banks and savings and loan associations, and they are filed with the federal regulator of savings banks, the Office of Thrift Supervision (OTS).

To estimate on-balance-sheet revolving loans for the G.19, Board staff add together the revolving loans owed to federal and state-chartered savings institutions as reported on their TFRs and Call Reports. For Call Report filers, Board staff sum the same two fields they use for the commercial bank estimate: Schedule RC-C, item 6.a (Loans to individuals for household, family, and other personal expenditures: Credit cards) and Schedule RC-C, item 6.b (Loans to individuals for household, family, and other personal expenditures: Other revolving credit plans). For TFR filers, Board staff sum the credit card loans reported on Schedule SC (line SC328).

Because TFR and Call Report data are available only for the four months that fall on the end of the quarter (i.e., March, June, September, and December) and are not available in time to make the initial estimates for these months, the staff preparing the G.19 must make estimates regarding savings banks' quarterly on-balance-sheet loan totals and interpolate to determine values for missing months. After Call Report and TFR data are made available, staff revise their projections as necessary.

Appendix D includes our estimation of the top savings banks ranked by on-balance-sheet revolving consumer loans for December 2004.

³² Call Report and Thrift Financial Report data, 4Q2004. See Appendix D for more information.

Neither the TFR nor the Call Report gathers information from savings institutions on their *off-balance-sheet* revolving loans to consumers. As a result, Board staff rely on third-party data services to estimate this component of consumer credit. Specifically, Board staff gather off-balance-sheet issuance data on savings institutions from *Inside MBS and ABS*, an industry trade publication that each month lists the asset-backed securities issued by various lenders, including mortgage and credit card lenders. These data are used in conjunction with other public data, including the trade press, to approximate the size of off-balance-sheet activities.³³

As of December 2004, the G.19 estimated that savings banks managed \$15 billion in off-balance-sheet revolving loans.³⁴ While we were not successful in our attempts to create our own estimate of this segment,³⁵ we suspect that most of the securitization activity in this sector involves the largest card issuers: USAA, GE Capital, American Express, and Capital One. Many of these institutions, however, lend through a variety of entities, including commercial banks and finance companies, and isolating the savings bank portion of off-balance-sheet loans is not possible using SEC filings or other public data.

E. Nonfinancial Businesses

Over the past three years, the acquisition of retailers' portfolios by banks and finance companies has significantly affected the extent to which nonfinancial businesses participate in the market for consumer credit. From December 2002 to November 2005, for example, on-balance-

³³ Using issuance data to estimate the size of off-balance-sheet portfolios is tricky. Taking the sum of all issuance activity for a particular credit card issuer would likely overstate the issuer's off-balance-sheet outstandings. This is the case because securitization deals eventually wind down and the outstandings associated with such deals return to the balance sheet of the issuer (to potentially be securitized again). Given this, to accurately estimate off-balance-sheet outstandings, one would have to estimate how much issuance volume has reverted back to the issuer and subtract the sum of such volume from the sum of the issuer's total issuance. Issuance data can also be misleading because card issuers typically carry an ownership interest in a securitization deal on their balance sheet. For this reason, including the entire issuance amount in the estimation would overstate the off-balance-sheet total by any amount held by the card issuer.

³⁴ Board of Governors, unpublished estimate.

³⁵ We were unable to infer information from regulatory reporting forms and the recent editions of *Inside MBS and ABS* to which we gained access contained no apparent credit-card-related data on savings banks.

sheet revolving loans owed to nonfinancial businesses fell from nearly \$40 billion to \$15 billion.³⁶ This drop is largely due to the acquisition of large retailers' portfolios, such as those of Sears, Home Depot, and various department stores, by consumer lending giants, such as Citibank, GE Consumer Finance, and HSBC. As of December 2004, nonfinancial businesses held approximately \$21 billion (including off-balance-sheet loans), with the largest issuers being Target (\$5 billion), Federated Department Stores (\$2 billion),³⁷ and the Army & Air Force Exchange Service (\$2 billion).

Collecting data on the credit card loans made by nonfinancial businesses is challenging. Retailers rely on a variety of organizational structures and off-balance-sheet vehicles to finance their credit card receivables, and most retailers' schemes do not directly involve a commercial bank or other type of traditional lender. Target, for example, created a special purpose subsidiary, Target Receivables Corporation (TRC), for the purpose of transferring the corporation's credit card receivables off its balance sheet and into a trust. Target National Bank, a commercial bank owned by Target, has a 2 percent stake in the trust, while TRC owns the remaining trust assets that have not been sold to investors. If the G.19 were to include only the credit card loans reported by Target National Bank (i.e., 2 percent of Target's total loans), it would underestimate Target's revolving receivables by over \$4 billion.

Given the complexities of gathering data on the revolving consumer loans owed to nonfinancial businesses, Board staff rely on two sources for their estimate: payment industry trade publications, including the *Nilson Report*, and retailers' SEC filings. Each year, usually in the spring or summer, the *Nilson Report* publishes a listing of the top 15 store-card portfolios owned by retailers and an estimate of the size of the remaining store-card market.³⁸ As of December 2004, the *Nilson Report* estimated that approximately \$12 billion was owed on store

³⁶ November 2005 G.19 Statistical Release available at www.federalreserve.gov/releases/g19/current/default.htm

³⁷ Federated's portfolio has since been sold to Citibank.

³⁸ According to David Robertson, publisher of *The Nilson Report*, store-card data included in the publication are gathered via retailer surveys.

cards (including on- and off-balance-sheet loans) where the stores themselves owned or serviced the associated loans.³⁹ Board staff include this total in the G.19 estimate after subtracting any retailers whose card assets are already included in one of the other loan types described above (e.g., retailers that hold their card loans in a finance company) and determining the portion of retailer loans held off balance sheet.⁴⁰ Board staff also rely on the *Nilson Report* to track the size of another component of the nonfinancial business sector: gas-card programs. Based on *Nilson* data, Board staff estimated the size of this market to be approximately \$5 billion in December 2004.⁴¹

Finally, Board staff rely on other industry trade publications and SEC filings to capture any card loans of nonfinancial businesses not included in the *Nilson Report's* summaries.⁴² For example, Target's \$4 billion Visa portfolio is not listed among the *Nilson Report's* store-card portfolios and, as a result, must be estimated using other data.⁴³ Staff preparing the G.19 also monitor the trade press and SEC filings to ensure that they appropriately track sales of nonfinancial businesses' portfolios and any nonfinancial businesses that enter the consumer lending market during the year.

Estimating the size of store- and gas-card portfolios monthly is difficult because data on these portfolios are published annually and are not available until many months after the end of the year. After two consecutive years of data are available on these portfolios through *Nilson*, Board staff interpolate and revise their initial estimates of the intermediate monthly values. When intermediate values cannot be interpolated because two consecutive years of data are not yet available, Board staff assume that the growth rate of the store- and gas-card portfolio is equal to

³⁹ *The Nilson Report*, No. 838, July 2005, p.8.

⁴⁰ The latter is accomplished using SEC data.

⁴¹ This estimate seems high based on our analysis of the gas-card market, which, like the store-card market, has largely been consolidated at large commercial banks and other traditional lenders. See *The Nilson Report*, No. 841, Sept. 2005, p.8 (listing charge volume of gas volumes).

⁴² The *Nilson Report's* store-card estimates exclude retailers' Visa- and MasterCard-branded portfolios.

⁴³ The Sears MasterCard portfolio, before its acquisition by Citibank, and Nordstrom's Visa portfolio are other examples of nonfinancial business portfolios that require supplemental data.

zero. This ensures that estimates of store- and gas-card portfolios do not unduly influence the growth rate of the overall G.19.

For a high-level overview of the data sources Board staff use to estimate the various components of the G.19, see Appendix E.

III. Improving the Estimate of Consumer Revolving Credit

Having described the inputs, calculation methods, and complexities of the G.19's estimate of revolving consumer credit, we now discuss how the estimate might be improved or made more useful to those who rely on it. Our analysis proceeds in two steps: First, we define the characteristics common to estimations we find the most valuable. Second, we evaluate the current estimate of revolving consumer credit in light of these characteristics and pose five questions. These questions contemplate ways in which the collection, manipulation, and presentation of the revolving consumer credit estimate might be improved.

The challenges confronting a researcher seeking to estimate U.S. revolving consumer credit are no different from those confronting other researchers seeking to measure national activities that span multiple providers and products and for which existing data are imperfect. Given this, it is helpful to consider in the abstract what makes any estimate on which researchers rely highly valuable. Upon reflection, we discovered that the estimates from which we derive the most value have at least three characteristics in common: First, they rely on data that researchers would otherwise find costly to use. Rather than simply repackaging existing and well-understood data, ideal estimates incorporate data that are expensive because of their direct costs or the vast amount of time required to understand their intricacies. Second, ideal estimates leverage the unique or unusual capacities of the organization or researcher that produces them. Estimates that rely on in-depth industry knowledge, special relationships, access to nonpublic information, or uncommon skills are vastly more valuable than those that do not. Finally, highly valuable estimates are available historically and, when possible, disaggregated, yielding to both quick

analysis and in-depth exploration. They download easily, use segmentations that are logical and insightful, and remain stable and continuous over time.

In evaluating the characteristics of estimates we find helpful, it would be shortsighted not to consider the perspectives of those entities on which the burden of filling out forms and surveys falls. Ideally, data from private businesses on which estimates are based would serve some purpose not related to the estimate, since weekly, monthly, and quarterly reporting is expensive. In the context of the G.19, researchers must consider the costs financial institutions would face if a reporting form were modified or expanded to gather data not otherwise needed for regulating financial entities or conducting monetary policy.⁴⁴

Understanding the characteristics common to well-regarded estimates and the burdens that reporting forms can impose on reporting entities, we pose the following five questions that aim to improve the estimate's usefulness.

1. Should the G.19 measure consumer debt instead of consumer credit?

The official title of the G.19 statistical release is “Consumer Credit,” not “Consumer Debt” because G.19 estimates include some short-term extensions of credit on which no interest is assessed, such as those made to consumers who regularly pay their credit card balances in full. Consumer debt, on the other hand, is a subset of consumer credit. It includes only those extensions of credit that the consumer plans to pay back over time. In most cases, these long-term extensions are subject to interest charges.

For researchers, the distinction between debt and short-term credit is an important one. Debt enables consumers to buy goods and services that are otherwise unaffordable and pay for them out of future income. Therefore, debt affects present and future consumer spending, consumers' ability to respond to financial shocks, and the incidence of bankruptcy. In contrast,

⁴⁴ If the Federal Reserve were to modify or expand a form used to collect data, it would be required to go through a formal approval process that includes an analysis of the burden caused by the modification and approval from the Office of Management and Budget.

short-term extensions of credit are of less economic consequence, generally existing to make the acquisition of goods and services more convenient.

Researchers who rely on the G.19 do so because it is a good proxy for consumer debt, not because it is a good measure of total consumer credit. Those who designed the G.19 seemed to recognize this and, therefore, included short-term extensions of credit only to the extent to which they are commingled with consumer debt (as they are with respect to credit cards). Consider, for example, the value of all the goods and services provided to consumers on credit that is not captured on the G.19. It is not uncommon for companies that provide consumers with telephone service, Internet service, energy, water, or cable television to extend 30 days of credit — the same extended to most users of nonrevolving credit cards. If these forms of credit were included in the G.19, the release would lose much of its value, since it could no longer be used as a proxy for consumer debt. Given this, we suggest that the Federal Reserve consider the advantages and disadvantages of removing short-term credit extensions from the G.19.

In her paper “Convenience or Necessity? Understanding the Recent Rise in Credit Card Debt,”⁴⁵ Federal Reserve Board economist Kathleen Johnson uses a variety of techniques to estimate the debt component of consumer credit. One data source on which she relies, the Quarterly Report of Credit Card Interest Rates (QRCC),⁴⁶ is used for estimating the average credit card interest rates featured on the G.19. In addition to data related to interest rates, the report form requests two balance-related items from the banks that voluntarily complete the survey: total ending balances for all accounts (line 6) and total ending balances for all accounts with a finance charge (line 7). While the ratio of these two items approximates the percentage of revolving card balances, Johnson explains in her paper that account acquisition practices render

⁴⁵ Johnson’s paper can be accessed on the Board’s web site at 132.200.33.130/Pubs/feds/2004/200447/200447pap.pdf.

⁴⁶ QRCC data are collected on report form FR 2835a. This form can be accessed through the Board’s website at www.federalreserve.gov/boarddocs/reportforms/default.cfm.

the accuracy of such an estimate less than reliable.⁴⁷ Despite the potential problems with QRCC data, we believe that the Federal Reserve should at least consider whether the data in its current form could help researchers better approximate the consumer debt portion of the G.19.

Alternatively, if the data collected on the QRCC data are deemed not sufficiently reliable for the purpose of estimating consumer debt, the Federal Reserve could amend the QRCC reporting form by replacing the two balance-related items above with items that would permit the accurate measurement of pay-in-full balances.⁴⁸ We do not recommend this change lightly. However, we believe that the value of a change to the QRCC reporting form to improve the measure of consumer debt probably outweighs the costs associated with such a change.

2. Given the consolidation in the consumer revolving sector, are there more useful ways to disaggregate revolving credit data?

As discussed in the previous section, G.19 estimates of revolving consumer credit are segmented by credit type (i.e., commercial bank credit, credit union credit, finance company credit, etc.). These segments are logical, since they are largely based on distinctions important to banking regulators and generally reflect the various avenues by which Board staff collect consumer credit data. In addition, since these segments can be applied to revolving and nonrevolving types of credit, they permit further aggregation of consumer credit totals.

Despite these advantages, we believe that the current segmentation scheme is losing its value with respect to revolving consumer credit. In January 1990, when the credit card industry was relatively young, there was much competition in the revolving credit industry by lender type.

⁴⁷ Some balances reported by issuers as not having been assessed interest, Johnson argues, belong to customers that recently started using their card. These customers have not yet received their first bill and, therefore, have not yet had a chance to signal whether they are long-term borrowers or convenience users. In addition to this problem, we believe that the popularity of 0 percent APR offers in the early part of this decade could skew QRCC data.

⁴⁸ The report form could be amended, for example, by replacing lines 6 and 7 (which, we believe, are not currently used for other regulatory or statistical purposes) with the following: (i) the sum of average daily balances of all accounts with an opening balance greater than zero where the sum of payments made during the month on the account are greater than or equal to the account's beginning balance; and (ii) the sum of average daily balances of all accounts with an opening balance greater than zero.

Commercial banks controlled about two-thirds of the revolving credit market, nonfinancial businesses controlled almost a quarter, and other noncommercial-bank entities controlled approximately 13 percent. Today, because of consolidation, commercial banks hold over 80 percent of all revolving consumer loans, and no other single type of lender holds more than 8 percent. (See Appendix F for charts depicting this change.) Consequently, the current segmentation scheme is converging upon a single segment and its usefulness, one could argue, is limited to illustrating the increasing dominance of commercial banks in this sector.

We propose that the Federal Reserve consider increasing the value of the revolving credit data by segmenting it other ways (in addition to the lender type). Disaggregating data by credit term (e.g., short-term credit vs. debt), product type (e.g., general purpose credit card vs. store-card vs. noncard revolving), or market share (e.g., top 10 lenders vs. top 100 lenders vs. all lenders) would provide researchers with additional insights into this industry's organization, structure, and marketing practices. We believe that these additional segments could be implemented without much cost, since much of the data the Federal Reserve System collects is already formatted in a way that would permit such segmentation. Overall, these segmentations would more fully leverage the System's unique and confidential data and provide researchers with valuable information about the revolving credit market.

3. Should the data on securitized pools be reported on a disaggregated basis?

At present, the G.19 does not disaggregate estimates of off-balance-sheet revolving loans by lender type. But since off-balance-sheet loans comprise nearly 50 percent of all revolving loans and off-balance-sheet data are (and have been) collected and stored by lender type, segmenting off-balance-sheet loans in this way would cost very little. Such information would make the data more useful to researchers attempting to estimate revolving credit market shares by lender type and measure lender reliance on the capital markets for financing. Such information

would also be useful because it is gathered from sources to which most researchers do not have access.

A pie chart that segments the \$380.8 billion in off-balance-sheet revolving loans as of December 2004 by lender type can be found in Appendix G.

4. Should other data sources be used to help ensure the continued accuracy of the consumer revolving estimate?

Board staff preparing the G.19 rely on nearly one dozen different sources of data in an attempt to cover the spectrum of lenders and products that make up the consumer revolving loan market. We believe that the vast majority of these sources are highly reliable, since they incorporate data collected and validated by federal regulators from institutions that have significant incentives to accurately report their financial condition. There are, however, lending institutions that operate outside the traditional banking infrastructure. Finance companies, retailers, casinos, and brokerage firms, for example, extend revolving credit to their customers, but they are generally not required to separately report this activity to federal regulators. In addition, traditional lenders may innovate and account for lending in a way not captured by the existing regulatory reporting structure. A historical example of this is how lenders began securitizing their credit card loans in the 1980s. To stay abreast of lending activities that occur via less traditional avenues or outside the scope of regulatory reports, staff that prepare the G.19 informally rely on a variety of sources, including industry trade press and news services, to spot emerging credit forms and new players in the revolving credit market.

In addition to using these sources, we suggest that Board staff investigate the use of other, relatively new sources of data that might help inform them about emerging trends in the credit market. The three national credit bureaus, for example, sell services that allow their users to analyze revolving credit data by product type. Appendix H includes a graph comparing data from one of these services, TransUnion's trend database, with data from the G.19. While more work is

needed to understand exactly how TransUnion derives its estimate, it appears as if the G.19 and TransUnion's bankcard revolving estimate generally move in tandem. Other firms, such as credit rating agencies and aggregators of securities data, sell information on securitized pools. Overall, credit bureau and asset-backed securities data are unique and inaccessible to the general public. They may prove useful in foreshadowing credit market changes and, therefore, should be further analyzed by those who prepare the G.19.

5. Should the consumer revolving statistic include an estimate for noncredit-card loans made through savings banks, credit unions, or nonfinancial businesses?

As described above, the vast majority of consumer revolving loans in the U.S. are extended via credit card. There are, however, other products that facilitate the extension of revolving credit. For example, prearranged overdraft plans, check-accessed lines of credit, and unsecured revolving personal loans help meet consumer needs not otherwise satisfied by a credit card.

While these noncard revolving products would ideally be included in the G.19's estimate, collecting data on them is, in some instances, challenging. Entities that file a Call Report, including commercial banks and some savings banks, and finance companies that complete the monthly survey described above report their noncard revolving loans in a way that allows the staff preparing the G.19 to accurately estimate them. Savings banks that file a Thrift Financial Report (TFR), however, report noncard revolving loans along with installment loans, such as motorcycle, boat, and airplane loans, on the "other" line of Schedule SC. As a result, it is not possible to determine which portion of "other" loans should be classified as revolving. Similar problems afflict credit union, nonfinancial business, and off-balance-sheet data. A chart that shows which lending vehicles are included in the G.19 estimate by credit type can be found in Appendix I.

It is not likely that the mixed reporting of revolving and installment loans has a significant effect on the G.19's overall accuracy. The noncard revolving loans not captured in the revolving estimate are included in the G.19's nonrevolving estimate. Therefore, the G.19's overall estimate of total consumer credit is not affected. It is clear, however, that the mixed reporting could lead to a small overestimation of nonrevolving loans and a corresponding underestimation of revolving ones. To gauge the magnitude of this, we calculate noncard loans as a percentage of card loans for the two entities on which we have separate noncard data: commercial banks and savings banks that file Call Reports. We find that as of December 2004, noncard loans represent 9 percent of credit card loans at these two entities. Using this percentage as a guide, we find that the estimated \$68 billion held by TFR-filing savings banks, credit unions, and nonfinancial businesses may be understated by \$6 billion. This variance represents 0.7 percent of total revolving outstandings. While this variance is small in relation to the estimate of total revolving outstandings, the Federal Reserve may want to consider using other unique data sources or amending regulatory report forms to improve the estimate's accuracy.⁴⁹ It may be, however, that the costs of these adjustments would outweigh any attendant increase in the G.19's quality.

IV. Conclusion

This paper explained in detail the challenges associated with estimating consumer revolving credit. Furthermore, it examined the disparate sources of information on which the estimate is based. These sources include mandatory regulatory reports, voluntary surveys, and public trade publications. The paper also examined the various data used to derive the estimate. In general, these data are inconsistent, measuring different sectors' activities with different frequency, and they are subject to continuous revision. The paper also described a range of sampling and estimation techniques on which the G.19 relies. Overall, it is clear from this

⁴⁹ Alternatively, all noncard revolving loans could be included with nonrevolving loans on the G.19, and the release's labels could be changed to reflect this.

analysis that the resource-intensive task of estimating consumer credit involves both science and art.

Despite the challenges associated with the consumer revolving estimate, it is highly accurate and reliable. Much of the data on which it is based is validated by statisticians familiar with each reporting institution's unique practices. In addition, many of the institutions providing the data for the estimate do so under the accuracy and honesty requirements of federal law. Revisions to underlying data are immediately reflected on the G.19 website, and those preparing the estimate take great care to ensure its consistency and stability.

Given the thorough efforts of those preparing the G.19, the considerations we raise relate more to the usefulness than to the accuracy of the consumer revolving estimate. We suggest five ideas for the Federal Reserve to consider. Three of these ideas relate to how the consumer revolving data are presented. We suggest exploring whether data can be segmented into credit and debt segments, whether the off-balance-sheet segments can be made publicly available, and whether there are other useful ways of displaying credit data (e.g., by product type or institution size) that would be easy to implement. The other two ideas relate to improving the estimation process. We suggest that the Federal Reserve consider whether an adjustment should be made to account for noncard revolving loans and whether other data sources might help Board staff spot emerging credit products and providers.

By explaining the G.19 estimate in great detail and suggesting ways that it might be made more useful, we hope to modestly improve the quality of future consumer credit research and persuade the Federal Reserve to consider ways in which the estimate can be made more valuable.

Appendix A

Authors' Estimate of G.19's Top 25 Commercial Banks' Total On-Balance-Sheet Revolving Consumer Debt as of December 2004 (in thousands)

Commercial Bank Name	Credit Card	Other Revolving	Carried as Secur.	Total
Citibank NA	42,691,000	655,000	0	43,346,000
Bank of America NA USA	42,955,129	1,085	0	42,956,214
Chase Manhattan Bank USA NA	36,990,529	321,949	0	37,312,478
JPMorgan Chase Bank NA	25,520,000	1,279,000	0	26,799,000
Discover Bank	20,204,532	0	0	20,204,532
MBNA America Bank NA	13,918,369	5,321,967	0	19,240,336
Capital One Bank	13,242,078	0	0	13,242,078
Citibank NV NA	12,818,059	0	0	12,818,059
HSBC Bank USA NA	12,077,806	0	0	12,077,806
American Express Centurion Bank	10,139,860	0	0	10,139,860
US Bank NA	6,309,418	2,464,009	0	8,773,427
Fleet NA Bank	7,959,998	449,467	0	8,409,465
Wells Fargo Bank NA	5,365,000	2,258,000	0	7,623,000
Providian National Bank	7,524,341	0	0	7,524,341
Monogram Credit Card Bank	3,793,919	0	0	3,793,919
Wells Fargo Bank Northwest NA	1,665,000	1,304,000	0	2,969,000
Bank of America NA	33,159	1,797,643	0	1,830,802
Wachovia Bank NA	0	1,515,000	0	1,515,000
Juniper Bank	1,471,094	0	0	1,471,094
National City Bank	1,002,666	433,573	0	1,436,239
Branch Banking & Trust Co.	807,013	442,860	0	1,249,873
Wells Fargo Financial National Bank	1,068,619	0	0	1,068,619
Citizens Bank of Mass.	965,118	43,338	0	1,008,456
Wells Fargo Financial Bank	1,002,192	0	0	1,002,192
PNC Bank NA	659,704	151,512	0	811,216
Remaining 4,674 commercial banks*	12,846,104	7,369,240	172,347	20,387,691
Total	283,030,707	25,807,643	172,347	309,010,697
G.19 Estimate				314,648,880

Source: Call Report Data (RCON B538, RCON B539, RCFD B762).

*Commercial banks with a value greater than zero in the credit card, other revolving, or held as securities fields.

Appendix B

Authors' Estimate of G.19's Top 22 Commercial Banks' Total Off-Balance-Sheet Revolving Consumer Debt as of December 2004 (in thousands)

Commercial Bank Name	Securitized Credit Card Loans
MBNA America Bank NA ¹	66,225,646
Citibank NA	55,670,000
Chase Manhattan Bank USA NA	41,396,909
Capital One Bank ²	28,897,088
JPMorgan Chase Bank NA	27,598,000
Discover Bank	26,852,094
Citibank NV NA	26,672,002
American Express Centurion Bank	15,566,585
Monogram Credit Card Bank	13,213,923
Providian National Bank	10,730,638
Fleet NA Bank	6,350,000
HSBC Bank USA NA	3,490,275
World Financial Network National Bank	3,181,500
First National Bank of Omaha	2,151,025
National City Bank	1,450,000
World's Foremost Bank	1,012,562
Chevron Credit Bank NA	562,165
1st Financial Bank USA	517,773
Bank of America NA USA	500,000
Infibank NA	300,000
Consolidated Bank & Trust Co.	41
Manufacturers Bank & Trust Co.	25
Total	332,338,251
G.19 Estimate³	343,030,900

Source: Call Report Data (RCON B707).

(1) Using data from MBNA's 2004 Annual Report, we adjusted its securitized loan total (from \$81.2 billion to \$66.2 billion) to account for its foreign credit card loan securitization activity.

(2) Using the ratio of domestic to foreign credit card loans from Capital One's Call Report, we adjusted its securitized loan total (from \$37.7 billion to \$28.9 billion) to account for its foreign credit card loan securitization activity.

(3) The \$11 billion difference between the G.19 estimate and our estimate is most likely due to differences in estimation technique. See Section II.A for more details.

Appendix C

Authors' Estimate of G.19's Top 25 Credit Unions' Total Revolving Consumer Debt as of December 2004 (in thousands)

Credit Union Name	Unsecured Credit Card Loans
Navy Federal Credit Union	1,775,298
Pentagon Federal Credit Union	590,053
Suncoast Schools Federal Credit Union	294,075
Boeing Employee Credit Union	270,765
Pennsylvania State Employee Credit Union	231,930
Digital Federal Credit Union	215,546
Orange County Teachers Federal Credit Union	200,702
Vystar Credit Union	192,055
America First Federal Credit Union	161,153
Golden 1 Credit Union	158,660
State Employees Credit Union (N.C)	143,963
Patelco Credit Union	140,082
Security Service Federal Credit Union	132,633
Virginia Credit Union	130,486
Redstone Federal Credit Union	123,759
Wescom Credit Union	107,109
GTE Federal Credit Union	105,704
Baxter Credit Union	104,748
Randolph Brooks Federal Credit Union	104,020
Delta Employee Credit Union	103,739
Michigan State University Federal Credit Union	100,474
Arizona Federal Credit Union	97,735
San Diego County Credit Union	97,185
Municipal Credit Union (N.Y)	87,663
First Tech Credit Union	84,974
Remaining 4,611 Credit Unions	17,275,056
Total	22,944,593
G.19 Estimate	23,244,000

Source: National Credit Union Administration, 5300 Quarterly Call Report (field CUSA 4855).

Appendix D

Authors' Estimate of G.19's Top 25 Savings Banks' Total Revolving Consumer Debt as of December 2004 (in thousands)

Savings Bank Name	Credit Card	Other Revolving ³	Total
USAA Federal Savings Bank	7,116,118		7,116,118
GE Capital Consumer Card Company	6,295,002		6,295,002
American Express Bank, Federal Savings Bank	3,632,955		3,632,955
Capital One Federal Savings Bank	3,321,732		3,321,732
Citicorp Trust Bank Federal Savings Bank	3,208,620		3,208,620
FPC Financial Federal Savings Bank	1,196,265		1,196,265
Citizens Bank of Pennsylvania ¹	868,772	118,106	986,878
State Farm Financial Services Federal Savings Bank	733,632		733,632
M&I Bank Federal Savings Bank	218,580		218,580
E Trade Bank	203,168		203,168
Nordstrom Federal Savings Bank	161,503		161,503
Universal Savings Bank Federal Association	117,086		117,086
Farm Bureau Bank, Federal Savings Bank	95,005		95,005
Commercial Federal Bank, Federal Savings Bank	29,501		29,501
Franklin Templeton Bank & Trust Company, Federal Savings Bank	28,802		28,802
American Savings Bank, Federal Savings Bank	28,263		28,263
Rainier Pacific Savings Bank ¹	21,468	6,017	27,485
First Command Bank	26,680		26,680
FDS Bank (Ohio)	26,473		26,473
Apple Bank for Savings ¹	0	23,672	23,672
Independence Community Bank ¹	0	23,339	23,339
Parkvale Savings Bank ¹	262	20,185	20,447
Citizens Bank of New Hampshire ¹	0	20,263	20,263
Shelby Savings Bank, SSB ¹	0	16,373	16,373
First Federal Savings & Loan Association	12,696		12,696
Remaining 417 savings institutions ²	212,953	122,690	335,643
Total	27,555,536	350,645	27,906,181
G.19 Estimate (rounded)			27,905,000

Source: Office of Thrift Supervision, Thrift Financial Report (SVGL 2707); FFIEC Call Reports (RCON B538 & RCON B539).

(1) Savings institution that filed a Call Report instead of a TFR.

(2) Savings institutions reporting a value greater than zero in the credit card loan or other revolving fields.

(3) Other revolving loan totals are not available for institutions that file a TFR.

Appendix E

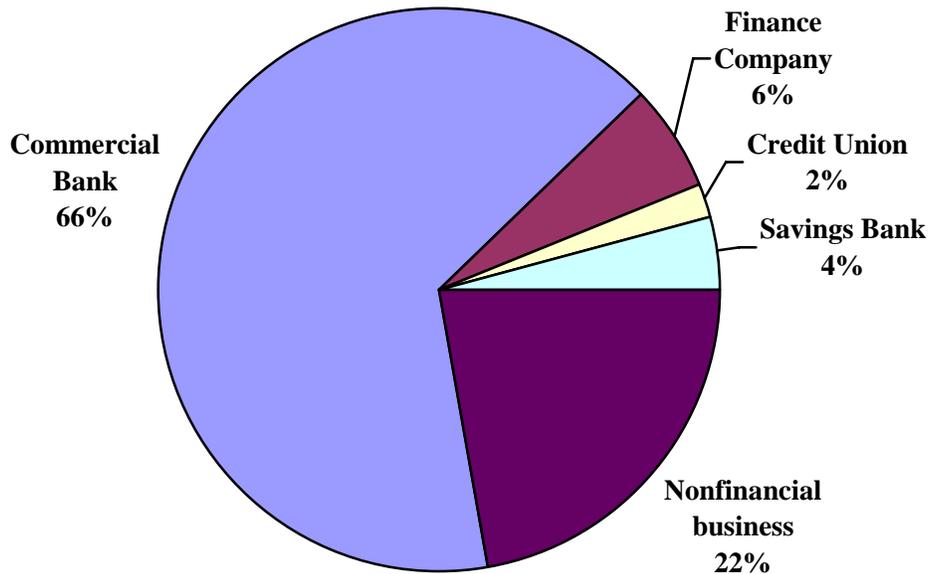
Key Data Sources Used for G.19 by Type of Credit (listed in order of importance)

Credit Type	Lender Type				
	Commercial Banks	Finance Companies	Credit Unions	Savings Institutions	Nonfinancial Businesses
On-Balance Sheet	<ul style="list-style-type: none"> • Call Report filings of commercial banks • H.8 statistical release data 	<ul style="list-style-type: none"> • Voluntary DFCR Survey 	<ul style="list-style-type: none"> • Credit Union National Association (CUNA) Survey • 5300 Call Report data 	<ul style="list-style-type: none"> • Thrift Financial Reports of federally chartered savings banks • Call Reports for state-chartered savings banks 	<ul style="list-style-type: none"> • <i>Nilson Report</i> • SEC filings • Other trade press
Off-Balance Sheet	<ul style="list-style-type: none"> • H.8 statistical release data • Call Report filings of commercial banks 	<ul style="list-style-type: none"> • Voluntary DFCR Survey 	Not applicable.	<ul style="list-style-type: none"> • <i>Inside MBS and ABS</i> • Other trade press 	<ul style="list-style-type: none"> • SEC filings • Other trade press

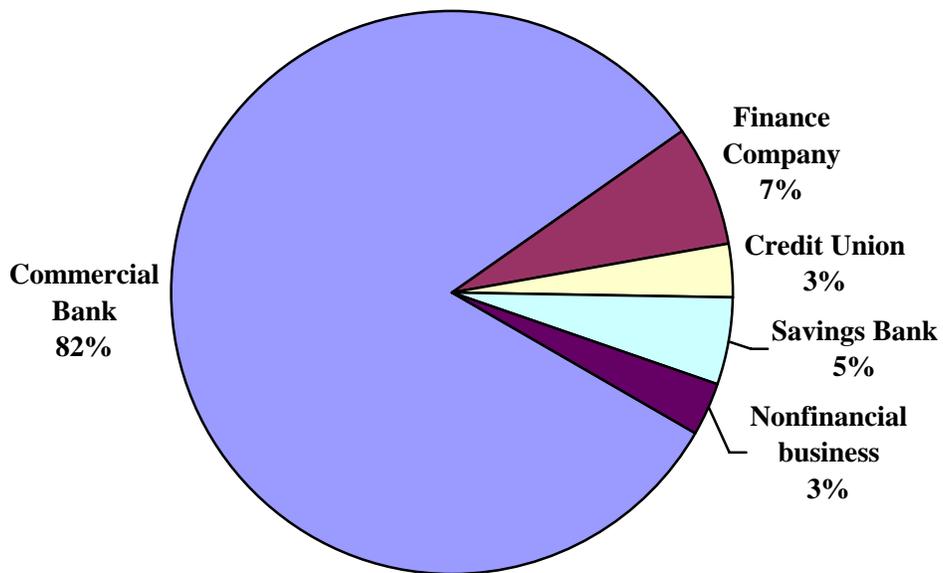
Appendix F

Authors' Estimate of Consumer Revolving Credit by Lender Type

January 1990



January 2005

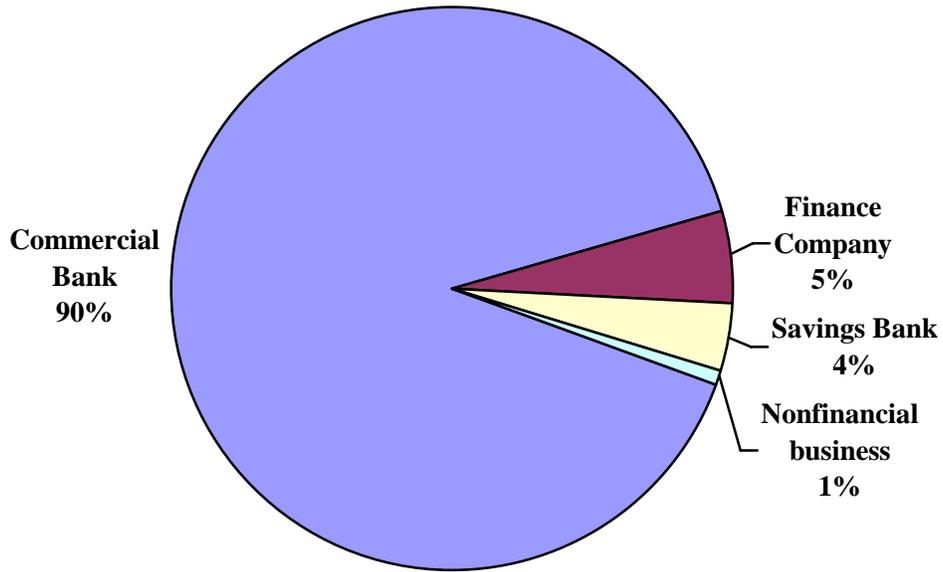


Source: G.19 Statistical Release and authors' own estimates of off-balance-sheet activity by lender type

Appendix G

Pools of Securitized Assets by Type of Credit, December 2004

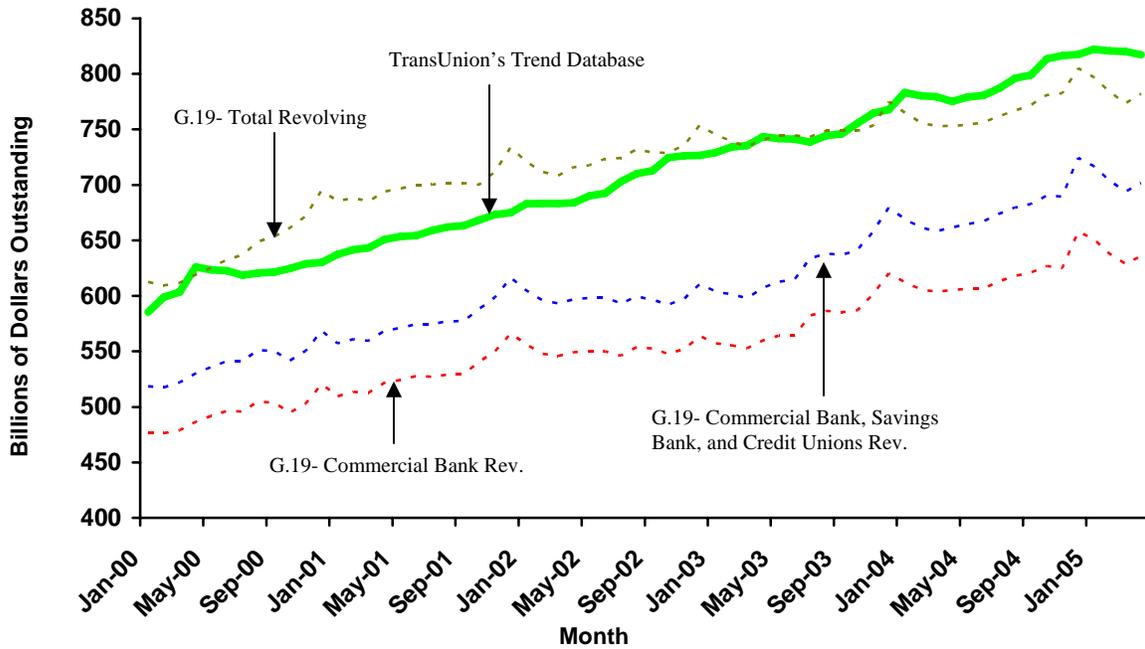
Securitized Asset Pool Composition



Source: Board of Governors, unpublished estimates.

Appendix H

Comparison of TransUnion's Trend Database Estimate of Bankcard Revolving Credit with Various G.19 Estimates



Note: This graph compares the “bankcard revolving” total as reported in TransUnion’s trend database product with three G.19-based estimates of revolving outstandings. We show three different G.19 estimates because we are not sure what lender types (e.g., commercial banks, finance companies, credit unions, etc.) TransUnion includes in its bankcard revolving total. We speculate that finance companies and nonfinancial businesses are not included in this total, since loans made by these entities are potentially captured in other fields within TransUnion’s trend database.

Appendix I

Lending Vehicles Included in G.19 Revolving Credit Estimate by Credit Type

Type of credit		Lending vehicle		
		Credit card	Prearranged overdraft ¹	Other revolving ²
On-balance -sheet	Commercial bank	X	X	X
	Finance company	X	n.a. ³	X
	Credit union	X		
	Savings institution	X		
	Nonfinancial business	X	n.a. ³	
Off-balance -sheet	Commercial bank	X		
	Finance company	X	n.a. ³	X
	Savings institution	X		

(1) “Prearranged overdraft” is credit extended as a result of a preexisting agreement between a bank and a checking account customer to cover debits to the account that would otherwise not be covered because of a negative balance.

(2) “Other revolving” includes revolving lines of credit that are not accessed by credit card, such as unsecured check-accessed lines of credit and unsecured revolving personal loans.

(3) Finance companies and nonfinancial businesses do not offer checking accounts and, as a result, cannot extend credit through overdraft plans.