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Chapter 1: Historical evolution of residential lending structures and the rise of financial innovation

1.1. Introduction

Residential lending structures have evolved considerably over the past two centuries (Chava & Rani, 2023; Kannan, 2022; Sriram, 2022). It is commonly said that knowledge of the past will allow for informed decisions for the future. In the context of this essay, an understanding of the historical evolution of residential finance is of central importance since it serves as a basis for the current housing market and related mortgage financing. In addition, this understanding allows researchers to properly diagnose problems of the present, formulate hypotheses about likely future trajectories of housing finance toward existing trends of financial innovation, and assess the feasibility of various paths of change. We aim to highlight historical events, socio-economic conditions, and technological advancements that proved to be pivotal in the development of residential lending practices in the U.S. that are now increasingly being adopted worldwide. Throughout this chapter, we focus on the economic trends of the 20th century experienced in the U.S., as it was the most pivotal period in the development and massive diffusion of residential lending, which remained a predominantly regional affair until then. The landmarks of this modern innovation are progressive real estate market securitization, which relates to the quick appraisal and amortization through secondary market financing, as well as the subsequent evolution of those processes into the mortgage-backed security and its technical counterpart, the CMO. It is impossible to consider residential lending on the basis of economic determinism alone, as such economic innovation was influenced by (and in turn influenced) social and technological factors. Therefore, we will step out of the economic approach to psychoanalyze the turn of the 20th century, as technological advancements had given rise to the multimillion-dollar real estate industry, but housing prices remained impervious to those advances.

Government intervention, in its infancy in the perhaps too generous savings and loan concept, is also noted.

1.1.1. Overview of Key Themes and Objectives

This chapter examines the historical evolution of the financial structure of housing in society. We aim to understand the way residential lending has evolved over time, as well as the socio-political motives behind these transformations. This paper will shed light on the major socio-political events in history that have led to changes in the way individuals finance their homes, as well as the laws and regulations that have allowed for these financing methods. Importantly, the reader will develop a rich understanding of the various financial innovations that have occurred from antiquity to today. In every period of history, in response to pressing socio-political dynamics, residential lenders adapted the products they were offering or were willing to take on more risk. Each of these ideas then set off its own innovation boomlet.

The story of residential financing is actually a series of changes in the way we think about and build homes and the tools that allow us to finance their creation and purchase. Taken as a whole, our hope is that this paper will provide a lens with which to engage this story, while also highlighting that the growth and change in financial systems have been anything but straightforward and naturally evolving. Many of the changes in residential lending have been mandated by regulation; others were sparked by social and political changes. Another set was driven by more basic demand-driven functions: people wanted to build more homes, so a different, more solidly grounded finance method was devised. And some are adaptive following a financial product innovation: as people used the product, it began to redefine the nature of how we did business, and so a new financial system adapted. Together, these three themes in this introductory overview will help weave the story of home financing throughout history together.

1.2. The Origins of Residential Lending

The idea of residential lending has old origins (Suura, 2025; Annapareddy, 2022; Chava & Rani, 2023). Indeed, the notion of interest as a remuneration for money or goods was a common practice dating back at least 20 centuries before Christ. Today, most people in developed countries obtain the necessary financing through what is still an interest-bearing loan – the mortgage. Mortgages are the standard, widely used financial product for the purchase of residential real estate and are typically given by financial institutions such as banks or regulated lending institutions to a variety of different borrowers (Kannan, 2022; Sriram, 2022; Suura, 2025). It is instructive, therefore, to provide a historical overview of a number of different lending practices.

Many societies have developed mechanisms to help individuals obtain financing for the purchase of a home. Capital and credit markets, however, were relatively underdeveloped. As a result, residences were largely financed by friends, family, or other community members. This practice greatly influenced the origination of the highly decentralized mortgage lending process used today in many developed countries. It remains an open question whether an ultra-decentralized origination process and its result – a highly fragmented system of institutional and household claims – are optimal or not. In deeply decentralized systems where obtaining a mortgage was crucial, the evolution of the mortgage and the average income and wealth levels of the respective population are consistent with our historical evidence. Unsurprisingly, in these same societies, the share of the population that is residentially stable is higher if their income and wealth level is high. Socio-economic local community ties and social networks have been long associated with residential history and mobility.

1.2.1. Early Lending Practices

Early Lending Practices: The Need for Trust

The scripts for completing a successful mortgage were laid in the first three decades of the 20th century, with concomitant systematization and formalization thereafter. Before then, access to funds for residential lending was primarily gained through local mutual aid and limited personal wealth. At various times and in varied ways, friends and relatives were asked to lend funds to extend or build homes. Recognizing the trust inherent in such informal lending, these financiers rarely wanted formal proof of a short-term advance, giving grace only after an improvement had been made. These modern local conventions were informed by ethnic, faith, and language cultures, as well as local laws and customs. For example, in much of rural India today, moneylenders lend on the strength of community and agents that are willing to enforce arrangements based on informal deposits.

At other times and in other societies, deposits were accepted in official temples, with apparent sanctity, the proceeds of which sunk into brick and mortar. This amendment, in vaults built by Greek and then Roman workers, demanded large guaranteed deposits to secure temple banks' portfolios of repairs done to housing; rather than a rate of interest, suppliers of funds were guaranteed a discounted repair at the bid, with unsanctified homes in need of repairs supported in part by altruistic gifts. In ancient times in Mesopotamia, the rosette press marked (and impressed) clay tablet records of the consignors who supplied and the consignees who borrowed barley to floor cold-storage houses for crops grown along the rivers creating the Islamic crescent and foundational deposits, which matured for delivery when the spring flood waters flowed. Way back then, the borrowed barley had to be replaced, plus its growth, in at most one year when subleasing began. Traders, including original depositors of barley, looked to local stewards to maintain the deposits and assure replacement, sometimes by slaughter of the local families they oversaw, permitting creditors to enforce consignment at a remote rather than in situ site. Enforcing consignment only in situ led to positive relational net present value of remote claims bolstered by transaction costs below conversion exit price equivalents. These early practices begin to frame a picture of how individuals in the past may have gained access to funds for housing, showing some aspects of residential lending that occasionally required proof. Of payments and deposits between unknown investors and needy individuals, quite another evolution can be traced through one of social relationships, trust, and sanctions.

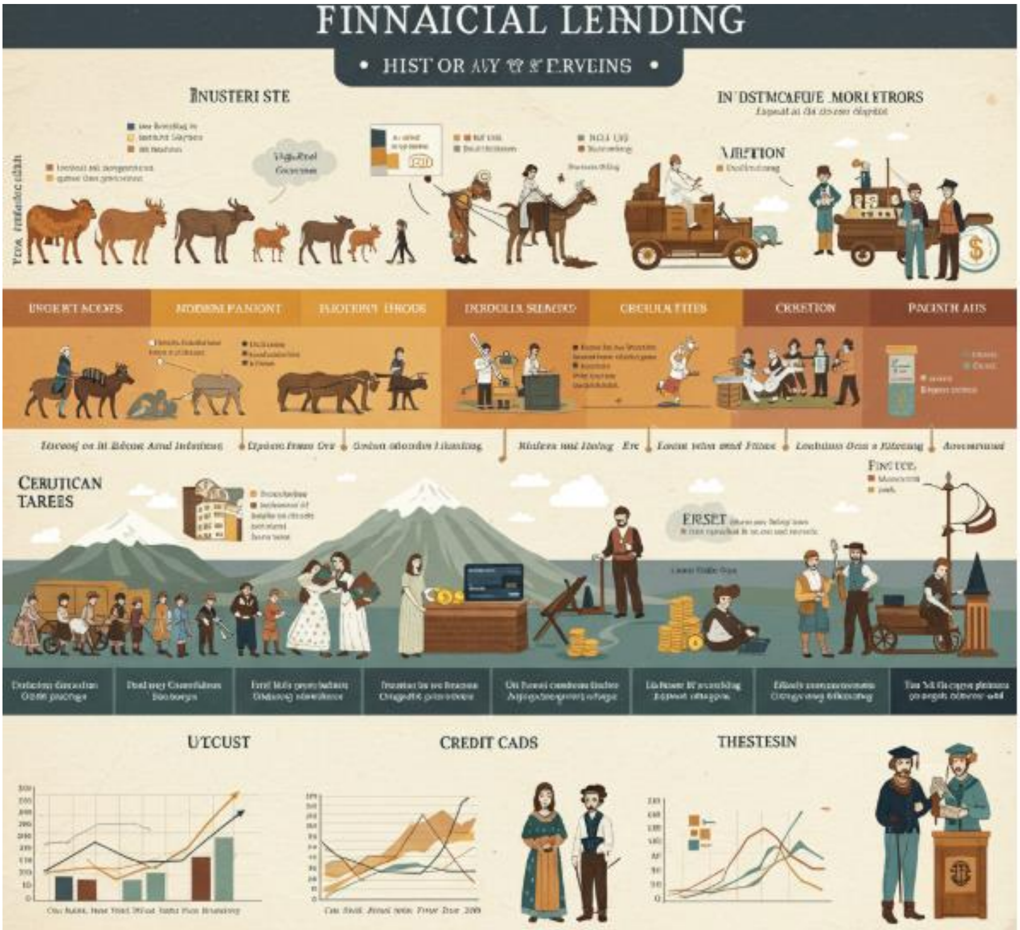

Fig 1 . 1 : History and Evolution of Financial Lending

Lending Strategies Based on Social and Community Relationships

The intermeshing of individual, familial, and community relationships into such borrowing enabled what might otherwise have been complex or dangerous borrowing strategies to become acceptable, providing a mechanism needed for borrowing and lending. Of course, it also protected from some of the early and later excesses of subprime abuse as one cultural variant of the subprime traded off backsliding into a returned quest for stability. Local banks that arose as a necessity to get money to miners who only got paid after their placements were turned over to sure buyers, payable in gold that had to be dug out, were soon found supplying salt pork, too.

1.2.2. Development of Mortgage Instruments

Informal arrangements proliferated during this earlier period, and in the largely agrarian United States, they were colloquially referred to as "seller financing." These transactions took the form of ordinary loans for a future-bound buyer in a variety of incarnations, including selling a "contract for deed" in the event of a property sale, "land contracts," and "sold-on installments." Over time, these informal instruments evolved into widespread, formal financial instruments, and various states adopted formal, compulsory mortgage laws. In the 1800s, the law regarding these transactions had to evolve to clarify the rights of "buyers" and the interest of the seller. But informal, private agreements remained common. Traditional mortgages include a legal description of the property, the rights and responsibilities of both the borrower and lender, and a due-on-sale clause. While not typically included in traditional mortgages, it is often thought that most of the mortgages are assumable, have a prepayment clause, have a mortgage insurance clause, and a default clause. The significance of these components will become increasingly important as we develop a pool of current literature. Until the private mortgage market developed, the terms of both the contract and the interest rates varied according to the economic times, with a lack of funding coinciding with a high interest rate environment for the borrower, and conversely, with loan bubbles of lower rates to entice borrowers until all of the available loanable funds were used. In the 20th century, innovations were made to offer greater flexibility in the types of loans available to the homebuyer in response to borrower demand, which has generally been in response to periods of innovation in general.

1.3. The Impact of the Great Depression

By the 1930s, the transition into the Great Depression prompted major changes in the U.S. residential lending system. The lengthy and deep economic collapse led to a high default rate on homes that were financed by the existing closed-end structures. This housing crisis led to the depreciation of securities held by many depository institutions and, in turn, impaired the stability of the financial system. In order to ameliorate the problem of increased credit risk, financial institutions developed techniques of appraisal and equity requirements based on data from local housing market trends, loan defaults, and real estate economics. The federal government also lent its support to the development of a more durable and reliable homeownership finance and risk management system with the establishment of the Federal Housing Administration and the Veterans Administration, which provided loan insurance as part of the New Deal program.

Although the programs of self-supporting funds were initiated during the New Deal primarily to reduce default risk for residential lenders and to create a secondary market for investments, the establishment of these programs by the federal government also mitigated historical consumer attitudes and business-related effects of the Great Depression. With the dominance of the closed-end mortgage product and the subsequent development of loan-to-value and amortization risk management mechanisms in the lending industry, the housing crises of the Depression receded and provided a time of restoration and growth in residential lending, viewing homeownership as a primary goal. The historical alterations in the residential lending structure have formed the recent history of reducing risk as much as possible in the closed-end financing system in place today.

1.3.1 Changes in Lending Policies

The Great Depression led to several changes in lending policies. In the social and economic atmosphere of the time, there was significant uncertainty about economic recovery along with substantial unemployment, mass migration of farmers from states such as Oklahoma to the west, and high default rates. Since it was unclear how long the regions that were hit the hardest would take to recover, financial institutions changed their lending policies to protect themselves from what we now call a down-cyclical decline. Mortgage lending policies began to change from bond and stock pledges as additional collateral as the secondary mortgage market had essentially evaporated. The criterion for selecting creditworthy borrowers also underwent significant change. Lenders started to make loans only to creditworthy borrowers who were close to local branches in geographic areas where they were most familiar. These early lending criteria included an interest-only payment, lower initial loan amount—typically 50% to 66% of property value, a 3- to 5-year maturity, and for many financial institutions, an additional stock or bond pledge as security.

The federal government did act to help in stabilizing the housing market. One of the safeguards was the development of the Federal Housing Administration in 1934 to provide guidelines, requirements, and policies that would stabilize housing and stimulate mortgage credit through the newly chartered neighborhood banks and mortgage companies. After World War II, increases in consumer borrowing drove long-term interest rates higher and the typical down payment was 30% to 50% of the house's value. This created a housing shortage and new building codes combined with guidelines allowed the government programs to increase the period in 1952 to the 30-year fixed rate and 5% down payment. In contrast to the end of the 20th century, the first time that the guidelines were used to loan 97% in 1958 was for the veteran returning from World War II and housed in public housing. This historical information shows that the guidelines closely followed the available funds and underwriting changes. The industry was in its fledgling stages for the new and totally automated underwriting guidelines of the late 1990s when all three organizations anticipated that homeownership would reach 100% in America. With the economic crash came quick reductions in the availability of credit.

1.3.2. Establishment of Federal Housing Programs

The establishment of federal housing programs, beginning with the Home Owners' Loan Corporation in 1933 and later the Federal Housing Administration, established in 1934, was in response to a housing crisis during the Great Depression. Failed financial institutions, declining incomes, and increasing levels of unemployment resulted in a surge in foreclosures across the country. Foreclosures were so high that they exceeded the capacity of courts to handle them, and many foreclosure sales resulted in properties being sold for less than was owed on them in a process called "short sales."

The HOLC was given the authority to purchase mortgage loans from conforming institutions. This action had one critical effect: it provided an infusion of cash to lenders for borrowers in the direst circumstances and removed some uncertainty regarding their loan portfolios. Beginning around the same time, the HOLC implemented specific local programs to provide financial assistance to subprime borrowers on a smaller scale, including purchasing delinquent loans and renegotiating loan terms. The strong positive effects of the program, as perceived by lenders and other households, became very clear when no state foreclosure moratoriums were enacted during World War II. The primary influence of the HOLC and the FHA on the mortgage market was the reintroduction of long-term fully amortizing mortgages and the development of the secondary mortgage market innovation of purchasing pooled home mortgage loans. The twenty-five-year-old HOLC and FHA government ideas of long-term government-backed loans would remain mostly stable longer than any other housing finance attribute. These innovations were the spark that lit a flame that snowballed into the concept of the government backing some percentage of the U.S. borrowers' loans. The housing down payment also remains with the market in the current loan origination practices.

1.4. Post-War Housing Boom

Despite governmental controls that were part and parcel of the war effort, the period saw significant growth and adjustment in the financial sector, which more easily facilitated the housing construction programs of the 1942 to 1945 period. More significantly, of course, there was a population shift that followed the war years, in which over 10% of the population moved from mainly rural and urban tenancy to life as homeowners. Little family building post-Depression until after the war exploded in the "baby boom" years to follow. Although not as immediately important to residential lending per se as the other details, one form of the Federal GI Bill was the Servicemen’s Readjustment Act, which allowed a great many returning veterans to qualify for zero-down payment loans, thus fueling the growth spurt in borrowing and homeownership occasioned by the factors of returning to civilian life after a large war; family formation on a large scale, and the homecoming itself.

The beginning of the G.I. Bill led to significant expansion in housing debt - the average required purchase loan-to-value ratio of a new home increased from 43% in 1946 to 67% in 1947. $30 billion in new equity was also generated by the increase in home values between 1945 and 1972, due to the stimulative policy effect of G.I. Bill home purchase activity on the economy and population. The one deposit requirement standard was dropped in June 1959. Systemic change accompanied by change in public and private contracts and legal requirements of private-enterprise lending continued to require many years to evolve. The reintermediation followed accordingly as private and government investment pooled their added incentives to lend again.

1.4.1. GI Bill and Its Impacts

Our analysis begins by exploring the impact of the GI Bill, which provided cheap and easy credit to white American men returning from service in World War II when purchasing a home, starting a business, or pursuing a post-secondary education. Although the FHA required lenders to assess each borrower’s "stable monthly income" while accounting for "volatility of veterans’ earnings," lawmakers placed greater emphasis on guaranteeing the repayment of an individual loan. Consequently, this legislation dramatically facilitated access to credit for single-family homeownership, which served as a critical component of the transition to civilian life for returning servicemen. Historians record that about 10 million American men returned from military service between 1941 and 1945—approximately 7.8 million of whom took advantage of the GI Bill. In total, more than 20 million veterans of the Second World War took advantage of the educational provisions, some 14 million of whom also obtained readjustment counseling and vocational rehabilitation-related services in addition to educational and loan-related benefits.

The record of performance for the major purposes and benefits of the United States GI Bill Programs validates the long-term advantages of a well-educated, owner-occupied society. The GI Bill coincided with the widening of towns as the urban frontier began to transform into inter-war colonial style suburbs of single-family homes. Local demographic patterns mirror concentric circles, and the name for the spatial distribution of populations, particularly in the tri-city area of Fort Collins, Loveland, and Greeley, follows "the suburbs furthest away from the city core are referred to as 'GI Bill Homes.'" This legislation, thus, had a massive and lasting impact on the United States' infrastructure, local community, demographics, and the housing markets. Speculators in the post-war years basically taxed the future home buyers by selling houses at a premium. As home prices rose, the ability of future home buyers to afford a dwelling was based not only on supply and demand but also on how aggressively the incumbent homeowners priced the dwelling relative to the price of other goods. During the war's currency and the Great Depression, a family had split loyalties to savings and consumption, and housing sizes were adjusted based upon market value.

1.4.2. Securitization of Mortgages

Mortgage-backed securities were invented in the late 20th century. Mortgage-backed securities are pools of mortgages sold to investors. The income generated by a mortgage pool is distributed to the investors. The monthly payments from the homeowners are passed on to the investors net of a small fee taken by the mortgage servicer. Hence, a mortgage-backed security represents a direct claim on the monthly mortgage payments made by a household. This view of mortgage-backed securities ignores credit risk, the risk of default on any mortgage that would reduce the number of expected payments to the investor. Because the economic value of an income stream depends not just on its magnitude, but also its timing, and because greater liquidity is achieved when an asset is divided into small shares, the pool of mortgages that serves as collateral for a mortgage-backed security is typically divided into a few tranches, each with different payment schedules. In this way, the lower tranches can provide high-yield, higher-risk investments to investors, while the upper tranches can provide safer, but lower-yielding investments.

The advent of mortgage-backed securities, by allowing housing finance to be integrated into the larger asset-backed securities market, transformed the U.S. mortgage feature constellation proposed into reality. Securitization substantially increases the capital residential mortgage lenders can access, and thereby greatly expands the mortgage market. The international size of the residential mortgage market as well as the range and diversity of the mortgage instruments it supported dwarfs any other mortgage market in world history. Furthermore, securitization reduced the price risk faced by mortgage lenders as a result of the portfolio of mortgages they originate. The larger the pool, the greater the limit on the impact of an individual’s default. This pooling of mortgages, it needs to be stressed, was done for the purpose of pooling the income flows the mortgages generated, not for the purpose of understanding the credit risk of the pool. But securitization presents challenges. Residential mortgages have an average duration not far from their average maturity. Hence, if interest rates rise, the value of the pool of mortgages falls. This creates risk for the investor in a mortgage-backed security. Finally, securitization played a crucial role in the recent subprime financial crisis which continues to unfold.

1.5. The Rise of Financial Innovation in the 1980s

With many of the restrictions lifted by US financial regulators in the late 1970s, an "era of financial innovation" took hold in the 1980s. As a result, the 1980s proved to be a transformative era in the history of residential mortgage lending. New mortgage products were introduced to the market, spreading through the nation's banking and thrift industries, offering homebuyers a slew of alternative lending structures, which varied along flexibility, risk, and time horizon dimensions.

The most influential and long-lasting residential innovation has been the introduction of adjustable-rate mortgages. With an adjustable-rate mortgage, the lender was able to offer an initially low rate that the consumer would certainly find attractive while reducing the lender's exposure to the rising cost of funding. The borrower could thus share in the resulting benefit from the lender's risk-reducing strategy in the form of a lower initial rate of interest. Most significantly, due in large part to regulatory pressure, the terms of adjustable-rate mortgage products were not only loosened with regard to size and standardization but grew to include "hybrid" features combining adjustable-rate mortgage rate adjustments with fixed-rate mortgage equities.

Cumulatively, the effects of the interacting environment and announced changes increased competitiveness, risk, and interest in financial innovation. It was almost universally agreed that the link between banking and capital markets should be strengthened. The role of individual depository institutions could be left largely to the market, i.e., deregulation of the structure of the industry. Those moves promised to expand the array of financial instruments available to banks and other lenders. Ultimately, deregulation would create a safer, more competitive, and efficient banking system. In summary, regulators could justify allowing industry participants to — in fact, emboldening them to — innovate. Political animus to homeownership facilitated these pro-financial innovation moves, even if policymakers may have had doubts as to the readiness of the industry and borrowers for change. In the early 1980s, industry participants were willing more than ever before or since to experiment with their offerings in response to threats from financial instruments that were not on the balance sheets of depository institutions. It was a time when, more than ever before or since, "savants" could get principals to underwrite and sponsor research on the latest innovation differentiating the investment bank's or savant's product from competitors. It was the time of financial innovations because it was the time of investors' love affair with the "New, New Thing." Industry participants had seen Florida land booms. The financial press had long promoted speculative gluttony.

Fig 1 . 2 : The Era of Financial Innovation: Mortgage Market Transformation in the 1980s

1.5.1. Introduction of Adjustable-Rate Mortgages

During the 1980s, one of the most radical financial innovations was the introduction of the adjustable-rate mortgage (ARM) to residential lending practices. ARMs operated as balloons and contained options for adjustment within lenders that were sooner inside the maturity in relation to interest rate settings. Specifically, their interest rates shifted in connection to the evolution of interest rates in the marketplace, except for large-scale changes in rates. Thus, prospective borrowers could take advantage and acquire credit rentals at affordable rates.

As market rates of interest rose, the physical ARMs rose forthwith. As a result, when interest rates on the market subsided, and loan charges at big banks dropped temporarily, modest borrowers faced the chance that their particular costs could rise sooner too. The blend of lower monthly payments and the hope for lower future payments gave an impression of offering the expanded interest charge a robust attraction to buyers swept through the massive betting situation in the late 1980s.

ARMs provided other advantages to commercial banks. Because the adjustment of the ARM interest rate yields annually, the cost of cash to residential mortgage bankers also adjusts annually, which brings adjusted typical returns to the finance from their ARM commercial bank. As a result, banks acquiring ARMs had a smaller probability of remortgaging the loans than managing a fixed-rate assumption. When the ARM interest rate was low, commercial bankers purchased the individual loan cost much lower, fundamentally benefiting the financial ARM types and the company finding new residential borrowers, recruited by virtually all finance options.

1.5.2. Development of Mortgage-Backed Securities

The development of mortgage-backed securities had a major impact on the mortgage sector. Mortgage-backed securities represent a security that pools multiple individual mortgage loans, effectively converting them into interest and principal payments distributed to a multitude of investors. The primary role of mortgage-backed securities is to provide liquidity by enabling investors to sell the structured pool of mortgage payments to other investors, just as they would any other bond security. Lenders who originate these loans benefit from mortgage-backed securities by selling the loan immediately or in the future. This creates a secondary market, and the existence of a real secondary market, in turn, lowers the cost of initial funds to the lender. Furthermore, a key objective of mortgage-backed securities is to redirect the credit risk outside the lending bank. Including mortgage-backed securities often changes the credit risk exposure to the buyers of the securities, thereby improving the capital position for lenders who can then go on to make further mortgage loans.

By providing a conduit for the resale of individual mortgage payments, the secondary mortgage-backed securities market helps the capital markets to indirectly finance the primary residential real estate market. On the one hand, this permits additional capital to be allocated to the other asset classes of an investment pool. This is important because without mortgage-backed securities many investors would be unable or would never choose to individually invest a portion of their capital in a single-family mortgage. On the other hand, the growth in the securities market leads to a larger supply of capital for home loan borrowers. As such, mortgage-backed securities were fundamental in transitioning savings and loan associations in the United States from government-regulated mortgage brokers to commercial banks. The liquidity resulting from the mortgage-backed securities market has been so deep and diverse that the market not only greatly assisted in the market development, but also enabled the development and growth of commercial mortgage business.

1.6. The Role of Technology in Lending

Technology has transformed the world of lending and finance over the past several decades. Automation of the mortgage origination and underwriting process has streamlined loan processing and brought it into the 21st century. Exception-based technologies have allowed financial institutions to consider a much broader pool of potential borrowers by minimizing the need for human intervention in the underwriting process. These innovations have focused attention on the borrower's ability to repay and have shifted the focus from determining the loan's true value to developing an understanding of the borrower's personal characteristics. This is where modern credit scoring algorithms come in, using technical prowess to replace or augment human wisdom. Automated underwriting systems have become standard in residential lending and have become increasingly sophisticated. The latest enhancements have allowed for more frequent updates to the risk layering frameworks used to qualify individual loan files. Despite the potentially discriminatory outcomes of an overemphasis on this borrower character-based approach, these systems are viewed as an administration and human resource efficiency dream. Additionally, modern financial services applications often come with mobile capabilities, allowing users to apply for the financial product and track the status of their request on the go. Online banks will typically develop their applications for modern digital interfaces, improving the customer experience beyond the initial application stage. Customers can also manage their accounts online, applying for mortgages and refinancing directly through a bank's website or mobile app. This is positive for financial markets, encouraging competition but also generating risk through heightened levels of automation. As most banks and financial services companies have websites, the barrier to competition has lowered even more. There are concerns, of course. What if the data is not secure? Will a bank be compliant with all the financial regulations at an affordable cost? These are questions technology has been ultimately tasked with addressing. Financial institutions are forced to comply and protect consumer data. As end-user technology evolves, banks find themselves at a critical juncture after major technological advancements, hoping to maintain market share by providing the seamless borrower experience now demanded by consumers.

1.6.1. Automation of Loan Processing

One of the most significant technological changes to residential lending has been the improvement and automation of loan processing functions. For as long as banks have made loans, taking an application, underwriting (or determining creditworthiness), approving the loan, and disbursing funds have been standard administrative tasks in making new residential loans. Processing a loan application involved taking the applicant's information, transcribing it onto paper, manually verifying information, and following an assembly line of functions that involved checking for clear title and creating legal documents. This process was ultimately replaced by mass-produced forms, but the different functions were accomplished manually as well. Automation of the lending process has changed all of these steps. Now, online loan applications can be filled out by borrowers and transmitted electronically to a lender who might be located across the country. Decision engines can approve or disapprove credit instantaneously. Once a loan is approved, funds can be wired to the appropriate parties within a matter of days.

Without a doubt, the use of automated underwriting engines has greatly improved and standardized the process of mortgage loan selling. Closing costs have been reduced because of the quick disbursement of funds. These engines also hold promise to level the playing field for subprime borrowers in evaluating their credit applications. Electronic disbursements have reduced the cost of transaction settlement to the banks and, with the efficiencies of technology, reduced the demand for bank capital. One passing annoyance presenting an operational challenge to banks in recent years has been how to create the back-office technology to profitably disburse a home equity line of credit, when that practice has become more common due to the advent of electronic property tax payment and the influx of equality between lenders found on some electronic products. The whole process of loan origination is moving toward electronic touchpoints between the bank and the borrower. Loan origination systems and loan administration systems at banks are all moving toward complete electronic integration with entities outside of the bank. This requires sophisticated use of data movement, both internally and externally, and can pose a major challenge to the bank in terms of maintaining data integrity. For example, if the tax rate suddenly changes, the input data on each loan file will need to be manually updated. This problem will become especially clear if a bank has thousands of records in its lending portfolio that need to be updated.

1.6.2. Online Lending Platforms

The development of internet-based and other web-enabled platforms has created a range of new and highly competitive options for general residential borrowers who traditionally relied on banks and larger financial institutions to secure mortgage funding. As a result, non-bank lenders have been able to grow and prosper by appealing directly to clients who compare and select the most competitive mortgage products based on advertised interest rates, application costs, and other loan conditions. Most online lenders claim that their data science and proprietary algorithms allow for sound credit decision-making that often includes some established banking credit scoring components in addition to non-traditional factors such as social media presence, career trajectory, customer recommendations, and other unique data sources that make decision-making more rigorous and meaningful. The adoption of technology in the lending space has uncomplicated the uncomplicated and bypassed traditional residential loan decision-making processes. The technology-based solution operated in this market has made credit information and credit decision-making increasingly transparent and reduced the need for a personalized relationship between banks and their customers. Yet, it is worth mentioning that in the field of P2P lending, online platforms work as mediators by matching borrowers and lenders, rather than lending funds themselves. This approach is far closer to the traditional bank model than what the real alternative finance is. People who financially support someone or something with their money are not obliged to receive this money back, or if something goes wrong, they do not have any remedies similar to bank customers. Regulatory and financial protections remain a major concern for regulators raising the banks' objections to real innovation in the P2P sector. Nevertheless, the originality of the new process is undeniable. At the same time, it is clear that borrowing patterns and lender expectations have been changed by these process improvements.

1.7. Regulatory Changes and Their Effects

Regulatory changes have brought about various structural changes and shifts in lending practices over the years. The Community Reinvestment Act, the Home Mortgage Disclosure Act reforms, the SAFE Act, and the Secure and Fair Enforcement for Licensing Act, along with many other legislations and institutional reforms, have led to increased consumer protection and additional attention toward known market failures over past decades. The Dodd-Frank Act, which was passed in the wake of the recent financial crises that began in 2008, has brought about substantial changes—referred to in this paper as the 'overlaying iceberg,' which captures the idea that many of the practices that took place during financial market 'good times' have simply been instituted in the context of a stronger consumer protection regulatory environment. The adaptation by the lending industry to operate in, above, below, and beyond Dodd-Frank guidelines can also be characterized as a highly problematic process. Even as potential borrowers are being locked out of the mortgage market under QM guidelines, non-QM originations have also been picking up considerably, a form of 'innovation accounting.'

A little over a year after the Dodd-Frank Act became law, the Consumer Financial Protection Bureau came into existence, vis-à-vis the act. This separate bureau under the Federal Reserve was intended to centralize the administration and enforcement of the federal consumer financial laws that protect borrowers in the mortgage, credit card, and other areas from financial institutions. The CFPB's supervisory and enforcement tools cover banks, credit unions, and other institutions, not public companies. Consumer protection, maintenance of service to low and moderate-income parties, and the orderly functioning of financial markets underpinned, directly, the passage of many legislative enactments in the markets, with supervisory and regulatory bodies having an impact on the residential lending markets. Therefore, it will not pose the question of whether the general direction of lending in the years just preceding the recent financial meltdown has come from inside or outside the financial institutions. By repositioning the question of whether the lending practices and eventual outcomes were driven by regulations or the institutions—and to be effective, regulators must understand how such practices are perpetuated, as Dodd-Frank, CFPB, and other reforms must be flexible and support innovation.

1.7.1. Dodd-Frank Act and Its Implications

The Dodd-Frank Wall Street Reform and Consumer Protection Act hinged on reevaluating the culture of consumer protection and systematic regulation in the wake of the financial crisis. Indeed, the strengthened consumer protection authority of federal regulators was one of the cornerstones of the Act and arguably, to consumers, the most noticeable feature of the law. Under Dodd-Frank, the Consumer Financial Protection Bureau established a systemic and functional regime in which abusive and unfair lending and servicing in credit markets would have real consequences.

In Title XIV of the Act, policymakers established stricter standards for the residential mortgage market in statutory response to the mortgage crisis. The Act was aimed at reducing the consumption of high-cost financial products whose pricing otherwise outsized the borrower's payment capacity and equity in collateral. The Act created new overarching standards for mortgage loan origination and servicing, which, primarily for purposes of consumer protection, was designed to identify mechanisms in credit markets that would otherwise discourage borrowers from inception to realize obligations. These mechanisms, of course, aligned with historical practices in anti-predatory lending, while also taking into account the systemic implications of market structure in mortgage transactions. However, as events later revealed, it may have also effectively discouraged lenders from offering a mortgage market primarily made up of plain-vanilla, 30-year, fully amortizing, fixed-rate mortgages. Shortly after passage, a major challenge for many banks was maintaining the necessary infrastructure and operational needs to comply with regulations and still maintain their mortgage business revenues. For those lending highly as prescribed, lower or negative returns were common, straining overall profitability. Current thinking has supported this perspective—that the provision refuses business and custom, especially where thin profit margins were common, and discourages a return to the housing finance market of yore. In consequence, it is this part of Dodd-Frank that former President Donald Trump had seen fit to gut in the Executive Order. Block on the prospect of wanting more severe and acts as a chilling effect on the small lender actions ultimately adopting and adapting accordingly. Given these significant changes that are taking place, it is unlikely that 10-15 years from now, our housing finance market will again have been stable for several decades.

1.7.2. Consumer Financial Protection Bureau

The CFPB was established to better regulate financial products impacting residential lending with an emphasis on consumer protection and increased transparency of real estate finance and insurance products for households. The stated vision of the CFPB is a consumer finance market where customers can see prices and risks up front and where they can easily make product comparisons; they do not have to worry about deception, coercion, or market abuse; and markets and services comply with the law. The primary mission of the CFPB is to implement, enforce, and write rules for the laws affecting household finance customers. The creation of the CFPB comes, in part, because of the belief that the government has not properly enforced consumer protection laws in the past. The purpose of the CFPB was to bring regulation, enforcement, and monitoring of consumer protection laws and services under one new roof in order to avoid raising costs for a consumer or reducing access to credit.

The CFPB was granted authority to regulate products and enact laws such as the Dissemination and Truth in Lending Act mandated by the Mortgage Origination Final Rule, which was designed to protect customers from abusive lending practices and increase the quality of loan services. However, many of the new rules adopt a one-size-fits-all approach to activities in the mortgage market without accounting for the diversity of activities needed to make loans. Existing consumer protection rules already required mortgage loan originators to act in the best interest of the homeowners; they were designed to meet the needs of the individual consuming the service. The CFPB-issued mortgage regulations that went into effect provide strict criteria to determine whether a mortgage is a Qualified Mortgage. The CFPB, in collaboration with other federal agencies, also issued amendments in response to the flood of comments and some requests for clarification of various provisions. There are certainly implications to borrower access to credit and the structure of the mortgage industry that are beyond the basic goals of the CFPB. Since it is the new kid on the block, we simply do not know the eventual effects on individual programs and retail lending structures and practices in general. However, a comprehensive understanding of the historical evolution of residential lending structures may provide some understanding of their significance after years of rapid development in consumer and mortgage credit. Thus, a review of some optics will provide insight into some of the major changes in mortgage finance of the past few years and the potential transient and long-term evolution of investment structures.

Fig 1 . 3 : The Evolution of Banks and Markets and the Role of Financial Innovation

1.8. Conclusion

In the course of this exploration, we have discovered some of the key dynamics of the evolution of residential lending structures and the rise of financial innovation. This perspective serves to better understand current lending practices and their associated risks, as it is difficult to address a system without understanding the forces that have shaped the current environment. This exploratory essay argues that residential lending has always existed within institutional, technological, and macroeconomic constraints, and that society has always found ways to expand accessibility to borrowers.

Due to recent rapid shifts in financial products and lower-cost technology, which has expanded information available to lenders, we are experiencing a new age of financial innovation. The consequences of this new development stand to be just as dramatic and pervasive to borrowers and secondary markets as traditional product and technology shifts were for all the preceding time periods we analyzed. It may be the case that the kinds of subtler, neoclassical consequences of absolute and relative shifts in absolute and marginal costs of transaction have not yet been fully captured. Judging by the pitfalls and patterns of misunderstanding from preceding product and technology shifts, there will be various pitfalls: the challenges on lenders and regulators to adapt, the opportunities for those adapting, and the tide of competitive destruction for those who fight innovation. Residential lending; analyze the interplay between the discovery of a new asset, the development of two subclasses of financial system borrowers, and the development of a full secondary market. This document examines the interplay between credit government housing policy and shifts in secondary market demand. As previously noted, credit market changes are always likely heavily constrained in our society by regulation and credit subsidies, as well as consumer financial education and information. Therefore, the goals are the following: to outline the shifting composition of the financial system borrower classes and the products available to borrowers in the development of residential finance; to analyze residential finance in terms of present value, showing that housing can be seen as a financial asset for homeowners rather than just a service; to sketch the historical evolution of residential financier problems, market solutions, and the role of government interventions; to define the rise of financial innovation, the relationships between financial aggregates and technology and macroeconomic context, and the history and future waves of financial innovation; and to examine the implications for this view of financial innovation on the loan underwriting mistake, to consider the rise of predatory lending in the context of financial innovation and the behavior of our two subclass borrowers and the broker in an era of such innovation.

1.8.1. Summary of Key Insights and Future Directions

This essay has sought to explain the residential lending landscape in the U.S. today. It has done this, we believe, by explaining where the various capital and labor inputs come from, the process by which banks manage an origination process, the secondary market in which mortgage products are sold and serviced, and idiosyncrasies and biases in this process that might generate some sectoral segmentation in the use of mortgage finance. A critical part of our understanding is to see long-term historical links between the U.S. long-duration mortgage option and long-term lending models. But, unlike economic histories that emphasize the importance of contemporaneous technological advancements, we pointed out that the historical coincidence in the emergence of very long loans in the U.S. and financial innovation in the 1920s merely underscores the sociological existence of the affordability heuristic and the fact that private money mortgage lenders were the first data-driven technologies for granting access to home loan finance in the 20th century. Drawing on periods of technological change may suggest some iron laws to the casual eye; for example, that technology leads and institutions follow in the streamlining of credit models might be tempting from a brief glance at new inventiveness in U.S. lending in the pre-2008 period. Yet, we sought not to interpret these predictions as iron laws of development, rather that it required shifts in the lending sector to keep in line with major technological advancements.

There will be many challenges and opportunities for the future dynamics of this market. Lending models relying mostly on FICO scores seem to always open the potential for missing out on populations and are not forward-looking given their micro-view of ability to pay but do have some intertemporal generalizability. It is our view that this has implicit public policy implications, for influencing capital markets investment into real estate as opposed to alternative investment classes. Yet, that view may suggest regulatory burdens. There is, though, the potential that lending might change to become particularly innovative in response to new sources of data, such as mobile phone transaction data, models of future energy costs that relate to particular types of energy-efficient properties, and so on. Such technological changes rarely emerge in a closed market environment, so the future development of proprietary modeling in the U.S. lending and other mortgage markets must happen in the context of open dialogue on the direction of innovations in credit risk. The value of these historical developments is that they give a better sense of the hot metal that constituted today’s debates and the practices of financial architecture. Indeed, they illustrate once again that it is not just historical happenstance that gave us the financial system we study and regulate today, but also the result of the recurrent policy challenges. The vast development of capital, interwoven with new policies, was taken advantage of by participants, generally starting from the latter twentieth century. The new judgmental era will not hold, yet, for the quintessential little guy has systematically turned into the unusual profitability of the subprime and subsequent lender from the twenty-first century. There are nevertheless several unique elements of the present moment that ensure that we do invoke the dangers of high and increasing rates of borrower delinquencies, which are the subject of a very considerable amount of literature in contemporary housing economics.

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