



White Paper

REBUILDING THE MORTGAGE  
INDUSTRY – THE PATH BACK TO  
PROFITABILITY

## Executive Summary

There has been a lot written in the media recently about the current mortgage crisis, and what impact it has had on its victims. Certainly there is not a single reason or cause; rather a complex web of circumstances that created this situation. Consequently, the road to recovery will comprise many components to help ensure this situation doesn't recur.

As we've seen, this market has put a real profitability squeeze on originators and investment banking firms, and many lenders could not survive. There has been a considerable shake-out in the industry. Many fewer originators exist. Some lenders are now owned by investment banking or private equity firms. Many loan programs have been eliminated, and many changes have been made in underwriting policy. There is a lot of talk about what is needed as the industry rebuilds itself, including discussions of new regulations, "back to basics" underwriting, and more resources for investigating and prosecuting mortgage fraud. While there is merit in many of these ideas, BasePoint engenders an approach founded in using fraud and risk management technology to its full advantage, and building the right organizational structures, as well as the most appropriate policies and processes to profitably rebuild the market.

BasePoint recommends a multi-step process to help originators and investment banking firms improve the quality of their portfolios going forward. These steps include:

- Understanding and measuring mortgage fraud and early payment default (EPD),
- Realigning risk management functions and refocusing them on protecting the quality of loan portfolios,
- Systematically monitoring brokers and appraisers,
- Leveraging analytic technology to filter applications and loan pools for high risk for fraud and EPD, and
- Using a standardized process to review high risk applications and loans.

This paper will explore these recommendations in detail and illuminate the road to successful mortgage industry recovery. Now is the time for lenders and investment banking firms to take full advantage of next generation technology solutions to support rebuilding their profitability in this changed market.

## The Road Back to Growth and Profitability

It's hard to escape the dim news, performance and predictions US mortgage lenders and investors are facing every day. What a difference one year can make. A year ago mortgage originators were funding almost \$3 trillion in new loans a year, and many were making record profits. As we've now seen, there has been a persistent rise in mortgage fraud and EPD that, along with other economic factors, threaten this market. Origination volumes have dropped substantially, which adds to the profitability pressure for lenders both large and small. In addition, many investment banks have become more aggressive about monitoring for fraud and early payment defaults over the past year, and kicking back loans to originators as allowed by their purchase agreements. In addition, investment banks have scaled back or ceased buying mortgages for mortgage backed securities all together. These factors drove many lenders out of business. The road toward rebuilding mortgage industry profitability requires getting back to the basics of a solid risk management strategy, a comprehensive fraud management and risk management organizational structure, and sound policies, processes and use of technology.

**Now is the time for lenders and investment banking firms to take full advantage of next generation technology solutions to support rebuilding their profitability in this changed market.**

Now that we have experienced a crisis of profitability across the US mortgage industry, there is a lot of discussion about what is needed to revitalize industry growth and how to rebuild the origination and secondary markets to better protect them from future risk. New state and federal regulations, a "back to basics" underwriting approach, training and education, and more resources to investigate and prosecute mortgage fraud perpetrators are among the tactics being discussed. There is merit in many of these concepts, however at BasePoint we see several key points missing from these discussions. BasePoint supports an approach based on using fraud and risk management technology to its full advantage, and building the right organizational structures, as well as the most appropriate policies and practices to profitably rebuild the market. Let's review these points in greater detail.

### Step 1 – Don't be afraid to use the word "fraud"

Historically, many in the mortgage industry have been hesitant to call misrepresentations "fraud". If there is suspicion of misrepresentation in a mortgage application, there is suspicion of fraud by definition. While many in the industry jokingly referred to stated income loans as "liar loans", there was little appetite to stop the "lies" from happening over the past several years. Many stated income loans originated between 2004 and 2006 contained grossly unreasonable incomes but the loans were approved. Fraud does not have to be proven in a court of law before a loan can be declined for suspicion of fraud. For the industry to move forward there needs to be a common recognition that fraud is occurring and that fraud that was suspected over the last few years, funded anyway and not disclosed to the investment community, has contributed greatly to the default problems causing the so called credit crunch today. For all the

resetting loans going into default today, it would be interesting to review how many of them had legitimate incomes and employers listed on the application of the funded loan.

#### Step 2 – Understand that all fraud and risk matters

The mortgage industry has been dividing fraud, which has historically been unmeasured, into two categories: fraud for housing and fraud for profit. Fraud for housing generally involves borrowers who exaggerate specific details on their mortgage applications to qualify for their dream homes, and at the time have every intention of repaying the loan as agreed. Fraud for profit involves egregious scams to con the lender out of money. Fraud for housing in many cases was considered by lenders to be somewhat harmless, while fraud for profit schemes grabbed front page headlines. Is fraud for housing really as harmless as some lenders seem to think?

**80% of rejected loans and fraud due to early pay default were associated with borrower misrepresentations, while only 20% of fraud schemes were associated with property valuation.**

The common thread of many fraud for profit schemes is property value. Fraud for profit schemes exploit the lender by leaving them holding a property worth less than they loaned to the borrower. Fraud for housing schemes, on the other hand, do not typically exploit the lender but rather fool the lender into thinking a borrower is a better risk than they are. This generally means misrepresenting the borrower's income, employment, intent to occupy, assets or credit profile. The data suggests that fraud for housing isn't harmless. When BasePoint analyzed a large sample of investor rejects and early payment default losses, it became apparent that most of the cost of fraud was the result of fraud for housing schemes rather than fraud for profit. In fact 80% of rejected loans and fraud due to early pay default were associated with borrower misrepresentations, while only 20% of fraud schemes were associated with property valuation.

Mortgage originators need to acknowledge that "fraud for profit" is not the only mortgage fraud that impacts the bottom line. Loan risk coupled with false application information provided by borrowers and/or brokers makes all types of fraud matter. While loan volume was the historical yardstick of success, we can see where this got lenders into trouble and how loan quality is also paramount.

#### Step 3 – Bring underwriting functions back to risk management

The role of underwriting needs to be revisited by originators. During the mortgage boom, underwriting became too closely aligned with the sales and production operations. The focus was on closing as many loans as possible, without adequate regard for risk management. This caused checks and balances between risk management and sales to either be absent, or to be weighed too heavily toward sales. With the recent collapse of the sub-prime industry, lenders should place emphasis on the role of underwriting to approve good loans while protecting from unacceptable risk.

In addition to a renewed strategic focus on fraud, early payment default and underwriting goals, lenders also benefit from examining the processes they use to evaluate repurchase requests. Lenders should put a vetting process in place to ensure that repurchase demands are reviewed, and challenged, if appropriate.

Step 4 – Create an organization to measure and track fraud

Building a robust risk and fraud management organization is critical in rebuilding profitability. Previously within the mortgage industry, most lenders lacked a formal fraud management team with fraud managers accountable for understanding, measuring, and controlling each lender's fraud losses. Consequently, fraud was not well-defined internally and measurement suffered dramatically. Without this important function, there is a lack of focus and a diffusion of fraud reduction efforts.

It is recommended that lenders create a formal fraud organizational structure and appoint or hire a fraud manager that will be responsible for: quality control, repurchase review and challenge, fraud strategy and analytics, fraud reporting and management information systems. This team should establish a formal definition for fraud that is well understood by management and is measured consistently.

In addition, lenders need a renewed focus on overall credit risk management. The credit risk management organization must take a leadership role in setting policies and choosing the right tools and technologies to ensure that lenders are booking the right loans to achieve their production goals while protecting the lender's profitability goals. While the risk management team must work in partnership with the sales and production teams, they must retain their responsibility to ensure the lender's profitability objectives are reached.

Step 5 – Accepting that guideline changes alone do not fully protect against fraud and early payment default

The fear of EPD and foreclosures, as well as changes in what the secondary market is willing to purchase, has caused some lenders to make sweeping changes to underwriting policies. Although originators are tightening standards, mortgage fraud persists.

The following table examines several recent changes many lenders have made, as well as examples of how the fraud trends shift to try and get past the new guidelines. In the last column you'll see how BasePoint approaches the solution to these issues.

New Lending Standards	Resulting Fraud Patterns	BasePoint Approach
Stated loans are being replaced by full or "lite" document loans	Greater use of forged or manipulated income and/or asset documentation.	Assess relationships between income, age, professional years/job years, regardless of document type.

New Lending Standards	Resulting Fraud Patterns	BasePoint Approach
100% CLTV loans are being replaced by maximum 75% CLTV	<ul style="list-style-type: none"> <li>▪ Property valuation misrepresentations (e.g. outdated comps, out of area comps, inflated value)</li> <li>▪ Suspicious down payments (e.g. unseasoned assets, questionable HUD transactions)</li> <li>▪ Greater use of incentives (&gt;5%)</li> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪ Assess property valuation by comparing to the property valuation distribution determined using consortium data.</li> </ul>
Minimum credit score cut-offs have risen by 40 - 60 points	<ul style="list-style-type: none"> <li>▪ Greater credit bureau manipulation (e.g. authorized users, disputes, co-borrowers)</li> <li>▪ Straw buyers/Straw lien holders</li> </ul>	<ul style="list-style-type: none"> <li>▪ Credit scores can have an inverse relationship to fraud</li> <li>▪ BasePoint assesses this risk in the predictive scoring</li> <li>▪ The BasePoint Dynamic TRAITS process assesses changes in income/ credit score relationship.</li> <li>▪</li> </ul>
Restrictions on investment property loans	Increased demand for "second home" loans.	Assess income and property value, common areas of investment fraud.

In short, improved underwriting can help reduce some elements of credit risk, but not fraud risk. Tightening underwriting guidelines will change fraud patterns, and fraud will exhibit different characteristics. The BasePoint solutions contain variables to assess fraud risk from these different perspectives.

One of the most popular modifications has been increasing credit score cutoffs. For non-prime programs, this can actually increase fraud and EPD rates. By simply raising the minimum credit score, many performing loans will be eliminated from these portfolios. While it may lower the overall number of EPD loans, the default rate can actually get worse because the loan volume has been cut drastically. However, many of these higher credit score borrowers should be able to qualify for a prime product. This is a risky population. They may actually carry more risk than the segment that's been eliminated.

Curtailing good loan volume through dramatic and overarching policy changes can exacerbate the profit squeeze in the short-term. Rather than reduce origination volumes through underwriting policy changes or loan program eliminations, lenders should adopt more targeted, data-driven tools to retain the good origination volume, while substantially reducing mortgage fraud and EPD risk. Those tools are technology-based. For example, BasePoint has found that the credit score does not predict early payment default as well as an EPD-specific model such as BasePoint EPD™ Alert. For one lender studied the BasePoint EPD model performed 2½ times better than the traditional credit score at a 10% review rate, resulting in an additional \$10MM in detection of early payment defaults. Given that approximately 27% of credit scores fall in the mid 600-699 range, above many lenders' new credit score cut-off, EPD-specific predictive models can provide significant lift.

**Rather than reduce origination volumes through underwriting policy changes or loan program eliminations, lenders should adopt more targeted, data-driven tools to retain the good origination volume, while substantially reducing mortgage fraud and EPD risk.**

#### Step 6 – Monitor brokers and appraisers analytically

Broker monitoring is another best practice that should be a standard for all wholesale lenders. BasePoint has extensively studied broker-facilitated fraud. Most brokers submit only good loans, but a small segment of the brokers BasePoint analyzed proved to have a higher than average rate of misrepresentations and early payment defaults. In most cases, lenders experience most of their fraud and EPD from a small overall percentage of brokers, typically 10% or fewer brokers.

The underlying catalyst for broker fraud during the boom appears to have been the incentives those lenders offered to brokers to submit loans to them. Broker incentives such as yield spread premiums and rebates from lenders create an environment where brokers may be tempted to put unqualified borrowers into homes they cannot afford, or at higher than feasible mortgage rates. BasePoint's analysis indicated that there was a correlation between the fees and points that a broker charged, and the corresponding level of misrepresentation in those loan packages. For example, if brokers were charging higher fees, there was a higher likelihood that information in the package could contain some material misrepresentations that would lead to financial loss for the lender.

#### Step 7 – Use analytic scores to stop fraud and other elements of risk the way other parts of the financial services industry do

Mortgage originators can learn from the credit card industry of the early '90s. Credit card fraud rates were accelerating at a tremendous rate in 1993. Accordingly, the credit card industry invested heavily in technology to combat fraud and is now experiencing some of the lowest fraud levels in history. Credit card fraud losses in the US have been reduced about 70% since their peak in 1993 and 1994. To achieve this dramatic improvement, credit card issuers adopted pattern recognition technology, which is highly accurate in detecting fraudulent credit card transactions. Similar technology has proven equally effective at identifying fraud and EPD risk for the mortgage industry.

While millions of dollars have been spent in the mortgage industry to automate loan processing and lead generation, adopting technology to

specifically manage fraud and EPD can immediately help prevent future losses and boost profitability. Most traditional fraud products in the mortgage industry are based on comparisons between application information and third-party data sources. Data validation will still have its role, but it's obvious from the current state of delinquency rates and defaults that these practices alone are not sufficient. And relying on credit scores is misleading since the credit score is only effective in predicting risk when the facts of the application are real. Also, the credit score does not take into account important characteristics related to the borrower, loan amount, and loan program. Fortunately, there is a proven predictive analytic technology designed specifically to curb mortgage fraud and early payment default. Pattern recognition fraud and EPD scores enable more timely fraud decisions and more targeted loan reviews.

Predictive analytics use science in conjunction with historical application and performance data to accurately predict the likelihood of fraud and EPD. A comprehensive study by BasePoint analyzed over three million loans originated between 1997 and 2006 and found that if predictive models were deployed early in the loan process, it would help lenders identify which loans were most likely to contain fraud and/or have a high risk of early payment default. This enables originators to review suspect loan applications using an enhanced fraud review process and to reject confirmed fraud pre-funding. In fact, BasePoint's predictive models can correctly identify 40% or more of a lender's loans pre-funding that, if booked, would result in EPD, by reviewing just 10% of total applications.

This filtering approach helps both lenders and investment banks target high risk loans and use their limited resources to investigate those loans with the highest risk. These pattern recognition models are proven effective for detecting fraud, identifying high risk or EPD, and evaluating broker risk. Another advantage of these pattern recognition models is a very low false positive ratio. False positives are high scoring applications that contain no fraud. They are "false alarms". BasePoint's predictive models demonstrate less than 6:1 false positive ratios in production. This means that for every seven high scoring applications that are reviewed, more than one is shown to contain fraudulent misrepresentation. This is a significant advantage over the high false positives triggered by data validation tools. Low false positive ratios enable lenders to easily incorporate this enhanced fraud detection process into their production environment without placing an undue burden on investigative resources. The savings from detecting the fraudulent loan far outweigh the time to review.

**Another advantage of these pattern recognition models is a very low false positive ratio.**

Step 8 – Use a standard process to find the fraud and risk

Once pattern-recognition models are used to identify those loans with the highest risk of fraud and EPD, lenders and investment banks should be using an enhanced loan review process to effectively confirm loans that should not be funded or purchased on the secondary market. The review process differs for reviewing high risk of fraud as opposed to high risk of EPD or other credit risk factors. Fraudulent misrepresentation(s) in a loan or loan application is typically confirmed through a review of the loan file,

with occasional use of external data validation. Risk of early payment default and other credit risk factors requires research into the financial viability of the applicant as it pertains to the particulars of the loan. The income stability and accuracy/existence of assets should be confirmed. Total debt should be reviewed to see if there are obvious expenses missing, or indications that debt is rising. Analysis of the credit report often provides a lot of insight into the trend of the debt burden, and alerts you to indications that the applicant's financial viability might be worsening. Loan program values such as a loan without impounds, high fees and/or large cash-out amounts can also be indications of payment risk.

Step 9 – Share data across the industry to improve fraud and risk management efforts

Finally, contributing data to a cross-industry mortgage consortium is an emerging best practice. BasePoint pools data across lenders and investment banks to provide several key advantages:

- Access to a breadth of multi-client data to create more robust pattern recognition models
- Enhanced ability to predict mortgage fraud and early payment default risk due to significant depth of mortgage data
- Identification of new trends more quickly by leveraging data across multiple lenders and investment banks
- Ability to determine statistical norms across broader populations and measure deviations
- Ability to exploit links and anomalies

This combination of technology, policies and processes helps originators and investment banking firms better navigate the new mortgage industry. Significant reductions in fraud rates and early payment default are achievable by adopting the recommendations discussed throughout this paper. Forward-thinking mortgage leaders have already begun to have success using these methods. The road back to high profitability and growth isn't always easy, but implementing these ideas can make the journey shorter and less painful.

## Summary

In summary, BasePoint Analytics believes the road back to profitability will require the mortgage industry to adopt the following changes:

1. Call a fraud a fraud and do something about it
2. Realize all fraud matters
3. Change underwriting goal to risk management
4. Create a fraud organization and focus the risk management function
5. Adjust guidelines appropriately, but realize that they will not eliminate fraud and early payment default
6. Monitor brokers and appraisers systematically
7. Use predictive scores like other industries to prevent fraud and early payment default
8. Establish a standard fraud and credit risk review process
9. Share data across the industry to catch more fraud and better identify early payment default risk

While the mortgage industry redefines itself in the coming months, BasePoint believes a new approach to analyzing fraud and early payment default risk based on its characteristics will become the standard. It is sound science to build predictions based on data and the patterns within that data. By applying science to the problem and making rational decisions based on data, the industry will undoubtedly make better risk-based decisions in the future.

## About BasePoint Analytics

BasePoint Analytics is a leading provider of predictive analytic fraud and risk management solutions for global banks and the mortgage industry. Using proprietary pattern-recognition technology, BasePoint quickly identifies potentially fraudulent or high risk activity, minimizing losses while accelerating the processing of non-risky records. The company's fraud experts have deep, real-world domain expertise and have successfully solved fraud and risk challenges for many high profile lending institutions. BasePoint works with industry-leading customers in mortgage origination, investment banking and payment cards. Leveraging a client's existing technology, BasePoint provides clients with immediate results and quick return on investment. BasePoint clients achieve dramatic improvements in fraud and loss detection performance using a predictive analytic approach rather than traditional methods.

### Leading Scientists and Top Industry Consultants

BasePoint's team of renowned scientists is dedicated to building state-of-the-art predictive models using the latest advanced techniques. Our fraud and EPD specialists have innovated transactional, application and account-based models that are detecting fraud and EPD in some of the largest organizations across the globe. BasePoint is committed to investing heavily in research and development to provide you with the industry's most effective defense against fraud.

Having successfully managed fraud and risk operations for dozens of the world's highest profile organizations, BasePoint's elite team of consultants has deep domain expertise. Clients can have confidence these professionals will successfully guide you to significant fraud and risk reduction through the integration of analytic models, tools, strategy alignment, and operational best-in-class processes.

### A Global Focus

Fraud and risk do not have geographic boundaries and neither does BasePoint. Our experts have spent years understanding the global nature of fraud and risk migration, and more than a decade researching fraud, risk trends and management throughout the world. Whether your organization is local, national, or spans many continents, we have the expertise and solutions to help.