

June 5, 2020

- IV. Supply of Consumer Credit
 - 1. Financial Intermediation
 - 2. Costs of Lending
 - 3. Measuring Lending Costs
 - Installment loans
 - Credit cards
 - 4. Further Discussion of Lending Costs and Annual Percentage Rates

IV. THE SUPPLY OF CONSUMER CREDIT

Chapter 2 of this report discussed how credit use referred to today as "consumer credit" has been widespread in the domestic population for at least a century and especially since World War II. Chapter 3 then examined how economic theory and evidence shows that mainstream consumer-credit use does not demonstrate just profligacy or irrational short sightedness as some observers have on occasion believed. Rather, individuals employ credit for many reasons but most often for asset purchases or response to emergencies, providing a return over time together with useful change in timing of inflows and outflows. Use is influenced by life-cycle stage where younger individuals and households are more likely to show credit demand than older ones.

The change in timing of spending allows individuals to undertake purchases of assets or alleviate costs of emergencies while using the goods or services purchased. This avoids paying for more costly substitutes or doing without for some period that could be lengthy and expensive. But none of the chapters so far has included discussion of the credit-generating process itself and how production costs influence the supply of consumer credit. Following this discussion in this chapter and in Chapter 5, Chapter 6 then looks at background and concepts of regulation and what regulation has meant for consumer protection in the credit area.

Concerning credit supply, it is easy enough to see at the outset that most consumer credit is not forthcoming either from family members or other individuals, although this sometimes happens. Rather, modern consumer credit is mostly sourced by financial institutions, but this is not the complete story either. Banks and other financial institutions are not the ultimate suppliers of funds they lend. Instead, they function as "financial intermediaries" because the funds advanced to consumers are mostly not the institutions' own. They obtain funds from savers, typically also individuals but also from other intermediaries that obtain funds directly from the ultimate savers. Financial institutions like banks and credit unions but also many others pool the savings of millions of individuals and lend them productively to businesses, governments, and consumers. In the

transfer process from savers to borrowers, the intermediaries provide a number of important services.¹

This chapter contains four sections: First, it focuses on where benefits arise in the funds-transfer process. It turns out that benefits accrue to both the funding and lending sides of the transfer. Second, it turns more specifically to what produces costs, here specifically on the lending side.

The third section of the chapter concentrates on available information on production costs of lending. It focuses especially on information about costs of producing small-dollar traditional installment loans from finance companies, an area where statistical information is available, but also on how these costs compare to other intermediaries. The fourth section focuses on how costs lead to charges to borrowers, in this report especially for production of consumer credit. Truth in Lending provides for disclosure of both finance charges and Annual Percentage Rates on all consumer credit transactions.

Financial Intermediation

Consumer credit provided by financial institutions, like any other good or service used by consumers, is the end-product of a production process. Producing consumer credit involves transfer of funds from savers who have them to borrowers who desire to use more resources now than they would have immediately available otherwise. As outlined in the previous chapter, borrowing provides current access to household goods and services that provide investment returns or alleviate of costs due to emergencies. The important point is that borrowers can save for the purchases through loan repayments while using the goods and services thereby avoiding doing without or paying for expensive alternatives during the saving period. As sources for the loans, credit users employ saved resources made available through financial intermediaries.

This raises the interesting question who are the savers providing the saved resources? Examining the Federal Reserve's Financial Accounts of the United States series shows that while some savings arise from business and government saving, the bulk of saved funds in the economy arise also in the large household sector.

Household providers of funds make them available to financial institutions in a variety of ways. They include consumer transaction accounts with banks and credit unions (checking and money-market

¹For early discussion of the role of financial intermediation, see John G. Gurley and Edward S. Shaw, *Money in a Theory of Finance* (Washington: Brookings Institution 1960). There is lengthier discussion than here with more references about the financial intermediation process for consumer loans in Durkin, et al., Chapter 5, which parts of the following section of this chapter draw upon.

accounts), time accounts (savings accounts and CDs), life insurance reserves with insurance companies, pension rights and other retirement assets with pension funds (including IRAs), direct securities purchases (stocks and bonds), and mutual fund shares. The Federal Reserve's Financial Accounts of the United States show the household sector had supplied more than \$95 trillion to financial markets and institutions through ownership of financial assets as of the end of 2019, mostly through financial intermediaries.²

Some of the funds providers are wealthy individuals, but financial asset holding is much wider than just the wealthy. Often the ultimate lenders are the same individuals who are the ultimate borrowers, like the individual in Chapter 3 above who borrowed \$35,000 on an auto or truck loan but who also had \$35,000 in a savings account or IRA, or in a 529 plan for college education of children. Much of the accumulated savings of the household sector, like retirement reserves, is held in much less liquid form than the consumer credit that households obtain from institutions as loans for purchases.

The most recent Survey of Consumer Finances shows that about 98 percent of households had some sort of transaction or savings account in 2016 (including some with prepaid debit cards or government benefit cards). Transactions and savings accounts are important sources of funds for lending by banks and credit unions. Other kinds of financial assets include certificates of deposit (CDs) held by 6 percent of households, savings bonds by about 9 percent, directly-held stocks by 14 percent, investment funds (for example, mutual funds) by 10 percent, various kinds of retirement accounts by 52 percent, and cash-value life insurance policies by 19 percent, among other classes of financial assets. Mean and median holdings of financial assets among all households with financial assets were \$340,000 and \$23,500, respectively.³

[XXX. WE COULD CALCULATE AND INCLUDE HERE FURTHER DISCUSSION OF SCF FINANCIAL ASSETS, SUCH AS MEDIAN AND MEAN FINANCIAL ASSETS TYPES AND AMOUNTS BY INCOME AND NET WORTH QUINTILES. TABLE 1 OF 2016 SCF SURVEY ARTICLE IN THE FEDERAL RESERVE BULLETIN SHOWS INCOME BY INCOME AND NET WORTH QUINTILES. LIKEWISE, BOX 3 IN THE BULLETIN ARTICLE SHOWS INCOME SHARES BY INCOME PERCENTILE. FURTHER, TABLE 3 SHOWS PROPORTIONS OF HOUSEHOLDS OVERALL HOLDING FINANCIAL ASSETS BY TYPE (BUT NOT BREAKDOWNS BY INCOME OR NET WORTH). THIS DISCUSSION WOULD SHOW THAT NOT ALL LENDING IN FINANCIAL MARKETS IS DONE BY HIGHEST INCOME AND NET WORTH HOUSEHOLDS.]

²See *Financial Accounts of the United States*, until recently called the *Flow of Funds Accounts*, available since 1946 and found in Federal Reserve quarterly statistical release Z1 (<https://www.federalreserve.gov/releases/z1/default.htm>).

³Jesse Bricker, et al., "Changes in U.S. Family Finances from 2013 to 2016: Evidence from the Survey of Consumer Finances," *Federal Reserve Bulletin*, September 2017, p 18.

[ANOTHER POSSIBILITY IS FINANCIAL ASSET HOLDING BY USERS OF DEBT VS. NON USERS]

Throughout the discussion of financial intermediation that follows, it is worth keeping in mind that the intermediation process must benefit both household-sector savers and borrowers if it is to exist as a method of transferring funds. Intermediation must benefit both sides of the transfer process by providing both better risk-adjusted returns on savings (including safekeeping and accounting services) and reduced costs for borrowers, or the transfer process would not take place or would flow through other channels not involving intermediaries.⁴

In theory, households could bypass financial intermediaries and make loans directly to other consumers to purchase houses, cars, or other goods. Peer-to-peer lending does exactly this. But very few households have the resources, acumen, or desire to provide the services of transferring funds from savers to borrowers. Typically the funds used in loans are much different in form and amount than the funds acquisitions. Loans require underwriting, monitoring, collecting, and bearing default risks. As a result, most individuals prefer to lend money to a bank or other financial intermediary, which does have the expertise and resources to bear these costs and risks. In turn, the institutions pay interest and provide other returns on the accounts of these consumers to compensate them for their funds.

It is often not appreciated that this process of pooling consumer savings by financial institutions to put it to work as investment capital is particularly valuable to low-income consumers. Wealthier consumers could, in theory, engage in peer-to-peer lending, or invest significantly in direct financial assets such as stocks and bonds to earn a return. Lower-income consumers, by contrast, typically are less likely to use those investment products. Moreover, returns to them

⁴For instance, from time to time through the history of modern consumer credit, entrepreneurs or policy commentators have suggested a preference for direct person to person or peer-to-peer (PTP) lending avoiding intermediaries. Recent examples include Internet lending platforms like Lending Club that bring funds sources (investors) together with borrowers for a fee of some kind. So far, however, it seems that such lenders are unlikely to replace large-scale financial intermediation due to the services that intermediation provides, unless the cost of providing intermediation services are too high for the revenues generated. So far, almost all consumer lending takes place through intermediaries.

On account of the importance of these intermediation services, including account and risk management discussed further below, active PTP lenders may well evolve into intermediaries and appear headed in that direction. In the past, it has appeared that even criminal loan-shark lenders are intermediaries between criminal enterprises that are the sources of their funds and their unfortunate borrower-customers, rather than true PTP lenders. Some small lenders, like single-office "payday" lenders that use only their owners' capital to fund their lending, might also be PTP lenders in some cases. They still would be supplying certain intermediation-type services to be discussed further, like risk-related diversification of their lending across risky borrowers.

from depository institutions like banks and credit units in the form of ready funds transfer services and safety through FDIC insurance can be very important. These useful services are available even in times like the present when interest paid on deposits is low.⁵

Overall benefits of intermediation for savers that almost seem obvious upon reflection are worth considering further. Financial intermediation provides returns to savers of a variety of sorts, some implicit to the point of sometimes being overlooked and others more explicit. Among the implicit returns to savers is one already mentioned, the ready transferability of funds, often immediately for transactions accounts. Customer-directed transfers can take place through a nation-wide and world-wide payments system using checks, debit and credit cards, and automated clearing house (ACH) transfers. Another is safety, including FDIC insurance for bank deposits and required public disclosures and fiduciary requirements for other institutions. There also are such important conveniences for consumers as instantaneous record keeping and annual preparation of necessary tax statements.

Returns are often more explicit on some financial assets, like interest on CDs or bonds that financial institutions issue, but there are still more kinds of less visible returns. For instance, insurance companies use funds from policy premiums for investments that lower the overall insurance premiums for the insurance coverage. Likewise anyone fortunate to have a defined-benefit pension receives a return from the investments of the pension fund. Such returns are more readily visible for pension funds in the form of 401k plans and IRAs. Individuals with these plans typically count on the long-term investment returns of the plans to provide for their retirement years.

It is possible for individuals to manage their saved resources themselves, but many prefer professional management. The very wealthy may be able to manage financial assets well due to their experience or they can hire financial managers. These possibilities are less probable for middle class households and especially for lower-income families. These households are especially likely to find professional management services provided by financial institutions useful. As indicated, individuals could pool savings and find borrowers to provide a return on these savings without intermediation by financial institutions, but evidence and even imagination describes many instances where this could be intolerably risky for individuals, especially lower-income households without much margin to spare.

⁵An analysis of one community bank found that 83 percent of the dollar balances in the bank's checking account were held by just 15 percent of the bank's customers, yet those with higher balances were paid only marginally higher rates of interest, if any, compared to those with much lower balances. See G. Michael Flores and Todd J. Zywicki, "Commentary on CFPB Report: Data Point: Checking Account Overdraft," George Mason University Law and Economics Research Paper Series, No. 14-45 (July 16, 2016), available in https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2499716.

In providing their services, financial institutions produce distinct financial products for market participants: savers, borrowers, or both. For example, banks and credit unions produce products for both savers (in the form of deposit products checking accounts, interest-earning savings account, and CDs) and for borrowers (loans). Because they provide financial products for both end points in the transfer process, banks and credit unions consequently are able to fund much of their lending with "internal funding" from their own products. It should be clear enough that the frequently-used term "internal funding" is a bit of a misnomer, however, since the funds actually are borrowed externally from customers in the form of deposit products.

Other intermediaries may focus more on one side of the process or the other, at least in terms of numbers of customers. For instance, consumer-oriented finance companies provide mostly lending products. They rely on obtaining funds for lending to their customers from other intermediaries like life insurance companies and pension funds.

These funding sources for finance companies are the ones that obtain the funds from households. Life insurance companies gather premiums from many policy holders and often lend the proceeds to other intermediaries in financial markets, including consumer finance companies that lend directly to individuals. Pension funds that obtain retirement savings from individuals or their employers also lend to other lenders such as consumer finance companies. Thus, there may be more than one intermediary between savers and borrowers, in this example insurance companies or pension funds lending to finance companies that lend to consumer-borrowers. In this example, intermediaries provide services for other intermediaries involved in the process of transferring funds from ultimate savers to borrowers.

All of this involves expenses. Even internal funding by banks and credit unions is not without expense, of course. Although interest rates that depository institutions pay depositors currently are not very high, depositories still must maintain expensive operating and accounting systems to acquire and manage these funds. This may sometimes entail expensive branch systems with personnel costs, and accounting, control, and regulatory costs. Then there also are the actual lending costs for these institutions. They include establishing and maintaining branches, credit-card systems, and other lending channels, as well as regulatory costs there too.

Institutions with presence primarily only on one side of the transfer or the other, like life insurance companies and pension funds on the savings side and consumer finance companies on the lending side, still have expenses associated with producing these products. At a minimum, all financial institutions have expenses associated with funds acquisition, recording, protection, and management. If they are lenders, there also are costs of lending and risk and there are regulatory costs on both sides.

Costs of Lending

It quickly becomes clear enough that all intermediaries must contend with the costs of undertaking their businesses. It is also worth remembering that through economies of scale and specialization, financial intermediaries are able to perform the functions of funds transfer from savers to borrowers in financial markets at a lower cost than individuals could do on their own.⁶ What, then, specifically are the services that intermediaries provide on the lending side that produce costs but that the ultimate providers do not typically want to provide themselves? More specifically than discussed above, they are: (1) information processing and underwriting, (2) risk intermediation, (3) monitoring, (4) temporal intermediation, and (5) size intermediation. Consider each of these in turn.

1. Information processing and underwriting. This need arises from the uncertain performance of prospective borrowers who may in the future be unable (or unwilling) to pay as agreed. This possibility requires the lending institution to collect and evaluate information that provides a prediction on the likelihood that the borrower will repay so that the lending institution will be able to repay its own funds providers.

The information typically includes evidence of the borrower's ability to repay, such as the adequacy and stability of current and future income, assets, and other debts. It may also include evidence of the borrower's performance on previous loans from the same or other lenders. By collecting and evaluating information from many past experiences, financial intermediaries are able to develop expertise and even sophisticated statistical systems for predicting prospective borrowers' likely behavior, a process generally referred to as credit underwriting.

There is no doubt that financial intermediaries know much more about underwriting and how to lend than typical individual consumers who have resources available to lend. Most consumers would rather place their available cash or retirement reserves in a financial institution with information systems than lend the funds directly to other consumers themselves. There also can be no doubt that lenders have consistently attempted to bring cost-reducing technology to bear on this business problem, leading to electronic and even automated or semi-automated systems for information generation and credit evaluation when possible.

2. Risk intermediation. This service arises from the ability of lenders to make many loans and diversify across many borrowers and different types of borrowers. Very few, if any, government, business, or individual borrowers are able to borrow without exposing a lender

⁶See George J. Benston and Clifford W. Smith, "A Transactions Cost Approach to the Theory of Financial Intermediation," *Journal of Finance*, May 1976.

to some risk of default. Regardless of income, wealth, or assets pledged as collateral, any consumer borrower may have difficulty repaying debt as a result of a loss or reduction in income, sickness, accident, divorce, pandemic, a legal judgement, or some other hardship. But if the risks arising from such hardships are not highly correlated across individual consumers, a lender can reduce risk by simultaneously lending to many consumers. Harry Markowitz showed that for any given expected return, diversification can reduce risk in a portfolio of securities if returns are not perfectly correlated.⁷ With others, he received the Nobel Prize in economics for development of his important early insights in this area. This general concept is now discussed in every textbook on financial markets. Unfortunately, intermediation of risks does not imply elimination of losses. Losses due to unforeseen contingencies are still going to arise regardless of quality of the underwriting. Spreading of risks by intermediaries that make many loans works to keep them under control and manageable.

3. Monitoring. Along with underwriting and risk spreading, lenders also monitor borrowers' performance in order to manage risk. In consumer lending, the payment process provides the primary means for monitoring. Consumer loans typically require periodic payments of interest and principle. In closed end (fixed-contract) loans, the payments are usually regular amounts for a fixed period of time, which fully amortize the loan. In open-end loans (revolving credit like credit cards), the payments may be largely at the borrower's discretion, with only a minimum amount being required but still some amount.

In either case, timely payments provide evidence of the borrower's continued ability and willingness to repay. Late payments are an indicator that a problem may have arisen. Specific charges imposed for late payments are an attempt to discourage such behavior (and not only for the purposes of increasing revenue as sometimes believed, although late fees may help cover costs associated with late payments as well as discouraging them). Lenders also attempt to contact borrowers who are late to seek resumption of payments and assess likelihood of future repayment problems. If the problems are serious, a lender may arrange for workout or a resolution. When a resolution is not feasible, a lender may liquidate or foreclose on collateral, if available. A lender may also obtain periodic credit reports from a credit reporting agency, popularly known as a "credit bureau," to monitor the borrower's behavior and prospects.

Credit bureaus may mitigate risk costs to some degree, but they do not solve them. In a conference presentation at the Federal Reserve Bank of Philadelphia, businessman Gary Phillips discussed costs at one of the larger small-loan companies. He noted that while credit bureau scores are important, an employee's judgmental analysis is a critical input in underwriting low credit score applications. Employees must assess the applicant's ability to pay and determine a set of loan

⁷Harry Markowitz, "Portfolio Selection," *Journal of Finance*, March 1952.

terms (loan amount and monthly payment) that an applicant can easily afford to repay.

Further, even low-score borrowers who are on a self-amortizing installment-loan schedule that pays in full at a specific maturity do not necessarily remain on schedule without reminders. This process is costly because it is especially labor-intensive. Despite efforts by lenders of this kind to make monthly payments easily affordable, a significant share of borrowers makes late payments. Employees spend considerable time attempting to contact delinquent borrowers, making arrangements for payment, and resolving problems. Phillips also provided break-even APRs for different loan sizes based on the company's costs that take all of this into account. His data showed an inverse relationship between necessary APR and loan size, and the levels of APR at each loan size were broadly consistent with the NCCF's estimates in 1972.⁸

From this discussion it is easy enough to see the underlying cause of this inverse statistical relationship: First, costs of functions like information processing and much of the monitoring function through taking payments are relatively similar for small loans and larger ones. Therefore, they are relatively more per loan dollar for the smaller loans. Then, labor-intensive actions involving reminders, collecting loans, and bad debts likely are going to be higher for smaller loans, due to riskier borrowers. As indicated, the NCCF also found this inverse relationship between loan costs per loan dollar and size of loans, and it is discussed further later.

4. A fourth service of intermediation is temporal intermediation. This function arises from frequent preference of individual borrowers for different terms to maturity than savers. Borrowers financing the purchase of expensive consumer durable goods or housing purchases, for example, may prefer a relatively long term to maturity, which produces smaller monthly payments. On automobile loans this consideration can lead many borrowers to choose terms to maturity of five years or even longer. Housing loans can extend for thirty years.

But many savers prefer a shorter term to maturity for their savings than borrowers prefer, or even immediate access to their savings. Intermediaries can change maturities, even using transactions account payable immediately as funding for mortgage loans extending for thirty years. Both firms and consumers want a place to keep temporary surpluses until they are needed for payments or until sufficient funds are accumulated for investment. Consumers may also prefer a short term to maturity or immediate access for precautionary reserves held for emergencies. In contrast, pension rights, life insurance reserves, and IRA assets may have maturities much longer than consumer loans.

⁸The presentation is available at <http://www.philadelphiafed.org/consumer-credit-and-payments/payment-cards-enter/events/conferences/2013/small-dollar-credit/papers/Phillips.pdf>.

Individual savers do not normally withdraw all savings simultaneously, nor do they all add to their savings at the same time, however. Pooling the savings of many savers enables financial intermediaries to maintain sufficient funds to lend on a longer term basis while satisfying the needs of individual savers to withdraw savings on short notice.⁹ Financial intermediaries also normally are able to anticipate the need for funds to cover withdrawals, and they may raise additional funds to meet needs in wholesale money markets.¹⁰

5. Finally, size intermediation. This refers to how financial intermediaries can raise funds in small or large amounts but then lend them in the opposite size extreme. For instance, banks commonly acquire small amounts of funds from savings or checking accounts and then lend them as larger automobile, mortgage, and business loans. Some financial institutions may also raise large amounts of funds at one time in capital markets to make small loans, such as finance companies that raise large amounts in national or international bond and commercial paper markets to fund smaller loans to consumers and businesses. Much of this funding comes from other intermediaries. Individuals lending to one another are not likely going to be able to undertake these activities for themselves, or want to undertake them, and this encourages the growth of intermediaries to provide them and facilitate the flows of funds from savers to borrowers.

⁹Recognition of this concept led to the beginning of deposit banking in England in the seventeenth century. At that time, people deposited gold at London goldsmiths for safekeeping. Goldsmiths soon came to realize that they did not need to hold the entire amount of deposited gold to redeem deposits and began to lend part of the deposited gold. Thus, goldsmiths became financial intermediaries. Furthermore, goldsmiths functioned essentially as banks when goldsmiths' receipts became accepted as a means of payment as well as than the gold itself, because the receipts were more convenient to exchange than the deposited gold. For further discussion, see W. T Newlyn, *Theory of Money* (Oxford: Clarendon Press, 1962).

¹⁰Occasionally financial intermediaries experience sudden unexpected large withdrawals because of concerns about an intermediary's own solvency, concerns about other similar intermediaries' solvency, or changes in macroeconomic conditions which shift savers' preferences among savings instruments. Financial intermediaries that raise large shares of funds from short term savings instruments, especially accounts like transaction/checking accounts that can be withdrawn on demand, are potentially vulnerable to such events. Today, central banks like the Federal Reserve System and guarantee agencies like the FDIC mitigate such problems, as seen recently in both 2009 and 2020. Concerns about the solvency of a particular bank, or the banking system as a whole, have caused bank runs in the past, a large part of the reasoning behind establishing the central bank and federal deposit insurance in the United States.

Increases in the level of market interest rates have also sometimes caused savers to withdraw funds from banks and savings institutions more gradually and shift them to direct US Treasury securities, a process called "disintermediation." Such disintermediation occurred from time to time during the period from 1936 to 1986 during periods of high interest rates. At the time, interest-rate ceilings on deposits (called Regulation Q) prevented depositories from raising rates as market rates rose. After this time, removal of interest rate ceilings on consumer deposit accounts dramatically reduced the incidence of disintermediation.

But intermediation is not free and there personnel, systems, risk, and regulatory costs associated with providing the services of financial intermediation. As indicated, costs arise in various ways in the intermediation process outlined above and different institutions use different approaches to mitigate them and run their businesses.

For example, commercial banks incur costs from their extensive infrastructure used both for acquiring funds through deposits, often of small amounts, and distributing the funds by making loans typically in larger sizes. In recent decades, they have acquired both funds and loans through branching systems, but they also have moved to reduce costs where possible by substituting electronic access for branches and branch personnel. Historically for business reasons, and more recently also due to regulation, banks have tended toward the lower end of the lending-risk scale. Lower risk, together with larger loans, has tended to place these institutions among the lower-cost providers of consumer credit. As discussed here in Chapter 3, theorists/empiricists Juster and Shay (1964) included them among those they referred to as "primary lenders."

In contrast, consumer-oriented finance companies have used a different business approach. Precluded in most places from taking deposits from the public, finance companies have acquired most of their funding for lending from other intermediaries including banks, insurance companies, pension providers, mutual funds, and other institutional lenders in national and international capital markets. This has made funds acquisition for them considerably less labor- and infrastructure-intensive than for banks, lowering their costs on this side of the intermediation process. But their operations in riskier parts of the lending markets have tended to raise their costs there relative to banks. They also have often made smaller loans on average than banks, tending to raise operating costs per loan dollar (mentioned above and discussed further later). They also typically have operated at lower "leverage" ratios than banks. This means they usually have a lower proportion of market borrowing compared to ownership capital than banks, and this could lower their return on equity capital relative to banks, other things equal.¹¹ Consumer finance companies often are "secondary lenders" as discussed by Juster and Shay.

¹¹Capital-market lenders to them have forced this lower-leverage approach (lower proportion of borrowed funds) due to their higher risk in the absence of FDIC insurance on the capital-market funds. Other things equal, this would mean higher funding costs and lower profitability for finance companies for the same revenue and other costs. But "other things equal" is a very large theoretical issue for the importance of financial structure on profitability, even aside from the requirement of same revenue and other costs for full and proper comparison, but there is no need to go further into this question here. The financial structure issue involves the general theoretical area known as the "Modigliani-Miller Theorem," a highly technical and mathematical area of financial economics. Professors Franco Modigliani (Massachusetts Institute of Technology) and Merton Miller (University of Chicago) received the Nobel Prize in economics in different years for a variety of contributions to financial economics, including this early joint work at Carnegie Mellon University.

As this quick examination shows, costs on the lending side of financial intermediation arise from a number of groups of cost-causing activities necessary at this end of the financial intermediation process. Continuing to become more specific as this narrative proceeds, it is possible to divide costs of consumer lending into two overall categories, operating and nonoperating costs, each with subcomponents. Both the categories and the subcomponents seem obvious upon reflection.¹²

Operating expenses include costs of originating loans, processing payments, collection of delinquent accounts, and bad debt expenses. Nonoperating expenses include taxes, interest expense for their funds-borrowing activities, and a return on the owners' equity share of the advance to the borrower. Although economic theory, as well as experience, suggests that intermediation lowers the overall cost of the transfer of resources from ultimate savers to borrowers, it is still true that the prices charged for loans must fully cover operating and nonoperating costs of the transfer process. Otherwise, the institution cannot remain in business and provide the services of intermediation.

To originate a loan, a lender must solicit customers through advertising or lead generation, take applications, verify and evaluate information in applications to determine whether or not to grant credit and how much credit to grant, manage aspects of any collateral, prepare documents, disperse the funds, and comply with regulations. Many of these activities can be labor intensive and some often require branch locations for some kinds of credit. The number of branches and their operating hours vary according to the characteristics of the customer base.¹³ In addition, all of the lending activities must be done in compliance with a variety of sometimes complicated and costly legal requirements, costs of which do not always fall with equal relative weight on all institutions.

Approval rates vary by industry, yet each application must be subject to at least some initial scrutiny and oftentimes extensive scrutiny before a final determination whether to extend credit is

¹²Economists have long recognized that lending costs involve more than just return for payment later (interest or the time value of money) and risk (see, for example, Fisher (1907, pp. 88, 209), Marshall (1920, pp. 488-9), and Böhm-Bawerk (1922, p. 7). In their *History of Consumer Credit*, Gelpi and Julien-Labruyere (P. 37) trace this understanding to the middle ages where medieval religious scholastics allowed interest in four cases: *lucrum cessans* (deprivation of the advantages of a different advantageous investment (forbearance)), *damnum emergens* (suffering damages due to risk such as late payment), *stipendium laboris* (operating costs), and *ratio incertidudinis* (other risk costs).

¹³For example, surveys of payday loan borrowers reveal that store outlets are plentiful in many places because many potential customers have limited transportation (they may live in cities and not own a car). Also, some customers value longer hours than available at banks or credit unions because many of them are hourly shift workers who are unable to visit financial institutions during normal business hours.

made. Because the norm in most consumer finance industries is not to charge an application fee, this means that the costs of processing applications for those who eventually are declined must be covered by those whose loans are approved. This cross-subsidization is analogous to the truism that losses on loans that default must be recouped in the prices charged to those whose loans are paid. All of this must be done in compliance with a variety of sometimes complicated and costly legal requirements.

After origination, further operating costs are associated with consumer lending. Closed end credit is typically paid in regular installments, which involve the processing of a series of payments over the term of the loan and entail recordkeeping. In some cases, payments are made electronically, either through a preauthorized debit to the consumer's deposit account or by the customer through the Internet, but many payments continue to be made by check, which involves specialized equipment and employees. Electronic and Internet systems require computers, software, and operators. There also are call centers or other operating systems to handle questions, problems and disputes.

Open-end credit involves multiple extensions of credit and repayments. As most open-end accounts involve frequent, relatively small extensions of credit, processing is highly automated. Nevertheless, employees perform several processing activities, and the necessarily extensive processing and communications systems are costly on an ongoing basis, requiring large data centers. Lenders typically have systems to authorize and process credit extensions automatically, although sometimes an employee may authorize an extension that exceeds a borrower's credit limit or an increase in the credit limit. Lenders monitor open-end extensions for fraud using automated systems, but fraudulent extensions are often detected by the borrowers when they receive their periodic statements. In these cases, employees in call centers record, evaluate, investigate, and act upon the information as needed, but the call centers are expensive to operate. Payments may be processed electronically, but many payments on open-end accounts are made by check and even automated equipment must be supervised by employees. Employees also process account status and billing questions; replacements for lost, stolen, or damaged cards; name and address changes; and requests for account closings and responsibility changes due to divorce or death.

An important characteristic of these underwriting and processing activities is that they occur because an application is taken and a loan made and, other things equal, they are unlikely to vary a great deal by the amount of credit involved. For instance costs of making a \$50,000 loan undoubtedly are higher than making a \$1000 loan, but likely not fifty times as much. The operating costs associated with compensating employees for their time, or for rent, utility payments, the time to make a phone call to a delinquent customer, or even the time it takes for some employee to open the mail and enter the amount on the check into the computer under the customer's account do not

depend upon loan amount. They are all essentially fixed costs that do not vary with the number of loans made, or variable costs that do not scale proportionally to the size of the loan. This characteristic is also present in other activities, like record keeping, that give rise to operating costs. Many costs that arise from compliance with regulatory requirements are especially likely to have such characteristics.

In fact, the costs associated with making a smaller loan can even be more expensive in absolute terms, not just relative terms, compared to larger loans of different types. For example, auto loans made to low-risk borrowers to finance new cars will require some initial costs in loan origination. Many of those costs will be standardized, routine, and automated, all of which reduces the costs of making that loan. And after the loan is originated, it may require little in ongoing servicing costs, especially if the borrower pays each month through an ACH or other electronic transactions.

By contrast, auto loans made to higher-risk borrowers to finance less-expensive used cars, will often involve more heterogeneous borrowers and collateral. The borrowers can have more idiosyncratic credit characteristics. Loan approval rates might actually be lower in these cases than for larger auto loans to prime borrowers. Customers might be more likely to pay by check instead of electronic transfer, incurring costs associated with opening and processing the payment. More important, these loans to higher risk borrowers will, on average, require more ongoing monitoring and collection activities, as employees exert time and effort to contact delinquent borrowers and initiate collection or loan modification processes, all of which involve costs. Finally, loss rates may be higher, costs which must be spread as part of the costs of other loans. All this suggests smaller loans might actually produce higher absolute costs per loan made than larger loans, not just relative costs per loan dollar.

Consequently, the portion of the finance charge just to cover operating and processing expenses on a large loan is likely to be less relative to the loan amount than on a smaller loan, possibly much less. This means, in turn, that Annual Percentage Rate of charge (APR) is going to be less on a larger loan than on a smaller one to cover these costs, other things equal. This is explored still further later in this chapter.

In addition, as indicated above, some borrowers do not always make timely payments. A lender must monitor loans for late or delinquent payments. While identification of delinquent accounts and initial contact with the borrower may be automated, an employee may eventually have to contact a delinquent borrower to seek payment. Depending on circumstances, the employee may remind the borrower of an overdue payment, make repeated contacts to receive payment, negotiate a new schedule for repayment, or decide to turn a delinquent account over for more serious collection efforts like lawsuits. Employees must document promises to pay, payment plans, and accountholder actions or

circumstances relating to the delinquency. Employees may decide to pursue legal remedies such as recovering and selling assets taken as collateral. While some accounts with late payments and delinquencies may eventually be paid in full, processing such accounts can be quite costly. Other accounts are eventually charged off. For many lenders, losses due to charge offs are a significant cost of lending. These costs all tend to be higher per loan dollar on smaller loans than on larger loans

Nonoperating costs consist of cost of borrowed funds, income taxes, and return to equity funds. As discussed, much of the funding for consumer lending consists of borrowed funds, and the sources of borrowed funds vary by the type of lender. Banks obtain by far most of their borrowed funds from customers' deposits. Because of deposit insurance, most deposits are risk-free to the depositor, and consequently are a low cost source of funds. Banks also borrow funds at market rates in capital markets. Finance companies obtain borrowed funds from banks, the commercial paper market, and the long-term capital market. The capital market is the largest source of borrowed funds for finance companies.

Significantly, the cost of borrowed funds per loan dollar (*apart from related operating costs*) is going to vary *much less* by loan size for a given lender than operating costs. When acquiring funds for lending, the first dollar acquired carries much the same interest charge as the ten-millionth dollar acquired or the billionth dollar, up to the ability of the lending company to acquire funds at all. This means that *total* costs still continue to loom larger *per loan dollar* for smaller loans than larger loans even when taking into account the interest costs of funds acquisitions for the loans. It also means that the size of loans made is going to be important in the overall cost structure of various types of lenders. Continuing the narrative here, more will be said about this in the next section.

The residual after paying operating costs and nonoperating costs like interest on borrowed funds and income taxes is the return to equity, which may be distributed as dividends to owners or retained in the firm. The return to equity compensates suppliers of equity capital for the funds they invest in the firm and the risk to which these funds are exposed. Like nonfinancial firms, banks and finance companies that do not provide a return on equity that the market for equity capital requires will shrink and eventually disappear. Credit unions depend on members' share deposits for nearly all their funding. Credit union share deposits, like bank deposits, are a low-cost source of funds. Unlike most other types of lenders, credit unions are cooperative, not for profit organizations. As such, their net income is not subject to income taxes or equity costs, but they still must cover operating and funding costs.

Measuring Lending Costs

Although all lenders are subject to operating and nonoperating costs, this does not mean that the costs of all lenders and loans are the same. As indicated, operating costs in the form of salaries, expenses associated with maintaining places of businesses (rents, fixtures, supplies, communications, and utilities), and legal costs due to regulation all arise from the nature of lending. All lenders must pay for them, but they are going to loom larger per loan dollar for those making smaller loans.

In contrast, nonoperating costs, especially costs of funds acquisition also are important to all lenders, but they increase directly and equally per lending dollar acquired and used. Thus, they increase dollar for dollar as loan size increases and *loom relatively larger as a proportion of overall lending costs per loan dollar as loan size increases*. For this reason, they become an important reason why lenders differ. Different proportions of fixed operating costs and variable nonoperating costs per loan dollar are an important reason why some lenders are low cost lenders and others high-cost lenders on an APR basis. It is worth looking at this differentiation further.

Consider the difference between a store-front cash installment-loan lender and an automobile finance company financing the sale of new automobiles. For discussion, the installment cash lender makes mostly \$2000 loans for one to two years. The automobile finance company makes loans of \$30,000 and up for five years and more.

For the cash lender, the operating costs per loan dollar are going to be higher than for the auto finance company, making it a higher cost lender than the auto financer even apart for any concern over differences in risk. For the auto company, interest costs of borrowing funds for lending in the amounts of tens of thousands of dollars per loan are going to be the predominate element of total costs.

Further consideration of this idea then shows, in turn, how total costs of larger-loan lenders are more sensitive to market conditions on funding costs than for small-loan cash lenders. Funding costs simply loom proportionately larger for larger-loan lenders. This phenomenon of greater sensitivity to funds cost is especially visible for mortgage loans where lending APRs vary daily depending on costs of obtaining loanable funds.

But it is the operating costs like salaries for making loans and providing reminder programs and collections, plus likely losses, that most affect the costs per loan dollar of the small-loan cash lender. As indicated earlier, their costs per loan may even be *absolutely* higher per loan on the smaller sizes due to risk and trickier underwriting, processing, payment reminders, and collection activities per loan on smaller loans. Auto and mortgage lenders are also subject to risk and losses, but generally much less per loan dollar. In both cases these lenders are also secured lenders with saleable collateral to limit losses.

Generalizing from this discussion and examples, lenders to consumers have different cost structures and they differ because of them. These differences suggest that the charges they make for loans are going to differ as well. Consequently, it is worth looking more closely at the cost structures of various kinds of lenders, and in this we continue efforts of the National Commission on Consumer Finance. Like the NCCF, we do not have as much information as we would like, but some specific cost information is available from time to time. The Task Force recommends that scholars continue to study costs of lending, enlarging the availability of reliable cost information whenever possible. This will continue to improve understanding of lenders and how they compete with one another, changing the services available to consumers over time.

We begin with an analysis of traditional unsecured personal installment loans. This is not because these loans are most important in economic impact; in fact, the entire personal installment loan market is small compared to products such as auto lending, mortgages, credit cards, and student loans. We examine installment loans in some detail, in part because data on this industry have become available from time to time, but also because the NCCF Report focused on that industry which gives the Task Force a baseline for comparing changes over time.

Further, finance company consumer lenders are appropriate for studying consumer lending in a statistical sense because they are single-product companies and do not require statistical cost allocations. Many finance companies focus almost exclusively on consumer loans without the cost-accounting difficulties associated with multiple-product institutions like banks. Their fund-raising side is managed by a limited number of headquarters personnel borrowing from other intermediaries in large amounts at one time. Unlike banks, most of their costs arise on the lending side. Following investigation of installment cash loans, we look at available cost information on other kinds of lenders.

The Russel Sage Foundation first examined lending costs at finance companies in the 1910s decade to inform its recommendations concerning rate ceilings (see Robinson and Nugent (1935) and Anderson 2008). Dauer (1944) and Smith (1964 and 1967) then examined costs of consumer finance companies from the 1930s to the 1960s. In 1968 when it legislatively established the National Commission on Consumer Finance, Congress specifically directed it to consider the functioning of consumer credit markets for providing consumer credit at reasonable rates, which caused the NCCF to undertake an extensive data-gathering exercise and look at data in a number of ways. In the area of lending costs, it also engaged as a consultant Professor George J. Benston of the University of Rochester who was at the time the leading expert in the country on statistical cost studies of financial institutions.

In 1972, the NCCF reviewed the underlying costs of consumer lending at considerable length in its Chapter 7. The Commission focused especially on consumer finance companies that primarily provide small cash loans to consumers, today known as traditional installment cash lenders. They extend relatively small amounts of credit on an installment basis to riskier consumers who might have difficulty obtaining credit elsewhere.

The Commission found that break-even interest rates for credit from consumer finance companies needed to be quite high at small loan amounts because of the great relative weight of fixed operating costs. Their analysts showed that break-even rates declined steeply as loan amounts increase and eventually leveled off at larger loan amounts, as fixed operating costs are spread across ever-larger loan amounts. Concerning these costs and their impact on rates of charge, the Commission summarized its findings as follows (P. 145): "When rate ceilings are below the levels indicated [their estimated break-even rates], staff studies show that consumer finance companies can stay in business only by greater loan sizes, limiting their risk acceptance to more affluent consumers, and [by] maintaining large volume offices."¹⁴

For a central part of its work, the Commission used cost data assembled by Professor Paul Smith of the University of Pennsylvania from nine large consumer finance companies that together accounted for about two thirds of the receivables of consumer finance companies at the end of 1964.¹⁵ Professor Smith had assembled the data as part of the consumer credit research project of the National Bureau of Economic Research at the time, and the Commission used it for its work in Chapter 7 of its *Report*. Professor Benston used this and another dataset with more lenders that he acquired from the National Consumer Finance Association, the trade association of these lenders.

A passage in the NCCF's *Report* shows its interest in the relationship between production costs and the availability of credit (P. 139):

The staff's empirical evidence cited in preceding sections indicated that relatively low rate ceilings – ceilings which actually influence the observed rate -- are typically associated with significant reductions of credit supply in affected state markets. In the finance company segment of the personal loan

¹⁴Russell Sage Foundation analysts found similar experience. In an analysis of rate regulation early twentieth century, Nugent (1933) observed similar consequences in four states that lowered rate ceilings in 1929. The number of finance companies operating in these states declined, finance companies closed offices with smaller loan volumes, stopped making smaller loans, and illegal lenders (loan sharks) reemerged. See also Robinson and Nugent (1935).

¹⁵See Paul F. Smith, "Recent Trends in the Financial Position of Nine Major Consumer Finance Companies," in John M. Chapman and Robert P. Shay, eds. *The Consumer Finance Industry: Its Costs and Regulation* (New York: Columbia University Press, 1967).

market, for example, it was estimated that [statewide] supply per family began to fall where rate ceilings averaged between 28 and 30 percent. Below an average ceiling rate of about 28 percent, between 60 and 70 percent of the interstate variation in supply is accounted for by rate ceiling variations and growth.

Similarly, supplies of revolving credit per family are apparently below the national average where APR's on revolving accounts are less than 18 percent. As explained earlier, such curtailments may be expected to occur whenever rate ceilings impose a price insufficient to cover the costs of extending credit. This is, of course, a fundamental proposition that applies to the production and sale of any service or commodity: if the price is not sufficient to offset costs, including normal costs of capital invested, supply is curtailed unless subsidies in some form are provided. Therefore, it is necessary to explore carefully the costs incurred in extending credit for purposes of corroborating the [overall] availability findings and designing recommendations for appropriate rate ceiling.

As mentioned, in addition to the Commission's basic statistical work, Professor Benston used this and another dataset to undertake econometric analyses for the Commission. He used the Smith/NBER dataset to undertake review of revenues and costs of consumer lending and to analyze whether there were economies of scale in lending according to the size of lending offices.

His second dataset involved more lenders (but without the branching data) provided by the National Consumer Finance Association, the trade association of finance company consumer lenders. From 1960 through 1989 the trade association undertook an annual data-collection effort involving its finance-company members. Benston used the second dataset to study economies of scale at the firm level and to study further the costs of lending on loans of different sizes. His studies were available to the NCCF in 1972 and later appeared in the NCCF's *Technical Studies* and in a series of publications in academic journals in the 1970s. His studies for the Commission became the basic template for the later studies using newer data, modern econometrics approaches, and more flexible mathematical functional forms to study the same and similar issues.¹⁶

Today, interest rates generally are much lower than in 1972 and retail store revolving credit has mostly disappeared in favor of

¹⁶See George J. Benston, *The Costs to Consumer Finance Companies of Extending Consumer Credit*, Technical Studies of the National Commission on Consumer Finance, Volume 2, Number 1 (Washington: Government Printing Office, 1973); George J. Benston, "Risk on Finance Company Personal Loans," *Journal of Finance*, May 1977; George J. Benston, "Graduated Interest Rate Ceilings by Size of Small Consumer Cash Loans," *Journal of Finance*, June 1977; and George J. Benston, "Rate Ceiling Implications of the Cost Structure of Consumer Finance Companies," *Journal of Finance*, September 1977. Benston developed the basics of this methodology for his studies of economies of scale of commercial banks in the 1960s, an issue related to banking competition.

credit cards issued by depository institutions, but rate ceilings on small-dollar loans from finance companies are still controversial. For this reason, looking again at related production costs in this area is worthwhile. As discussed further in Chapter 5 below, the Task Force takes no position on the value judgement whether society should allow those in need of small amounts of credit to obtain them even if this entails high percentage rates of charge. There may be other ways to enable availability of such credit, charity or government action, for example. Production costs are still worth examining, however, and charitable and government lending cannot escape them, so here is the updated evidence available.

Analysts in the Federal Reserve Board's Division on Research and Statistics have twice updated the NCCF's findings on small-dollar installment loans from finance companies with newer data, and newer functional forms, econometrics, and calculations. The first was in 1998, using 1987 data similar to that obtained by the NCCF in 1971. The second was in 2020 using information from the Board's 2015 survey of finance companies.¹⁷

Chen and Elliehausen report findings from the 1987 and 2015 updates and compare them to estimates of lending costs available to the NCCF in 1972. Table 1 shows aggregate revenues and costs for these largely single-product consumer lenders relative to their lending for 1964, 1987, and 2015. The introductory paragraphs of their report in 2020 summarize the comparison: "In particular, this article examines the relationship of the loan amount and break-even annual percentage rates and the implications of this relationship for rates and credit availability. Findings suggest that despite many changes since 1972, the NCCF's [cost] conclusions are still valid today" (p. 1).

The evidence shows that gross revenues from \$100 of credit rose 1964-87, reflecting the increase in interest rates during those years (line 1 in the table). Loan revenues per \$100 of credit continued to rise 1987-2015, but this time reflecting smaller average loan size over those years. The trend of interest rates first upward and then downward over time is also visible in line 4A of the table, reporting funding costs per \$100 of lending. It is noteworthy that in all years, the cost of borrowed funds relative to \$100 of lending looms small relative to operating costs.

Table IV-1 goes here.

The table further shows that total operating expenses relative to credit (line 2) also increased over time, due both to higher salaries and greater losses (lines 2A and 2C). Higher salary scales might well

¹⁷Thomas A. Durkin and Gregory Elliehausen "The Cost Structure of the Consumer Finance Industry, *Journal of Financial Services Research*, February, 1998; Lisa Chen and Gregory Elliehausen, "The Cost Structure of Consumer Finance Companies and Its Implications for Interest Rates: Evidence from the Federal Reserve Board's 2015 Survey of Finance Companies," *Feds Notes*, April, 2020.

have been mitigated by greater efficiency through various sorts of office and lending automation over the years 1987-2015, but not relative to loan amounts as average size decreased 1987-2015 (line 7). The impact of the industry's taking on smaller, undoubtedly riskier, loans on average after 1987 is also visible in losses relative to credit (line 2C).

Chen and Elliehausen calculated that total lending costs rose as loan size increased in each of the three years studied, but less than proportionately with loan size. They presented the calculations of costs relative to loan size for each year in their chart 1. Text focused on the NCCF's results in 1972 but the three years were very similar. According to Chen and Elliehausen (page 8):

The Commission estimated costs for loan amounts ranging from \$100 to \$3,000 (\$594 to \$17,805, in 2015 dollars). Estimated costs rose from \$55.06 for a \$100 loan to \$231.80 for a \$3,000 loan (chart 1). As a percentage of the loan amount, however, costs declined. Costs declined from a little more than half of the loan amount for a loan of \$100 to 7.73 percent of the loan amount for a loan of \$3,000 (chart 1). As a percentage of loan amount, costs decline steeply at first and then more gradually as loan amount continues to rise. These findings are consistent with economies with regard to loan amount. That is, loan costs increase less than proportionately with loan amount.

Following the methodology of the NCCF Report, Chen and Elliehausen used these costs to calculate the breakeven APRs for these costs and accompanying minimum loan sizes for one-year installment loans in 1987 and 2015.¹⁸ They provided the necessary loan sizes relative to APRs as charts based on the underlying mathematical functions for the three years of data. Their text again focused on the APRs and again on the year used in the NCCF results, but findings for the three years are in Table IV-2 and Figure IV-1 here (described briefly below) and are remarkably similar across time. According to Chen and Elliehausen (p. 8):

That the finance charge must cover the cost of the loan (including return on investors' equity) for a loan to be profitable allows calculation of a break-even annual percentage rate. The monthly payment for a loan equals the sum of principal and interest divided by the 12-month term of the loan. The interest rate that equates the amount of a loan with the present

¹⁸The NCCF specifically noted in its Report that APRs on loans made for a shorter interval would have to be higher due to being able to earn revenue for less time but that operating costs would still need to be recovered. According to the Commission (P. 145): "Recognizing that loans of [typical small sizes found then], the required APR will be higher than in Exhibit 7-16 [of the Commission's Report] because the costs of putting the loan on the books and servicing it must be recaptured over the shorter time."

value of its monthly payments is multiplied by 12 (the number of payments per year) to obtain a break-even APR.¹⁹

[The chart] shows NCCF estimates of break-even APRs by loan amount. As costs are large relative to loan amount for small loans, break-even APRs are quite high for small loan sizes. The break-even APR was 91.36 percent for a \$100 loan (\$591 in 2015 dollars) and 53.14 percent for a \$200 loan (\$1,187 in 2015 dollars). A frequently suggested maximum for annual percentage rate is 36 percent. The loan amount needed to break-even at 36 percent was about \$330 in 1972 (\$1,960 in 2015 dollars).

Table IV-2 goes here.

Figure IV-1 goes here (Chart 4 in the Feds Note). [XXX NEED CHART.]

Using their mathematical functions, it is easy enough to calculate the loan sizes at various APRs that are necessary to generate sufficient revenue (they are determined jointly in an iterative process). Figure IV-1 and Table IV-2 show the patterns of updated breakeven loan amounts in nominal and real terms for various APRs are remarkably similar to those in 1964 (upper and lower panels of Table IV-2). The table suggests that lenders in 2015 would be unwilling to make loans at 36 percent APR in 2015 smaller than about \$2500. At 100 percent, they would not want to make loans smaller than about \$600. In 1987 when salaries, other operating costs, and funds costs were higher relative to lending amounts than in the other years, required loan sizes were larger but not dramatically different from the other years and the pattern is similar.

[XXX REPORT A BIT HERE ON THE ECONOMETRIC ANALYSES?]

And so, the contentions of the NCCF are borne out by the statistical analysis: Rate ceilings are not so much a limitation upon the revenues and profits of lenders as they are a determinant of the sizes of loans that lenders are willing to make. Borrowers of small amounts appear to be riskier than mainstream borrowers as shown by high operating costs and sizeable losses for lenders in this market. As shown by analysis of costs of these largely single-product credit sources over time, higher rates are necessary to make smaller loans available. The next chapter discusses this further in the context of the kinds of lenders that operate in the small-dollar area.

¹⁹Regulation Z requires this method for calculating APRs, not continuous compounding as with APYs on deposit accounts under Regulation DD. This Truth in Savings regulation came about after computer resources, electronic spread sheets, and sophisticated electronic calculators became more ubiquitous, easing the necessary underlying mathematical calculations for difficult compounding equations. At the signing ceremony for Truth in Lending in 1968, President Johnson went out of his way to praise at some length Cedric Kroll, the actuary leading the team that solved the APR and other TIL calculating problems.

The NCCF also considered costs of other institutions. More recent cost information for other consumer lenders is limited, but available information shows the differences among classes of financial institutions.

[XXX INFORMATION IS IN DURKIN, ET AL. PP. 183-201. SUMMARY GOES HERE.]

Further Discussion of Lending Costs and Annual Percentage Rates

Considering costs and APRS further, it is not very likely that consumers are very interested in operating and nonoperating costs of consumer lenders. Evidence shows they are interested in the finance charges and Annual Percentage Rates necessary to cover these costs, however (see Chapter 7 below).

Both finance charges and Annual Percentage Rates are measures of credit price, although they are not the same. They are determined jointly in the marketplace by the interaction of credit demand (arising from usefulness of credit) and its supply (production cost), as long as there is no external interference with the market (like controls).

Because they are determined jointly by demand and supply, there is no reason to assume the prices determined are "wrong" in some sense, although almost everyone always wants prices to be lower. The National Commission on Consumer Finance argued strongly and continuously in its Report in 1972 for ongoing government encouragement of competition in the granting of consumer credit, so that prices would be both "fair" and the lowest possible for given production costs. It appears that consumer credit markets are more competitive today than in the NCCF's time (see Chapter 8), and Truth in Lending undoubtedly should receive some of the thanks.

Congress should receive its own credit for understanding the importance of both finance charges and APRs when it passed Truth in Lending in 1968 and required disclosure of both. Complaints arise from time to time, but any proposals for manipulating either concept or encouraging sole focus on one or the other for normal kinds of consumer credit risks encouraging unwise credit decisions. A few examples are in order.

[XXX. CONTINUE WITH EXAMPLES OF RELATIONSHIP OF FINANCE CHARGES, APRS, AND MATURITIES AND HOW LONGER MATURITIES WITH LOWER RATES CAN PRODUCE HIGHER FINANCE CHARGES BUT TIL REQUIRES DISCLOSURE OF BOTH. DISCUSSION FROM DURKIN, ELLIEHAUSEN, AND HWANG AND RELATED PAPERS GOES HERE.]

**Table IV-1. Loan Revenue and Costs of Traditional Installment
Cash Lenders, Selected Years**
(Per \$100 of Receivables)

	1964	1987	2015
1. Gross Revenues (Finance charges and other income)	21.40	24.89	29.09
2. Operating Expenses	12.73	15.16	20.74
2a. Salaries and Wages	5.60	6.52	8.77
2b. Other Operating Expenses	4.87	6.13	6.10
2c. Additions to Loss Reserves	2.27	2.11	5.87
3. Net Operating Income (Line 1 less Line 2)	8.67	9.73	8.35
4. Non-operating Expenses	6.34	7.51	4.40
4a. Cost of Borrowed Funds	4.17	6.05	2.28
4b. Income Taxes	2.17	1.46	1.27
5. Total Expenses Line 2 plus Line 4)	19.07	22.67	25.19
6. Net Income (Line 1 less Line 5)	2.33	2.22	4.80
7. Notation: Average amount of receivables per account (dollars)	485	3103	2289

Source: Lisa Chen and Gregory Elliehausen, "The Cost Structure of Consumer Finance Companies and Its Implications for Interest Rates: Evidence from the Federal Reserve Board's 2015 Survey of Finance Companies," *Feds Notes*, April, 2020, Table 1.

**Table IV-2. Calculated Required Minimum Loan Size at Selected APRs
for Traditional Installment Cash Lenders, Selected Years**

		<u>Years (Loan Sizes in nominal dollars)</u>		
		1964	1987	2015
<u>Selected APRs</u>				
100		90	569	620
60		170	1083	1203
42		271	1748	1994
36		336	2181	2532

		<u>Years (Loan sizes in 2015 dollars)</u>		
		1964	1987	2015
<u>Selected APRs</u>				
100		688	1187	620
60		1300	2259	1203
42		2072	4550	2532
36		2569	4550	2532

Source: Calculated from Lisa Chen and Gregory Elliehausen, "The Cost Structure of Consumer Finance Companies and Its Implications for Interest Rates: Evidence from the Federal Reserve Board's 2015 Survey of Finance Companies," *Feds Notes*, April, 2020.

XXX Remaining:

P. 3: Further discussion of SCF Assets, e.g. financial assets by income and net worth quintiles?

P. 22: Figure IV-1.

P. 22: Report a bit on the econometric analyses?

P. 23: Information on additional institutions.

P. 23: Examples of finance charges, APRs, and maturities.