Digital Innovation Drives Loan Quality

Resist rising costs and declining profits with smart process automation.

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Freddie Mac
SINGLE-FAMILY

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A New Market Dynamic

The mortgage industry has been on quite a rollercoaster ride for several years. Since 2020, the mortgage industry has been impacted by remote operations, record low rates, unprecedented mortgage volume and high margins, all while navigating a global pandemic. However, as with any interest rate sensitive industry, the landscape continues to evolve and fluctuate.

Today, mortgage lenders encounter a new paradigm: an environment of increasing mortgage rates, coupled with decelerating but still growing home prices **(Exhibit 1)**. These conditions have resulted in a drop off in demand, shrinking production volume while adding stronger competition, higher origination costs and compressed margins.

Exhibit 1

Mortgage Rate Trend

Source: Freddie Mac

Loan Quality Matters More Than Ever

At times like this, organizations are looking for ways to optimize their loan production processes. One way to accomplish this is to invest in loan quality assurance strategies, as producing poor quality loans tend to expose organizations to higher losses and costs. To achieve a successful long-term loan quality process, mortgage originators should adopt effective optimization strategies and seek out operational innovations.

While there are costs associated with implementation of technology and change processes, the investment in quality assurance can translate into a big impact on the operation's bottom line.

> Investing in digital automation can improve your overall loan quality, **saving you time and money**.

This study shows that the most effective companies—those with better loan portfolio quality—maximize the benefits of digital transformation through process and business model innovation and tend to operate at lower costs with reduced cycle times. The insights and best practices gathered in this research can help mortgage lenders create a path to higher quality and more competitive lending operations—essential in today's environment.

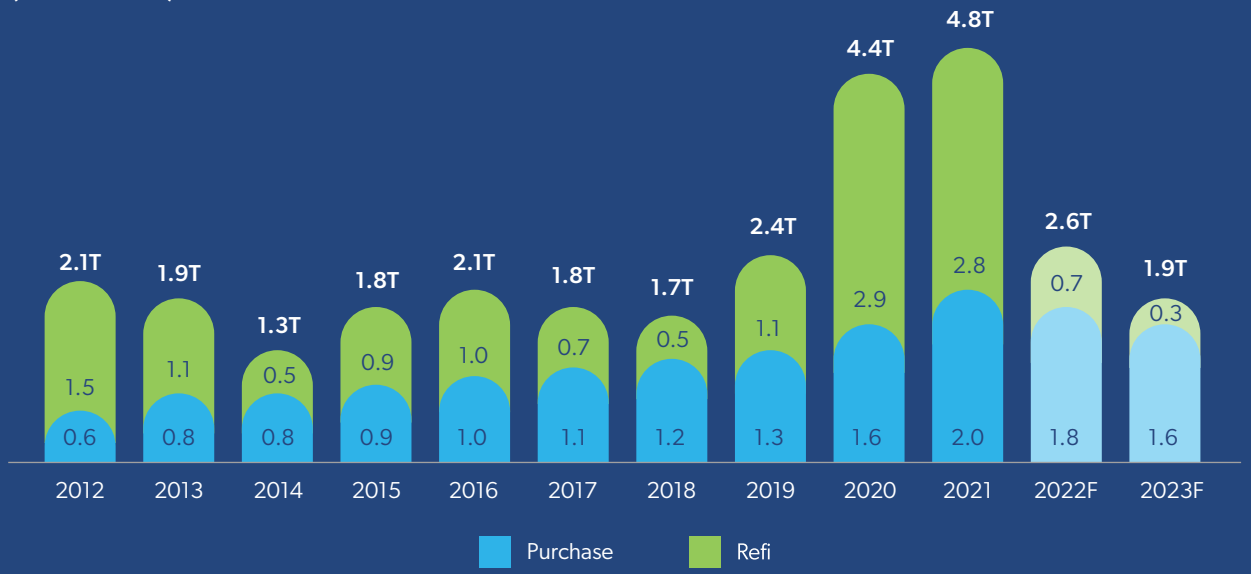
2

Go Digital for a Real World Impact

As purchase mortgages begin to dominate lenders' production mix **(Exhibit 2)**, competing for today's market share is becoming more expensive than ever.

Exhibit 2

Annual Single-Family Mortgage Originations ($Trillions)



Source: Freddie Mac

Keeping Up with Rising Loan Costs

In fact, according to the Mortgage Bankers Association (MBA) Quarterly Performance Report, in the first quarter of 2022, the cost of loan production had reached a record high level of ~$10,600 per loan. As seen in **Exhibit 3**, in the span of a decade, between Q1 of 2012 and Q1 of 2022, industry mortgage production costs have doubled, increasing from ~$5,300 to ~$10,600. While regulatory compliance is one of the major drivers of the ramp up, other factors including inefficient loan manufacturing processes, excess capacity occurring during periods of low loan production volume (diminishing economies of scale) and higher technology spends have also had an impact on costs.

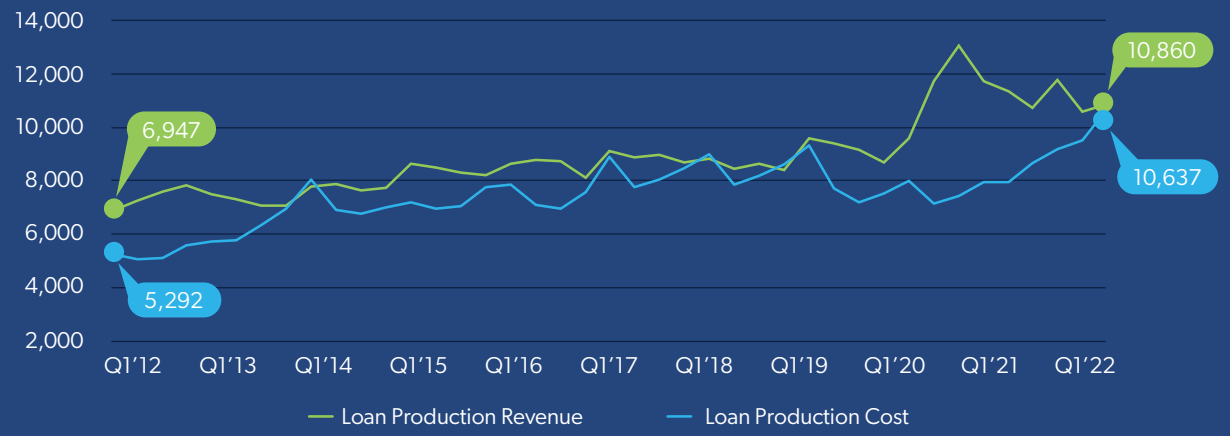
In 2020 and 2021, some lending institutions experienced a slight decline in origination cost per loan due to increased economies of scales driven by high volume and a less costly refinance-dominated production mix. According to the MBA, efficiencies from technology could also be a driver of the decline in the origination costs. However, as interest rates started climbing, so did production expenses. Notably, comparison of 2021 and 2022 average costs per loan shows that costs have grown across each expense line item as economies of scale have diminished and more expensive purchase mortgages have come to dominate lenders' production mix.

It's no surprise that in this increasingly challenging environment, the natural response for many mortgage operators is to cut costs. However, if cost reduction affects the quality-related functions of the operations process, the cost of poor-quality loans could outstrip the expected benefits of cutting quick expenses.

> Poorly managed quality-related costs can account for up to **40% of total lender operations**."
>
> The American Society for Quality (ASQ)

Exhibit 3

Loan Origination Revenue and Cost Per Loan



Source: MBA

Defect Rate = # of Loans with Unsatisfactory Status* / # of Total Loans in the QC Sample**

* Count of loans that went through Freddie Mac's QC (quality control) process and identifying as having some type of defect

** Total count of loans that went through Freddie Mac's QC

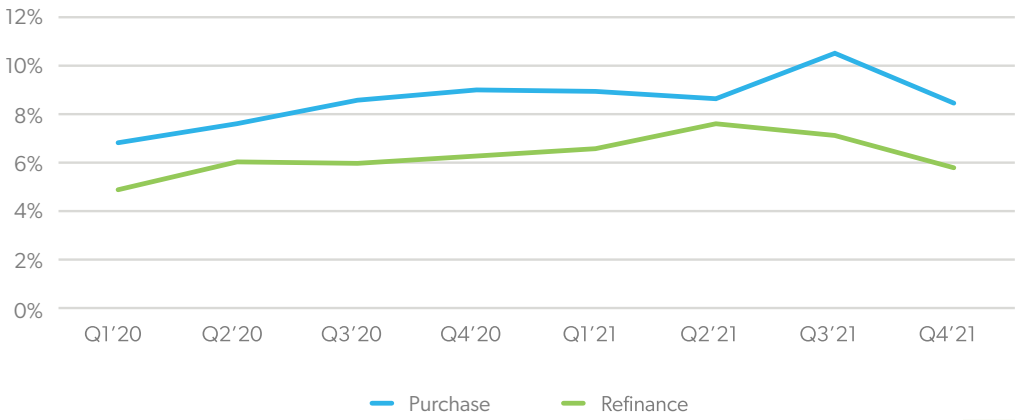
The High Price of Mistakes

Focus on loan quality is especially important in today's purchase-heavy production environment as purchase money mortgages, on average, exhibit lower loan quality than refinance loans. Our analysis of quarterly defect rates **(Exhibit 4)**, the proxy measurement for loan quality used in this study—across Freddie Mac's funded purchase and refinance mortgages shows that purchase transaction loans average 36% higher incidence of defects in comparison to refinance loans.

Based on this and given today's heavy purchase production mix, we can expect to see an overall decline in loan portfolio quality. As the already inflated costs of loan production and inherently higher risk of defects could potentially lead to even higher costs over the life of the loan, it is becoming increasingly important to develop less risky and more efficient strategies to help create processes to achieve higher loan quality.

Exhibit 4

2020 - 2021 Defect Rates by Loan Purpose



2-year Average Purchase to Refinance Defect Rate Difference: **36%**

Source: Freddie Mac

Go Digital and Slash Defects

While there are various solutions to achieve effective quality assurance operations for consistent and robust processes, lenders should consider adopting innovative solutions into their business models and incorporating digital tools into the business operations.

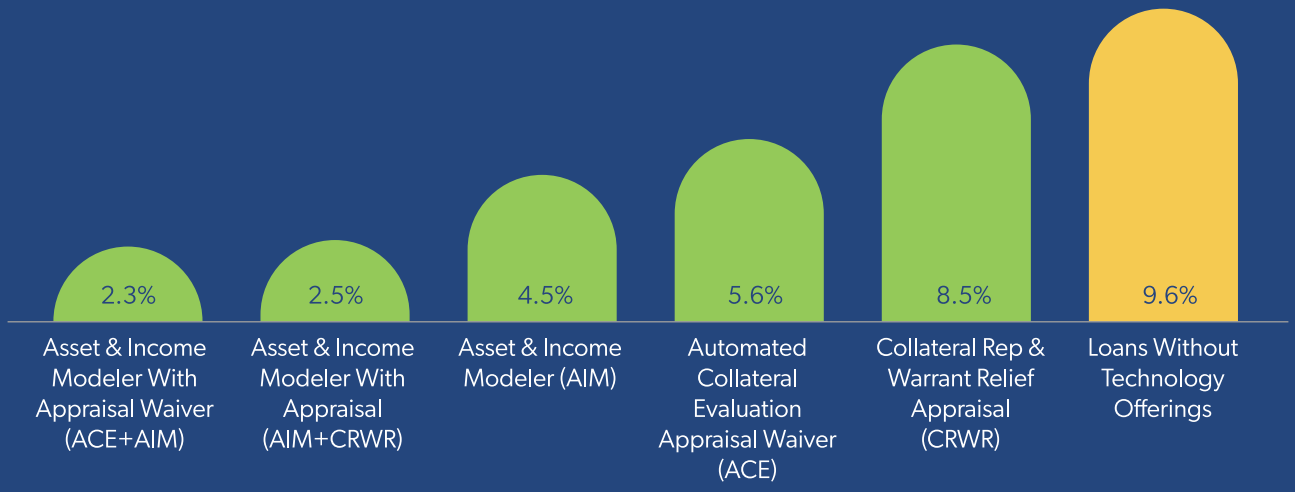
To showcase the impact that process automation has on lenders' loan quality, we compared average defect rates across loans purchased by Freddie Mac in 2021 with and without automated solutions **(Exhibit 5)***. Our analysis of these loans[1] revealed that mortgages originated using digital solutions reduced defects, especially mortgages with income-related deficiencies.

For instance, loans originated by lenders leveraging automated collateral evaluation (ACE) appraisal waivers and Loan Product Advisor® asset and income modeler (AIM) offerings are four times less likely to produce defects than loans without these technology offerings (2.3% vs 9.6%). This is closely followed by AIM with an appraisal that received collateral representation and warranty relief (AIM + CRWR), which is 3.8x (2.5% vs 9.6%) less likely to produce defects. In third place are loans originated using only AIM (2.1x), with those using only ACE in the fourth spot (1.7x) in terms of quality enhancement impact. Of note, while collateral rep and warranty relief with appraisal has a minor impact on quality defects, it still tracks below the defect rate of loans without any technology offerings.

These findings highlight the importance of reducing manual processes and increasing automation to achieve effective loan quality operations. Process automation is especially beneficial for income documentation, both in the collection and assessment process, which according to our historical data comprises nearly one-third of all defects.

Exhibit 5

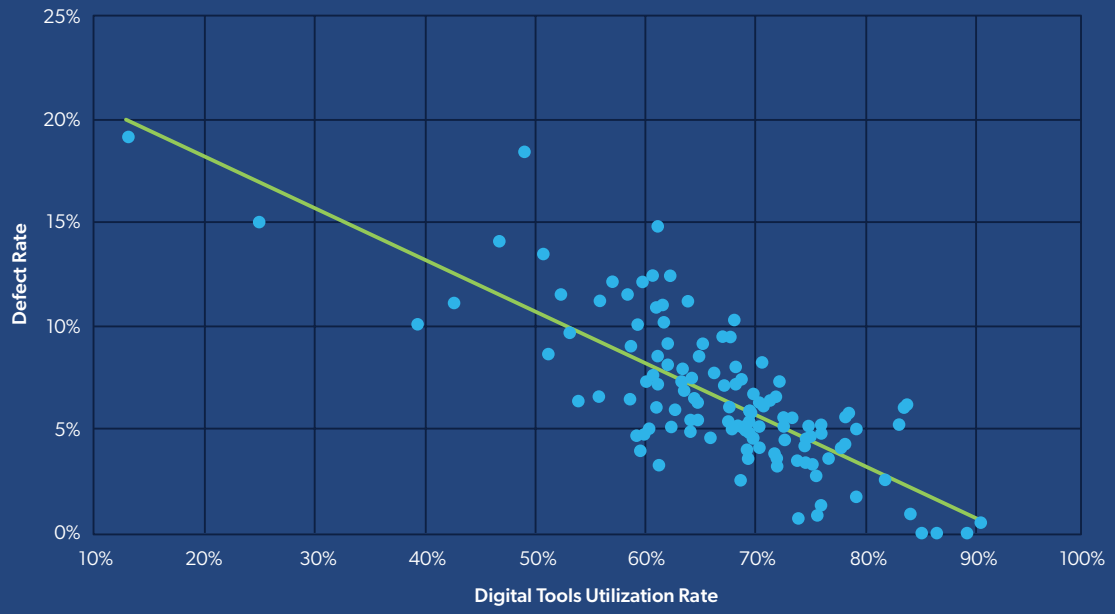
Defect Rates for Loans with and Without Technology Offerings



Source: Freddie Mac

Exhibit 6

Comparison of Lenders Digital Tools Usage Rates and Defect Rates



Sample utilized includes lenders with threshold of 60 qc'd mortgages or more.

Source: Freddie Mac

Exhibit 7

Costs and Cycle Times Comparison of Lenders Digital Tools Utilization Rates

	Technology Tool Offerings Take Rate[3]		Variance
	High	Low	
Origination Cost Per Loan[4]	~$10,300	~$12,000	~$1,700 less
Mortgage Cycle Time[4]	~35 days	~42 days	7 days shorter
Defect Rate[5]	~6%	~10%	4% points lower

Source: Freddie Mac, MBFRF

A Total Quality Mindset Pays Off

While results and benefits can vary depending on institutions' individual volume, size, operational practices and dominant loan characteristics, our comparison of lender-level digital tools usage rates[2] and average defect rates shows that lenders who maximize the use of digital innovation options enjoy overall better quality loan portfolio with fewer defects **(Exhibit 6)**.

As we dig deeper and compare cost, time and loan quality operational performance of lenders[3] using automated offerings at different levels, we find lenders who use automated offerings[4] at high rates:

- Show **40% fewer loan defects** than lenders with a lower usage of technology offerings.
- Originated loans that, on average, were **~14% or $1,700 less costly per loan** than lenders with a lower usage of technology offerings.
- Have a **seven-day shorter loan production cycle time**, an improvement of 18% compared to lenders with a lower usage of technology offerings.

The MBA estimates technology spend across the industry ranges between 4% to 10% of the cost to originate, depending on the institution size and type. Combined with the above findings it could suggest the higher use of technology can be financially and operationally beneficial despite the spend.

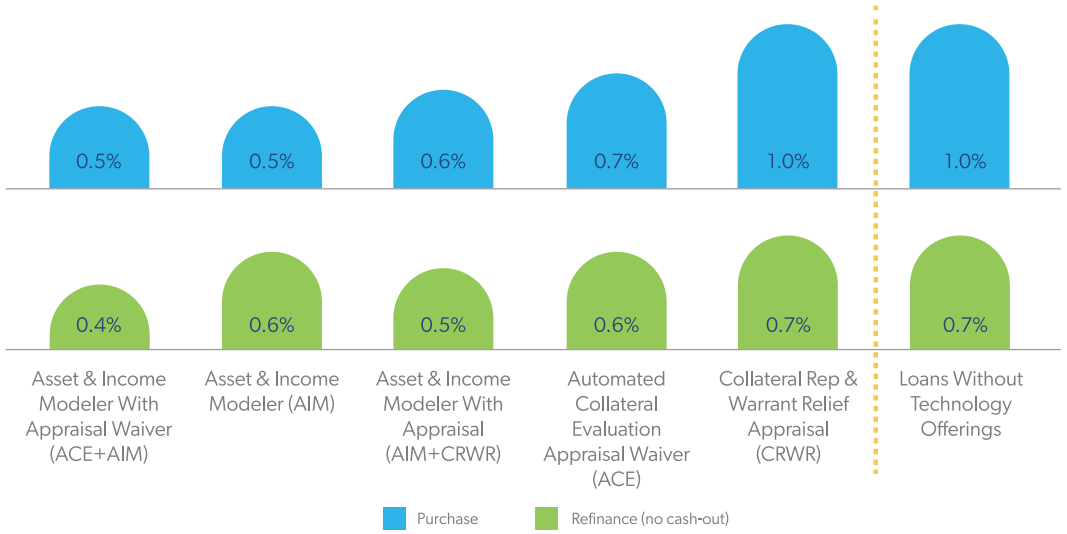
Digital Tools Lead to Higher Performing Loans

Furthermore, when it comes to life of the loan risk profile, our preliminary analysis of Freddie Mac's loan performance data for loans funded between Q1 2018 and Q1 2022, adjusted based on credit characteristics to qualify for automated tool decision*, suggests loans leveraging digital tools such as AIM or ACE perform better over time and show lower delinquency rates than loans that do not use technology offerings **(Exhibit 8)**. Although technology offerings are still relatively new to the market, as digital tool adoption grows, such tools and technology could help lenders mitigate risk and drive improvement in overall loan quality and portfolio performance.

Exhibit 8

Ratio of Non-Performing Loans Across Purchase and Refinance (no cash-out) Mortgages With and Without Technology Offerings

Mortgages funded between Q1 2018 and Q1 2022



Source: Freddie Mac

Note: In order to produce consistent loan performance comparison, the data sample was restricted to a collection of loans that could be eligible for the automated tool decision such as AIM and ACE (i.e., Loan Product Advisor (LPA) Accept Risk Class, Single-Family 1-unit dwellings, Primary and Secondary Residences, and LTV restrictions (PMM<=80% and No-Cash-out Refinance <=90%).

3

Investing in a Digital Future

Maximizing the use of digital tools and process automation solutions can have a direct correlation to better quality loan manufacturing process, and can help lending institutions to:

- More effectively scale to manage business demands
- Reduce errors, costs, and time to close
- Increase consistency of loan decisions
- Foster better customer satisfaction and loyalty
- Drive more referrals

You Can't Afford to Stay Stagnant

It may seem costly to implement technology and change processes, but the investment in quality assurance during a challenging market may have a big impact on an organization's bottom line long-term. The cost of technology can be offset by considering these benefits:

- Higher margins
- Lower delinquencies
- Increased operational efficiency
- Higher upfront loan quality
- More effective cost management

- Reduced risk and higher confidence originating affordable loans
- Fewer loan data errors
- Fewer loan repurchase requests
- Greater secondary market purchase eligibility

Ultimately, industry economists forecast market originations to be driven by purchase activity in the next two years, with overall volume decreasing. The natural response for many loan originators in such a market might be to cut costs. However, our research suggests it's more critical than ever for lenders to invest in and focus on smart automation solutions while establishing robust loan quality assurance practices.

4

Appendix

Freddie Mac Loan Product Advisor® (LPA℠) is Freddie Mac's automated underwriting system (AUS). It gives users access to Freddie Mac's credit requirements, allowing you to easily identify the overall underwriting risk.

WebMB (MBA source): The underlying company data is derived from the Quarterly Mortgage Bankers Financial Reporting WebMB Form, through a joint agreement with MBA, Fannie Mae®, Freddie Mac, and Ginnie Mae. Independent mortgage companies are required to submit quarterly MBFRF data to the agencies and have the option of releasing their data to MBA for use in aggregate industry statistics.

Mortgage Bankers' Performance Reports: The quarterly and annual performance reports provide current data on the revenues and expenses associated with the origination and servicing of one- to four-unit residential mortgage loans. Detailed information on production and servicing volume mixes by product type also included.

Loan Coverage Advisor®: A Freddie Mac tool that calculates and tracks the selling representation and warranty relief date for every loan sold to Freddie Mac, based on the requirements under the rep and warranty framework.

Endnotes

* Freddie Mac Loan Product Advisor® (LPA℠) delivers several beneficial automated solutions. ACE appraisal waivers allow lenders to originate certain loans without an appraisal, while AIM provides a way for lenders to leverage third-party verified data to automate their assessment of a borrower's capacity to repay a loan. Furthermore, an appraisal with collateral rep and warranty relief provides lenders with information about eligibility for relief from reps and warranties related to the appraised property value, thereby reducing a lender's risk of repurchase due to collateral-related defects.

1 The data used represent a full sample set of 2021 Freddie Mac-funded loans reviewed for quality.

2 Digital tools usage rate measures percentage of lenders' loans in a given time period that leverage Freddie Mac's technology offerings (i.e., AIM, ACE, etc.).

3 To compare accurate picture of financial results (costs) across lender base, we leveraged a set of retail-only lenders, mainly independent mortgage banks, that report their financial results to the agencies using MBFRF data source.

4 Lenders with high automated offerings use rate defined as those that leverage Freddie Mac technology offerings (i.e. AIM, ACE, etc.) for at least 75% of all the volume sold to Freddie Mac in a given time period. Lenders with low usage of digital offerings (lower take rate) defined as those that leveraging Freddie Mac technology offerings (i.e., AIM, ACE, etc.) less than 50% of all the volume sold to Freddie Mac in a given time period. The take rate ranges were based on tool usage statistical distribution across Freddie Mac lender base.

4 Sample of financial and cycle time data for a period of Q1 2022.

5 Sample includes Freddie Mac's QC data for the full year 2021 to capture more of a representative data sample.