Executive Summary:

This memo describes how mortgages underwriting practices have evolved in the United States over the last century. This research covers the actors who have a bearing on underwriting practices, how technology has changed underwriting standards and practices, and how views around risk and major events have impacted underwriting.

Part 1 provides a high-level framework of how underwriters assess risk and the actors in the market. **Part 2** describes the actors with significant influence on underwriting practices. **Part 3** provides a narrative of how underwriting has evolved over time and focuses particularly on how certain major events, actors, and shocks have led to changes in underwriting standards and practices. **Part 4** provides a brief conclusion.

Part 1: Framework for Underwriting and How Actors Shape Underwriting

Mortgage underwriting occurs when lenders determine whether they view the risk incurred by offering a mortgage to a certain borrower as acceptable before approving the loan. For decades, underwriters have assessed the quality of potential loans by applying a widely-accepted set of criteria known as the "three Cs" – credit, capacity, and collateral.[1] Underwriters typically look at income, credit history, down payment, assets, residency status, and documentation as hard metrics when evaluating whether to grant a loan.[2] While these principles and criteria have remained generally unchanged in the American mortgage industry since the early twentieth century, the specific processes by which underwriters evaluate a prospective loan have evolved a great deal since the 1960s, with especially pronounced changes resulting from the adoption of new information technologies.[3]

There are several actors in the mortgage market that influence underwriting practices. First, lenders retain significant discretion in lending decisions and underwriting standards. Second, actors operating in the secondary market, such as Federal National Mortgage Association (Fannie Mae) and Federal Home Loan Mortgage Corporation (Freddie Mac), have an impact too. Fannie and Freddie, as government-sponsored enterprises (GSEs), buy mortgages from lenders, thereby adding liquidity to the broader system. However, these GSEs only buy mortgages that meet certain underwriting standards, thus influencing lending decisions. Third, government agencies such as the Federal Housing Administration and the Veterans Affairs administration have a role insuring mortgages for some segments of the population, and through that mechanism they influence underwriting for these mortgages. Lastly, private mortgage insurers also impacted mortgage underwriting by insuring mortgages after their popularization in 1970s.

Part 2: Major Actors in the Underwriting Market

Fannie Mae: Fannie Mae (and its counterpart Freddie Mac) operate in the secondary market for mortgages. These government-sponsored enterprises (GSEs) purchase mortgages from

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[1] "The 3 Cs of Underwriting Factors Used in Freddie Mac's Automated Underwriting Assessment," Freddie Mac, last modified August 2019, available at sf.freddiemac.com/content/_assets/resources/pdf/fact-sheet/3-cs-uw-factors.pdf; Straka W., John, "A Shift in the Mortgage Landscape: The 1990s Move to Automated Credit Evaluations," *The Journal of Housing Research*, Vol. 11, No. 2., 2000, pp. 207 – 232 at p. 210.

[2] Green, Richard K. *Introduction to mortgages and mortgage backed securities*. Academic Press, 2013, p. 61.

[3] Foote, Christopher L., Lara Loewenstein, and Paul Willen. "Technological innovation in mortgage underwriting and the growth in credit: 1985–2015." (2018).

lenders and package them into mortgage-backed securities (MBS), either holding the resulting MBSs as investments or selling them off to investors. By virtue of this secondary market activity, Fannie Mae and Freddie Mac provide cash to the mortgage system, and thus allow for the creation of more mortgages and more varieties of mortgages than would otherwise be available. Fannie Mae has an important bearing on mortgage underwriting standards because it only buys mortgages that conform to certain of its lending standards ("conforming mortgages"). These conforming features include maximum loan limits, loan to value ratio limits, and sometimes seller (i.e. lender) requirements to share in losses.[4] Fannie Mae (and its counterpart Freddie Mac) also on occasion prohibits certain loan terms, such as mandatory arbitration clauses, in the mortgages it purchases.[5] Fannie Mae typically purchases mortgages from large commercial banks.[6]

Freddie Mac: Freddie Mac is like Fannie Mae in that it is a GSE, operates in the secondary mortgage market by purchasing mortgages from lenders and packaging those mortgages into mortgage-backed securities, and by only buying loans that conform to certain of its lending standards.[7] Unlike Fannie Mae, Freddie Mac focuses on purchasing mortgages from small banks and thrifts.[8] Freddie Mac also became involved in mortgage securitization earlier than Fannie Mae.[9]

Federal Housing Administration (FHA): The FHA is now part of the Department of Housing and Urban Development (HUD). The FHA, among other things, provides mortgage insurance on loans made by FHA-approved private lenders. This insurance is charged as a premium to mortgage borrower, which then funds a pool used to compensate lenders of defaulted loans. Loans must meet certain requirements to qualify for FHA insurance, and this is the mechanism by which the FHA influences private underwriting practices. The presence of FHA mortgage insurance additionally allows for, all else equal, lower interest rates and lower down payments on loans, and enables lenders to grant loans they otherwise would forgo, each of which is a designed outcome of FHA involvement in the market.[10]

Veterans Affairs Administration (VA): The Veterans Affairs Administration (VA) helps U.S. veterans obtain home loans by insuring a portion of the loan for the lender, thereby allowing veterans to either qualify for a mortgage outright or qualify for more favorable terms than would otherwise be possible. VA home loans are offered by private lenders, similar to how FHA-qualified home loans are offered by private lenders. VA-qualifying loans still require certain credit scores and other conforming terms for a lender to originate a loan under VA

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[4] "What We Do," Fannie Mae, fanniemae.com/about-us/what-we-do; "Form 10-K for the year ended December 31, 2019", Fannie Mae, p. 17.

[5] Mayer, Caroline E., "Fannie to Set New Policy on Arbitration Clauses," The Washington Post, February 4, 2004, available at https://www.washingtonpost.com/archive/business/2004/02/04/fannie-to-set-new-policy-on-arbitration-clauses/826fa822-34c8-42e3-b607-fca607aab31a/.

[6] "Fannie Mae Vs Freddie Mac: What's The Difference," Rocket Mortgage, available at www.rocketmortgage.com/learn/fannie-mae-vs-freddie-mac

[7] "Our Business," Freddie Mac, available at http://www.freddiemac.com/about/business/

[8] "Fannie Mae Vs Freddie Mac: What's The Difference," Rocket Mortgage, available at www.rocketmortgage.com/learn/fannie-mae-vs-freddie-mac

[9] "A brief history of housing: government-sponsored enterprises," Federal Housing Finance Agency Office of Inspector General, pp. 3-4, available at www.fhfaoig.gov/Content/Files/History%20of%20the%20Government%20Sponsored%20Enterprises.pdf.

[10] "The Federal Housing Administration (FHA)," Housing and Urban Development, available at www.hud.gov/program_offices/housing/fhahistory.

programs.[11]

Part 3: Evolution of Mortgage Underwriting

This section discusses how underwriting has evolved in response to new technologies, practices, and policies. It will also discuss how the above-listed actors have had an impact on underwriting through their home loan programs.

i. Origins and Emergence of the FHA, the VA, Fannie Mae, and Freddie Mac:

Congress created the Federal Housing Administration (FHA) in 1934 in the wake of the economic damage wrought by the Great Depression. The FHA and other Great Depression-era laws and institutions contributed to the underpinnings of the modern mortgage system we know today. Prior to the FHA, lenders were generally wary of lending to borrowers who did not make large down payments – this had the effect of limiting mortgages to only those with significant means.[12] One effect of FHA's new mortgage insurance scheme was to open mortgage borrowing to a much larger swath of people. To protect taxpayers from defaults, however, Congress ensured that only certain mortgages were eligible for FHA-insurance. FHA standards applied to down payments, repayment schedules, LTV ratios (loan-to-value ratios, the amount of the loan as a portion of the total appraised property value), and DTI ratios (debt-to-income ratios, the borrower's annual repayment as a portion of their annual income). These national rules quickly created a convergence to common underwriting standards by mortgage lenders, in line with congressional aspirations for the new agency.[13] The 1944 GI Bill followed not long after, and among other things, established the aforementioned Veterans Affairs Administration (VA). Patterned on the FHA, the VA offered insurance for qualifying home loans made to veteran borrowers.[14]

Congress established Fannie Mae in 1938 to help banks finance the newly created long-term, fixed rate mortgage loan.[15] Prior to the creation of Fannie Mae, banks struggled to identify sufficient funds to continue making home loans during the Great Depression. The role of Fannie Mae was to purchase mortgages on the secondary market from banks, thereby expanding their liquidity. Fannie took on greater importance after the passage of the1968 Housing and Urban Development Act, through which Congress converted Fannie Mae from a corporation partly owned by the federal government to a corporation completely owned by private shareholders but chartered by the Congress[16]. Freddie Mac was created in 1970 to provide competition for the newly private Fannie Mae. Fannie and Freddie would only purchase loans that met their criteria, so banks acceded to their requirements for a portion of their mortgage lending.

ii. Underwriting in the Early Period Pre-1970s Was Manual and Varied by Lender

The period through roughly the mid-20th century was one in which lending was driven in

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[11] "VA Home Loans," U.S. Department of Veterans Affairs, available at www.benefits.va.gov/homeloans/index.asp; "VA Home Loan Types," U.S. Department of Veterans Affairs, available at www.va.gov/housing-assistance/home-loans/loan-types/.

[12] Green, Richard K. *Introduction to mortgages and mortgage backed securities*. Academic Press, 2013, p. 4.

[13] Gotham, Kevin Fox. "Racialization and the state: The Housing Act of 1934 and the creation of the Federal Housing Administration." Sociological Perspectives 43.2 (2000): 291-317 at pp. 296 – 300.

[14] Green, Richard K. *Introduction to mortgages and mortgage backed securities*. Academic Press, 2013, p. 5.

[15] "History," Fannie Mae, www.fanniemae.com/about-us/who-we-are/history

[16] Green, Richard K. *Introduction to mortgages and mortgage backed securities*. Academic Press, 2013, p. 4.

large part by local savings and loans associations and other depository institutions. These institutions had a large foothold in the residential mortgage market.[17] The relatively local nature of these institutions meant that they relied on local knowledge, expertise, and connections to assess credit risk of borrowers.[18] Famously portrayed in the 1946 film *It's a Wonderful Life*, lending activity in this era reflected, in part, personal decisions and community mores. Observers characterized underwriting guidelines and mortgage products as "pretty vanilla" or otherwise fairly simple and straightforward.[19] Mortgage underwriting was largely carried out manually by career underwriters, who "did not follow a systematic, step-by-step approach to evaluate a loan." Instead, underwriters would typically "look at the strengths and weaknesses of the individual elements in a loan file and evaluate how all the data elements affect one another."[20]

While the extant technology and the natural evolution of underwriting dictated *how* financial institutions engaged in due diligence related to mortgages government agencies and policy had a significant impact on *what* underwriting standards existed. In these early years most lenders required a loan-to-value ratio lower than 80% but would accept a higher one if the repayment of the mortgage was backed by mortgage insurance. From the mid-1930s to late 1950s, government agencies including FHA and VA were the only source of mortgage insurance.[21] Moreover, Fannie Mae primarily and largely bought mortgages insured by FHA before 1970,[22] which made the FHA's underwriting requirements especially important. FHA first provided its appraisers with an Underwriting Manual in 1935 and reprinted it in later years. The manual gave a detailed guide to measuring risk for mortgages to be insured – loan to appraised value standards not to exceed 80 percent, fully amortizing mortgage structures, and 20-year maximum mortgage loans, among other terms.[23] FHA also adopted a notoriously discriminatory practice called "redlining," which instructed appraisers to give lower appraised values to minority communities, as shown in **Exhibit 1**. This practice significantly hurt African Americans' chance of acquiring a mortgage and fostered racial segregation in housing. The passage of the Fair Housing Act in 1968 made redlining illegal, but it has had long-lasting effects on minority communities.

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[17] Snowden, Kenneth A. The anatomy of a residential mortgage crisis: A look back to the 1930s. No. w16244. National Bureau of Economic Research, 2010, p.6.
[18] Michael Fratantoni, "Oral History," interviewed by Andrew O'Shaughnessy, June 26th, 2020, audio and script available at apl.reclaim.hosting/oral-histories-2/michael-fratantoni-chief-economist-and-senior-vice-president-of-research-and-industry-technology-at-the-mortgage-bankers-association/
[19] Hank Cunningham, "Oral History", interviewed by Michael Cai, March 23rd, 2020, audio and script available at apl.reclaim.hosting/oral-histories-2/hank-cunningham-former-president-of-cunningham-company-and-the-mortgage-bankers-association-of-the-carolinas
[20] Talebzadeh, Houman, Sanda Mandutianu, and Christian F. Winner. "Countrywide loan-underwriting expert system." AI magazine 16.1 (1995): 51-51.
[21] Canner, Glenn B., and Wayne Passmore. "Private mortgage insurance." Fed. Res. Bull. 80 (1994): 883.
[22] Fabozzi, Frank J.; Modigliani, Franco, "Mortgage and Mortgage-backed Securities Markets," Harvard Business School Press (1992), p.20, ISBN 0-87584-322-0
[23] "FHA's Manual Offers Details on Loans Work: Second Printing of Book on Underwriting Explains Risk Factor," The Washington Post, Washington, D.C., June 21, 1936; "The Anatomy of a Residential Mortgage Crisis," Snowden, Kenneth A., Working Paper 16244, NBER, July 2010, p. 24.

Exhibit 1: Redlining Terms in the 1936 Underwriting Manual by FHA[24]

Part II 253-257 UNDERWRITING MANUAL

253. Some areas which may lack in accommodations or conveniences usually regarded as requisites for stability will possess an appeal created by the social class of occupants, or prestige created by associations, which will make properties at the locations as marketable as any similar value range location within the city. The Valuator must determine whether or not the younger generation which will represent the market for these properties at a future date will regard the area as equally desirable. In many instances this prediction will be difficult to make. In others it can be easily ascertained. The Valuator must, in any event, study possible changes in the attitude of the future market before rating this feature.

254. The geographical position of the location in relation to the city considered with the effects of favorable or unfavorable topography will have a distinct bearing upon the rating of this feature. Those areas which lie in a path of city growth where the topography of the ground lends itself to economical development, in the absence of other conditions which may exert an adverse effect, will be found to possess a strong appeal.

255. The utilities and conveniences available to a location will have a pronounced effect upon the appeal. A lack of desirable conveniences exerts a negative effect which must be reflected in the rating. Presence of noisy and high-speed traffic arteries, railroads, commercial or industrial properties, or the presence of incompatible racial elements results in a lowering of the rating, often to the point of rejection. The approach to the neighborhood is of importance. Where it is necessary to pass through a slum or an otherwise undesirable area in order to arrive at the location less appeal will be present than where such a condition does not prevail.

iii. Underwriting standards became more uniform from the 1970s to 1990s

Since 1970s, mortgage underwriting at many financial institutions has been further standardized, in most cases to conform to the expectations of public or quasi-public corporations that purchased mortgages on the secondary markets. Fannie Mae and Freddie Mac became increasingly important to lenders' underwriting after they started to securitize loans. Private mortgage insurance, first invented by Mortgage Guaranty Insurance Corporation in 1957, became more prevalent. The private insurers partially replaced the role of government agencies like FHA and VA in mortgage underwriting by occupying a larger share in mortgage insurance market.

In 1970, Congress authorized Fannie Mae and Freddie Mac to purchase conventional mortgage loans (i.e. those not insured by government agencies like FHA and VA).[25] As these new conventional loans dominated the market and private mortgage insurance became more available, mortgage lenders referred to the underwriting guidelines of Fannie and Freddie more than the FHA's *Underwriting Manual*. Freddie and Fannie further expanded their influence in the market by creating mortgage-backed securities (MBS). In 1971, Freddie Mac issued the first conventional loan MBS, which packaged the conventional loans into a security that investors could buy.[26] As MBS grew in popularity during in 1980s, Freddie and Fannie

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[24] "Underwriting Manual", Federal Housing Administration, Nov. 1st, 1936, available at babel.hathitrust.org/cgi/pt?id=mdp.39015018409253&view=1up&seq=1

[25] Fabozzi, Frank J.; Modigliani, Franco, "Mortgage and Mortgage-backed Securities Markets," Harvard Business School Press (1992), p.20, ISBN 0-87584-322-0

[26] "A brief history of housing: government-sponsored enterprises," Federal Housing Finance Agency Office of

became essential intermediaries within the value chain of the mortgage market and set the underwriting standards that almost all major lenders accepted.

Fannie Mae and Freddie Mac would only purchase loans that met their criteria and therefore banks conformed to their requirements around what industry insiders refer to as "knock-out rules." Before the 1990s, both Fannie and Freddie applied the univariate "knockout-rules" that specified maximum cutoffs for factors such as the LTV (loan-to-value) ratio and the DTI (debt-to-income) ratio (i.e. if any criterion was violated, the loan would be excluded from purchase by Fannie/Freddie).[27][28] Additionally, the Federal Home Loan Bank Board (FHLBB)[29] published annual conforming limits that specify the maximum loan amount of the conforming loans that Freddie and Fannie can buy. The limit gradually rose from $33,000 in 1970 to $252,700 in 2000 for single-family properties.[30] Mortgage lenders used these rules to guide underwriting decisions. As Daniel Berry, CEO of Duke University Federal Credit Union, has noted, "the federal government changed some of their requirements and regulations, and to be in compliance you needed to adopt such practices."[31] Up through the mid-1980s, however, the practice of underwriting remained a matter of individuals examining paper documentation and applying loan criteria to that overall borrower file. Exhibit 2 shows Freddie Mac underwriters at work in 1985, poring over paper evidence about income, home valuation, and proposed loan amount.

Inspector General, pp. 3-4, available at www.fhfaoig.gov/Content/Files/History%20of%20the%20Government%20Sponsored%20Enterprises.pdf.

27 For example, Fannie Mae reported in 2018 that for manually underwritten loans, the maximum permissible back-end DTI ratio (which includes non-housing debt) is 36 percent of the borrower's stable monthly income. Sources from: "Selling Guide," Fannie Mae, https://singlefamily.fanniemae.com/media/document/pdf/selling-guide-october-2-2018

28 Straka, John W. "A shift in the mortgage landscape: The 1990s move to automated credit evaluations." Journal of Housing research (2000): 207-232.

29 The Federal Home Loan Bank Board (FHLBB) was a board created in 1932 that governed the Federal Home Loan Banks (FHLB). The agency was superseded by the Federal Housing Finance Board (FHFB) in 1989, which was then superseded by Federal Housing Financing Agency (FHFA) in 2008.

30 "History of Conforming Loan Limits", Federal Housing Financing Agency, available at www.fhfa.gov/AboutUs/Policies/Documents/Conforming-Loan-Limits/loanlimitshistory07.pdf

31 Daniel Berry, "Oral History", interviewed by Maria Paz Rios, April 17th, 2020, audio and script available at apl.reclaim.hosting/oral-histories-2/daniel-berry-ceo-of-duke-university-federal-credit-union/

Exhibit 2: Image of Freddie Mac Underwriters, 1985[32]

In 1985, Freddie Mac underwriters helped implement a new generation of quality-control procedures. Every mortgage Freddie Mac buys is now screened for five factors that, over the corporation's fifteen years of experience, have proved pivotal in predicting risk.

Underwriting digitalized in 1990s and models became more important

After several decades of little change, the emergence of standard consumer credit scores prompted significant transformation of American mortgage underwriting. In 1989, the Fair Isaac and Company introduced its “FICO” score, based on consumer credit files in three national credit bureaus.[33] Several lenders quickly noticed that their predictions of potential borrower default could be significantly enhanced by using those credit scores.[34] Almost simultaneously, Freddie Mac and Fannie Mae developed and tested several sophisticated empirical models that assigned weights to different parameters of a mortgage. For example, Freddie Mac started to use its Gold Measure Worksheet to assess mortgage loan risk, as shown in **Exhibit 3**. This worksheet, as well as other empirical models, weighted credit scores heavily and downplayed traditional indicators like the DTI ratio, which some economists had found to have less predictive power. Freddie Mac and Fannie Mae’s experiments also showed that the empirical models were more accurate at predicting defaults than human underwriters, so long as borrower information was input accurately.[35]

The development of consumer credit reports by credit bureaus, credit scores, and mortgage risk modeling all depended on advancements in computing capacity and software development. The 1990s saw the popularization of personal computers and internet both for individuals and corporations. By the end of the decade, improvements in information technology allowed lenders to convert their empirical models to computer programs that functioned as automated underwriters. In 1997, Freddie Mac and Fannie Mae launched in-house automated underwriters - Loan Prospector (LP) and Desktop Underwriter (DU) - and distributed these to the mortgage lenders for their reference. Soon thereafter, many private

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[32] “Report,” Federal Home Loan Mortgage Corporation,” 1985, available at hdl.handle.net/2027/coo.31924061865790

[33] “Our History,” Fair, Isaac and Company, available at www.fico.com/en/about-us#our_history

[34] Foote, Christopher L., Lara Loewenstein, and Paul Willen. "Technological innovation in mortgage underwriting and the growth in credit: 1985–2015." (2018).

[35] Ibid.

lenders launched their own automated underwriting technologies. **Exhibit 4** displays the interface of Desktop Underwriter, which asked for inputs of the key features of a loan, including loan type, appraised value and LTV ratios. Once an employee entered the key variables, the program recommended either loan approval or rejection.

Over the subsequent two decades, the turn to computer algorithms refashioned mortgage lending. Hank Cunningham, former president of a North Carolina mortgage banker, points out that the transition to automated underwriting "was the beginning of when lenders began to reduce some of the documentation from borrowers that had previously been required" because lenders would collect only the information required by automated underwriters.[36] As Daniel Berry observes, automated underwriters improved the efficiency of the process because they helped agents get an answer and close a loan more quickly.[37] The automated underwriters did improve efficiency, but they also left loopholes for fraud that was seen in 2000s.

[36] Hank Cunningham, "Oral History", interviewed by Michael Cai, March 23rd, 2020, audio and script available at apl.reclaim.hosting/oral-histories-2/hank-cunningham-former-president-of-cunningham-company-and-the-mortgage-bankers-association-of-the-carolinas

[37] Daniel Berry, "Oral History", interviewed by Maria Paz Rios, April 17th, 2020, audio and script available at apl.reclaim.hosting/oral-histories-2/daniel-berry-ceo-of-duke-university-federal-credit-union/

Exhibit 3: Freddie Mac Gold Measures Worksheet, 1995[38]

Freddie Mac

GOLD MEASURE WORKSHEET—Version 2.0

Borrower/Co-borrower Name(s) ____________

City, State ____________
Lender Loan Number ____________
Origination Date ____________
Completion Date ____________

Seller Name ____________
Freddie Mac Seller Number ____________
Freddie Mac Loan Number (if available) ____________
Branch Office/Channel ____________
Underwriting Center ____________
TPO Name ____________
Underwriter ____________

Loan Decision Approved __ Denied __ Withdrawn __ File Closed __

Directions:

- Circle the appropriate "Risk Units" (RUs) for each category. Total the RUs in each section and enter on the Subtotal line. Then combine Subtotals for each section and enter the Grand Total on the Total RUs line. Note that negative numbers such as "–2" are risk offsets.
- It is important to read the accompanying *Gold Measure Worksheet and Instructions—Version 2.0* booklet and to refer to it for additional information on completing this worksheet.
- This worksheet is an aid, not a substitute for the underwriting decision.
- Complete **either** Credit File A **or** Credit File B, but not both. Use Credit File A if 3 credit scores are requested. Use Credit File B if fewer than 3 credit scores are requested. See the *Gold Measure Worksheet and Instructions—Version 2.0* booklet for easy instructions on how to order bureau and bankruptcy scores for use with Credit File A.

I. Credit File A

Directions: When using Credit File A, complete **either** the Bureau Score **or** the Bankruptcy Score, but not both.

Bureau Score Equifax Beacon Score, Trans Union Empirica Score and TRW-FICO Score (See instructions)	RUs	**Bankruptcy Score** Equifax DAS Score, Trans Union Delphi Score and TRW-MDS Score (See instructions)	RUs
Over 790	–16	150 or less	–12
771 – 790	–14	151 – 200	–10
761 – 770	–11	201 – 240	–4
731 – 760	–7	241 – 300	–3
721 – 730	–5	301 – 320	–1
701 – 720	0	321 – 360	0
681 – 700	6	361 – 420	4
661 – 680	8	421 – 480	8
641 – 660	12	481 – 540	11
621 – 640	17	541 – 620	15
601 – 620	20	621 – 700	18
581 – 600	23	701 – 740	21
541 – 580	25	741 – 840	23
540 or less	32	841 – 960	25
		Over 960	29
No reported Score available	20	No reported Score available	20

I. Credit File A.
Subtotal of circled **RUs**: ______

II. Income

	RUs
Self-employed and above area median income:	5
Majority of income from commissions:	5
Employed second earner on application:	–2
Borrower's time on job is 5 years or more:	–2
Co-borrower's time on job is 2 years or more:	–1

II. Income. **Subtotal** of circled **RUs**: ______

III. Loan, Collateral, Assets

LTV/TLTV (including secondary financing*) is:

LTV/TLTV	RUs
60.5% or lower	–27
60.6 – 70.5%	–16
70.6 – 80.0%	–5
80.1 – 85.5%	–1
85.6 – 90.5%	0
90.6 – 93.5%	2
93.6 – 94.5%	5
94.6 – 95.5%	8
95.6 – 96.5%	10
96.6 – 98.5%	11
98.6 – 99.5%	13
99.6 – 99.9%	15

Property seller contributions exceed 3% of value: RUs 5

Reserves are:

	RUs
Less than 1 month	8
At least 1, but less than 2 months	5
At least 2, but less than 4 months	0
At least 4, but less than 5 months	–3
5 or more months	–6

Less than 5% down from borrower funds with 95% LTV (e.g. Affordable Gold with 3/2 Option): RUs 8

III. Loan, Collateral, Assets.
Subtotal of circled **RUs**: ______

*When secondary financing is included, if the secondary financing provides for any amortization (payments) before maturity of the Freddie Mac loan, then add 1% to LTV for every rounded percentage point of secondary financing. Likewise, add 0.5% to LTV for every rounded percentage point of secondary financing, if there is no amortization (no payments due) before maturity of the Freddie Mac loan. Unsecured grants or gifts require no adjustments to LTV.

I. Credit File B

Directions: Use Credit File B if fewer than 3 credit scores are requested.

No delinquencies or other derogatory tradeline or derogatory public record information and number of tradelines (open or closed) is:

	RUs
11 or more	–4
6 – 10	–3
1 – 5	0

One or more revolving tradelines and **total** revolving balances are under $500: RUs –4

Fewer than 3 tradelines (open or closed): RUs 2

Percent of all tradelines (open or closed) ever delinquent or worse (30-90 days or more, collection, charge-off, etc.):

	RUs
0 – 10%	–3
11 – 15%	0
16 – 40%	4
41 – 60%	8
Over 60%	11

Worst ever derogatory credit file entry is either:

- 30–180 days delinquent: RUs 6

or

- Public record (bankruptcy, foreclosure, judgment, lien, garnishment, suit, certain collections) or tradeline reported as over 180 days delinquent, charge-off, repossession or collection: RUs 10

Number of derogatory Public records:

	RUs
0 – 1	0
2 – 3	4
Over 3	9

Number of inquiries in the past 3 months:

	RUs
0	–2
1	0
2 – 3	5
4	8
5	11
More than 5	14

Age of **oldest tradeline** (in months):

	RUs
0 (no tradelines) – 6	18
7 – 12	13
13 – 24	7
25 – 48	3
49 – 72	2
73 – 120	0
121 – 168	–1
169 or more	–2

If age of oldest tradeline is 13–48 months and **any one or more** of the following:

- More than 3 inquiries within the past 3 months
- More than 3 tradelines opened in the past year
- Total open balances exceed $10,000

RUs 6

I. Credit File B.
Subtotal of circled **RUs**: ______

IV. Debt-Payment Burden

Debt-to-income ratio is:

	RUs
Less than 32.6%	0
32.6 – 38.5%	2
38.6 – 40.5%	4
40.6 – 42.5%	7
42.6 – 44.5%	10
44.6 – 46.5%	13
46.6 – 48.5%	15
48.6 – 50.5%	18
Over 50.5%	30

Spread between total debt and housing ratios (i.e. nonhousing debt ratio) is:

	RUs
10 to 15%	2
More than 15%	5

Proposed housing expense is less than 120% of previous housing expense: RUs –1

IV. Debt-Payment Burden. **Subtotal** of circled **RUs**: ______

V. Loan/Property Type

Loan type is:

		RUs
Fixed-Rate:	15-Year	–6
	20-Year	–4
	25-Year	–1
ARM:	Rate-Capped	6
	Payment-Capped	8

Property type is:

	RUs
2 Unit	5
3–4 Unit	11
Condominium	5

V. Loan/Property Type.
Subtotal of circled **RUs**: ______

Total of sections I A or B, II, III, IV and V. **TOTAL RUs:** ______

Freddie Mac Risk Unit Guideline:	15 RUs
If pre-purchase counseling:	16 RUs
If post-purchase counseling:	17 RUs
If pre- and post-purchase counseling:	18 RUs

Refer to *Gold Measure Worksheet and Instructions—Version 2.0* booklet for more information. This worksheet is an aid, not a substitute for the underwriting decision. Call your Account Representative for additional information.

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38 Avery, Robert B., et al. "Credit risk, credit scoring, and the performance of home mortgages." Fed. Res. Bull. 82 (1996): 621.

Exhibit 4: Screenshot of Desktop Underwriter Findings[39]

Lenders Relaxed Underwriting Requirements in early 2000s

With optimistic expectations and views on the housing market, lenders started to loosen their requirements starting from the late 1990s. The Housing and Community Development Act of 1992 required the GSEs to meet "affordable housing goals" set annually by the Department of Housing and Urban Development, which led them to enter the Alt-A and subprime mortgage (mortgage loans that have lower credit scores) market.[40] Hybrid adjustable-rate mortgages (ARM) became popular in early 2000s, enabling lenders to sell their mortgages to the Wall Street buyers more easily, sometimes as private-label securities without involvement of GSEs. Richard Cordray, former attorney general in Ohio and former director of CFPB (Consumer Financial Protection Bureau), pointed out that "lenders began to feel that they didn't really even have to qualify good borrowers to take these loans because the value of the collateral, that is the home, would always make up for the borrower's inability to repay the mortgage, and they could always foreclose on the home and sell it and get their money back. As a result, completely irresponsible lending practices were engaged in."[41]

In the subprime mortgage market, evidence of widespread fraud mounted during the early 2000s. The operation of automated underwriters relied on the accuracy of the data input, but underwriters could exaggerate or fabricate the characteristics of a mortgage loan to manipulate the process. One of the most common practices committed by mortgage brokers

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[39] "Desktop Underwriter," Karen Jones, August 19th, 2016, available at http://homeloansbykarenjones.info/what-is-desktop-underwriter-du-trending-data/

[40] Holmes, Steven A. "Fannie Mae Eases Credit To Aid Mortgage Lending," The New York Times, September 30, 1999.

[41] Richard Cordray, "Oral History," interviewed by Sean Nguyen, April 8th, 2020, audio and transcript available at apl.reclaim.hosting/oral-histories-2/richard-cordray-former-director-of-the-cfpb-and-ohio-attorney-general/

or lenders was to falsify the borrower's information, especially income level. Other ways to qualify a homeowner for a loan involved inflating the value of the home through a partnership with an unscrupulous appraiser or adding a dummy cosigner.[42] Richard Cordray believed that massive frauds existed in Bank of America, Chase Bank, Citibank, and Wells Fargo, and General Motors Acceptance Corporation (GMAC), the five biggest lenders in Ohio, among which he sued GMAC for their fraudulent practices.[43]

Part 4: Conclusion

Since the post Great-Depression era, mortgage underwriting practices have been shaped by the evolution of public policy and technology, as well as the swings of the business cycle. Before the 1970s, lenders relied on their knowledge of local communities to underwrite loans while conforming to the requirements of government agencies like FHA and VA. Underwriting standards became more uniform from the 1970s to 1990s, with Fannie Mae and Freddie Mac purchasing and securitizing more loans in the secondary market. The invention of credit scores made it possible to use quantitative models to evaluate loans, and automated underwriters appeared in late 1990s with adoption of information technology. In early 2000s, some lenders took advantage of the relaxation of lending standards and loopholes in the underwriting process to issue completely irresponsible loans, a development constituted a key cause of to the subprime mortgage crisis in 2007.

[42] Renuart, Elizabeth. "An overview of the predatory mortgage lending process." Housing Policy Debate 15.3 (2004): 467-502: p.481

[43] Richard Cordray, "Oral History," interviewed by Sean Nguyen, April 8th, 2020, audio and transcript available at apl.reclaim.hosting/oral-histories-2/richard-cordray-former-director-of-the-cfpb-and-ohio-attorney-general/