



Using Transaction Data to Monitor Stress in Lending Portfolios

How lenders can see financial strain building across their book, and act before it becomes delinquency

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Executive summary

Most lenders learn that a borrower is in trouble at the same moment the borrower's trouble becomes a loss event: a missed payment. By then, options have narrowed for both parties. The borrower has often exhausted their savings, taken on other short-term credit, and fallen behind elsewhere.

This dilemma reflects the limited data sources most lenders use to monitor borrowers after origination. Repayment history tells a lender what has already happened, while credit bureau data is often slow to update and is also generally backwards-looking.

Transaction data changes the picture. Customer-permissioned bank account data shows income as it arrives, obligations as they are paid, and buffers as they are drawn down. It can reveal the early signs of financial strain weeks or months before they appear in a lender's own repayment records.

Using transaction data enables lenders to see stress building, and to respond to it in ways that are better for borrowers, better for portfolio performance, and better aligned with the social license of lending.

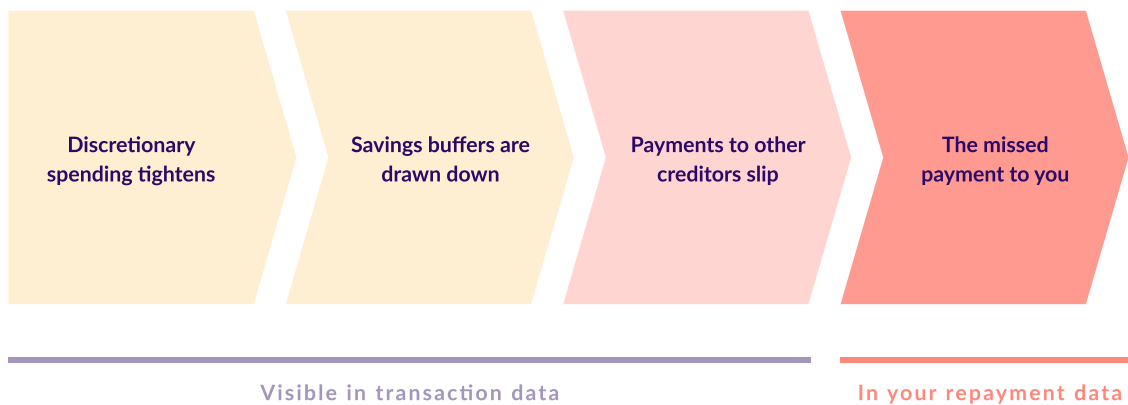
The gap between stress and default

There is often a period between the onset of financial stress and the first missed payment. Transaction data can give lenders earlier visibility into that period, creating more opportunity to offer support while the borrower still has options.

1. The monitoring gap

Stress builds quietly

Financial stress rarely arrives all at once. A household facing higher living costs or a variable-rate repayment increase typically adjusts in stages. First, discretionary spending tightens. Then savings buffers are drawn down. Eventually, payments to some creditors start to slip while others are protected. The actual missed-payment event comes at the end of a long chain of warning indicators.



Stress moves left to right through a household's finances. Only the final step reaches the lender's own data — everything before it is visible in transaction behavior first.

Traditional signals are lagging signals

The data sources most portfolio monitoring programs depend on share a common weakness: they describe the past.

- Internal repayment data is the most reliable signal a lender has, but it is a lagging indicator.
- Credit bureau data adds visibility of other obligations, but it is often stale, does not cover all forms of obligations, and also sits towards the end of the chain of causation.
- Application data captures income, expenses, and circumstances at a single point in time, and quickly becomes irrelevant months or years later.
- Portfolio-level rules, such as flags based on utilization or payment amounts, can be useful, but are blunt instruments, and not relevant to all product constructs. They tend to generate either too many alerts to act on or too few to catch emerging problems.



The window

Weeks, sometimes months, in which the borrower may have more options and the lender can offer support earlier.

Illustrative. The length of the window varies by borrower, product and data coverage.

Visibility is increasingly important

In periods of elevated living costs, rising or persistently high interest rates, and uneven labor markets, relying on lagging indicators becomes a real risk. Stress can spread across segments of a portfolio before it can be picked up by traditional monitoring.

At the same time, expectations of lenders have increased.

Regulatory expectation has increased.

Regulators in many markets expect lenders to identify customers experiencing financial difficulty, to engage early, and to demonstrate fair treatment.

Boards want a forward-looking view.

Boards and risk committees expect forward-looking views of credit quality rather than reports on what has already gone wrong.

Accounting standards require it.

Accounting standards such as IFRS 9 and CECL require expected losses to reflect current and forecast conditions, not just historical arrears.

A monitoring approach that only reacts to missed payments struggles to meet any of these expectations.

2. What transaction data reveals

Transaction data provides a record of a borrower's financial life as it happens. With appropriate consent and analysis, it can surface stress across multiple categories.



Income stability

Income is the foundation of repayment capacity, and changes to it are among the most important early indicators of stress.

- Income disruption: a regular salary deposit that stops, arrives late, or reduces in size
- Income volatility: increasing variation in the timing or amount of income, which may indicate reduced hours, shift-based work, or a move to gig or contract income
- Change in income source: a new employer, a switch from wages to government support payments, or reliance on transfers from family members



Liquidity and buffers

Balances show how much room a borrower has to absorb a shock.

- Declining average balances and a shrinking gap between income arriving and funds running out
- Days of cash on hand: how long a borrower could meet regular outgoings from current balances
- Savings drawdown: transfers out of savings accounts, or reductions in balances held against loans where products allow
- Overdrafts, dishonors, and returned payments, which are often a sign that buffers have already run out



Obligations and credit usage

Transaction data can show obligations that do not appear, or appear late, in bureau files.

- New credit: repayments to lenders not previously seen, including short-term, small-amount, and buy now, pay later providers
- Pay advance and earned wage access use, particularly when frequency is increasing
- Rising repayment amounts on existing obligations, for example after interest rate changes
- Missed or reversed payments to other creditors, utilities, or rent, which often precede missed payments to the lender itself



Spending behavior

Changes in spending can be informative, but they need careful interpretation.

- Essential spending share: a growing proportion of income going to groceries, fuel, utilities, and housing
- Discretionary cutbacks: a reduction in dining, entertainment, and travel spending, which may indicate prudent adjustment or emerging strain
- High-risk spending patterns, such as sharply increasing gambling transactions



Changes in circumstances or behavior

More sophisticated analysis can reveal patterns of activity that suggest possible changes or shocks in an individual's life.

- Location: a significant shift in merchants and geographies of transactions can indicate a disruption in work patterns or in living situations
- Category shifts: a meaningful realignment of spending patterns can indicate a change in personal circumstances
- Behavioral traits: certain patterns of spending associated with healthy or unhealthy financial practices, such as patterns and timing of cash withdrawals

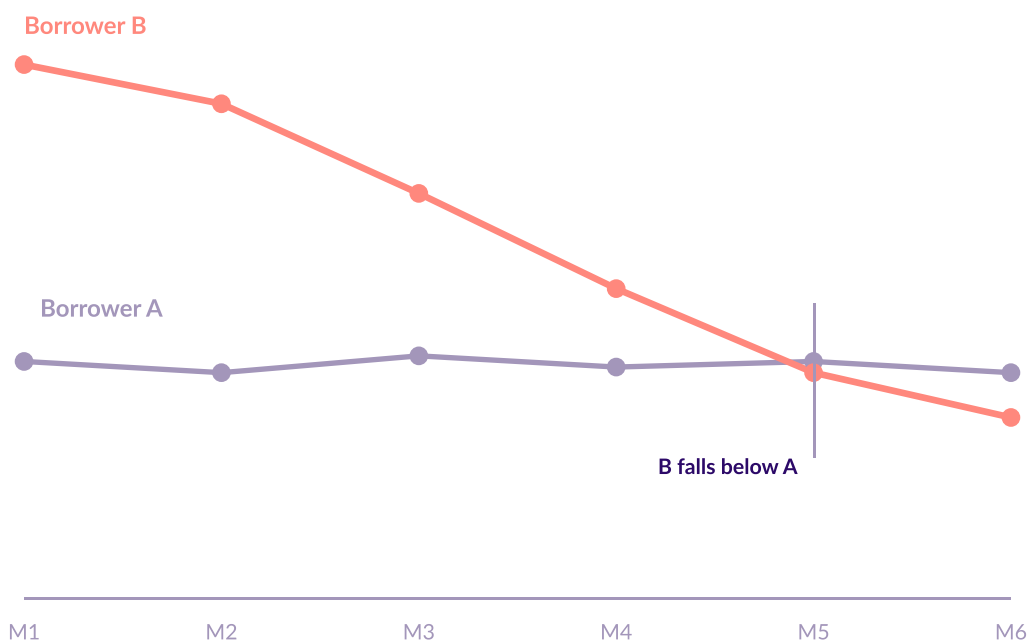
Read them together

Spending signals are rarely conclusive on their own. A borrower who cuts back on discretionary spending may be managing responsibly. The value lies in combining spending changes with income, liquidity, and obligation signals.

Change relative to the borrower's own baseline

Stress is visible both through absolute values of some of these features as well as through changes over time. A borrower with modest but stable balances may be at lower risk than a borrower whose balances have historically been high but are falling quickly. Transaction data allows each borrower to be compared with their own history.

Average balance, Indexed



Borrower B's balance falls over several months before dropping below Borrower A's. Comparing each borrower with their own baseline reveals that deterioration earlier.

A borrower who looks fine

Consider a hypothetical borrower with a personal loan and an unblemished repayment record. On traditional measures, nothing looks wrong.

Their transaction data tells a different story. Over three months, their fortnightly salary has been partly replaced by irregular, smaller deposits. Their average balance has fallen by more than half. A utility direct debit bounced last month.

They have not yet missed a loan repayment. But the signals suggest they are likely to, and that they may benefit from a conversation about their options.

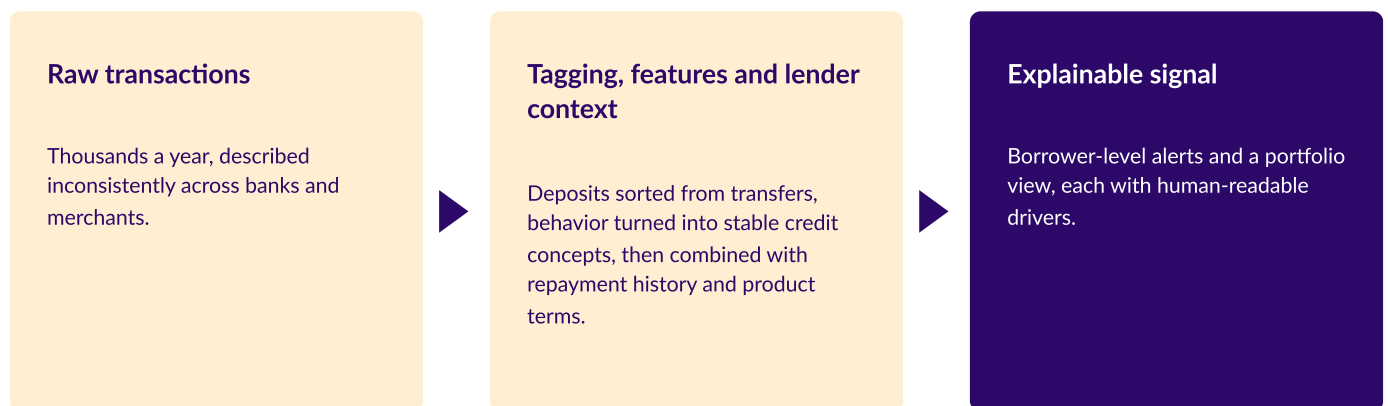
The difference

A lender with this visibility can reach out with support while the borrower still has choices.

A lender without it will likely find out after the first missed payment.

3. From transactions to monitoring signals

Access to transaction data is not the same as insight. A borrower's account can contain thousands of transactions a year, described inconsistently across institutions and merchants. Turning that into reliable monitoring outputs requires several layers of work.



Where it goes wrong

Categorization errors compound. Misclassify a transfer between a borrower's own accounts as income, and a genuine fall in earnings disappears before any model sees it. Accurate tagging is not a preliminary step — it is the step everything downstream inherits.

Tagging and normalization

Raw transactions must be accurately tagged and categorized: which deposits are income and which are transfers, which debits are loan repayments, what a merchant actually does. Categorization errors compound quickly. Misclassifying a transfer between a borrower's own accounts as income, for example, can mask a genuine fall in earnings.

Feature engineering

Tagged transactions are then turned into features that capture the concepts that matter for credit risk: income stability, liquidity trends, obligation load, and changes against baseline. Good features are stable over time, interpretable by credit teams, and robust to differences in how banks describe transactions.

Combining transaction data with what the lender already knows

Transaction data is especially powerful alongside existing data. Internal repayment history, product terms, bureau data, and prior customer contact outcomes all add context. A borrower showing mild strain who has responded well to previous outreach may warrant a different response from one who has not.

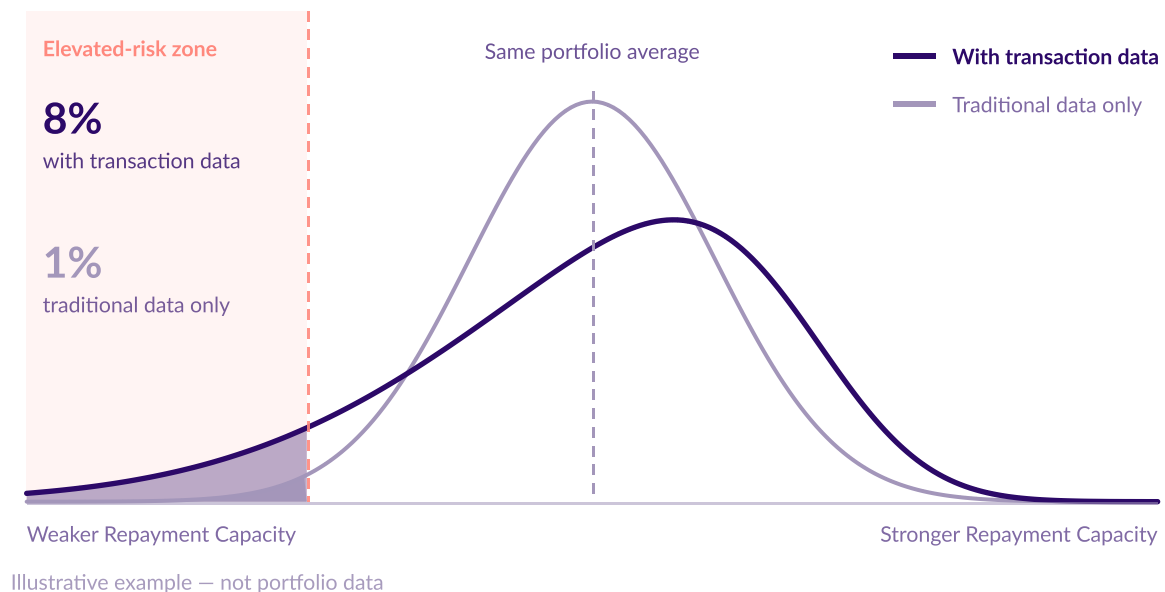
Models built for the portfolio

Stress looks different across products and borrower populations. The signals that predict difficulty for a small-dollar unsecured loan differ from those that matter for an auto loan or a line of credit. Models developed and calibrated on a lender's own borrowers and outcomes will generally separate risk more precisely than generic rules or scores designed for broad use.

From borrower view to portfolio view

Individual signals aggregate into a portfolio picture. Lenders can track stress indicators by segment, product, vintage, channel, geography, or borrower industry, and see where deterioration is concentrated before it appears in arrears reports. This enables earlier strategic responses, such as tightening origination criteria for a segment showing emerging strain, or revisiting assumptions in forecasts and stress tests.

What the portfolio average conceals



Both views describe the same book, with the same average. Traditional data compresses borrowers toward the middle; transaction data separates them — and a much larger share of the book turns out to be under strain.

Explainability

A monitoring signal only creates value if people can act on it with confidence. Credit teams need to understand why a borrower has been flagged. Collections and customer care teams need clear reasons they can use in conversations. Governance and compliance teams need to understand how signals are generated and applied. Monitoring outputs should come with clear, human-readable drivers, not just a score.

4. Acting on earlier visibility

Earlier signals are only valuable if they change what a lender does. Transaction-based monitoring supports action across several functions.

Function	Signal it uses	Action it enables	Potential benefit
Proactive support and hardship	Early income and buffer deterioration	Outreach before arrears: hardship arrangements, deferrals, restructured terms	Early arrangements tend to be more sustainable than those struck after arrears build
Collections prioritization	Deterioration versus a simple timing mismatch	Effort focused where it changes the outcome	Less contact with customers likely to self-cure
Limit and exposure management	Direction of travel in balances and obligations	Slower growth where strain builds, safe increases where it eases	Exposure sized to current capacity, in both directions
Provisioning and forecasting	Portfolio-level stress indicators	Richer SICR assessment and expected-credit-loss estimates	An earlier read on how conditions reach these borrowers
Risk appetite and reporting	Segment-level deterioration	Origination strategy, pricing and appetite settings	A forward-looking view for boards and risk committees

Proactive customer support and hardship

The most direct benefit is the ability to engage borrowers before they fall behind. Early outreach can connect customers with hardship arrangements, payment deferrals, restructured terms, or budgeting support while they still have options. Borrowers who are contacted early are often more receptive, and arrangements put in place early tend to be more sustainable than those negotiated after arrears have accumulated.

This also helps lenders demonstrate that they identify and respond to customers experiencing financial difficulty, an expectation that regulators in many markets have made increasingly explicit.

Smarter collections prioritization

Not every early-stage delinquency carries the same risk. Transaction data helps distinguish a borrower who missed a payment because of a timing mismatch from one whose finances have fundamentally deteriorated. Collections teams can focus effort where it will make the most difference and avoid unnecessary contact with customers likely to self-cure.

Limit and exposure management

For revolving products, earlier stress signals support more measured limit management, reducing exposure growth for borrowers showing strain before balances build. The same data works in the other direction: it can identify borrowers whose financial position has strengthened, supporting safe limit increases or offers that traditional rules would miss.

Provisioning and forecasting

Transaction-based indicators can enrich assessments of significant increases in credit risk and support more forward-looking expected credit loss estimates. They also give finance and risk teams an earlier read on how macroeconomic conditions are flowing through to their specific borrowers, rather than relying solely on external indicators.

Risk appetite, strategy, and reporting

At the portfolio level, stress signals inform origination strategy, pricing, and risk appetite settings. They give boards and risk committees a forward-looking view of credit quality, and they provide early evidence of how a portfolio is responding to changes in interest rates or living costs.

5. Getting it right

Transaction-based monitoring is a powerful capability, and it carries responsibilities. The programs that succeed tend to address the following from the outset.

Consent and data coverage

Transaction data is accessed with customer permission, and consent frameworks vary by market. Consents may expire, require renewal, or be withdrawn. Lenders should plan for incomplete coverage: some borrowers will share data, others will not, and those who share may differ systematically from those who do not. Monitoring strategies should work sensibly across both groups and account for gaps without drawing unwarranted conclusions from them.

Privacy and data minimization

Transaction data is detailed and personal. Strong programs use only what is needed for defined purposes, apply de-identification where possible, maintain clear data retention policies, and are transparent with customers about how their data is used.

Customer outcomes and fairness

Earlier visibility should lead to better outcomes for borrowers, not simply faster action against them. Monitoring signals are best used to trigger support, flexibility, and conversations. Lenders should consider how signals interact with vulnerability, avoid using sensitive characteristics, and test outputs for unintended bias across customer groups.

Explainability and model governance

Monitoring models should sit within the lender's existing model risk management framework, with documented development, validation, ongoing performance monitoring, and clear ownership. Reason codes and explanations should be consistent and auditable.

Operational capacity

A model that generates more alerts than teams can handle creates noise, not value. Thresholds and prioritization should reflect the capacity of collections and customer care teams, and the treatment attached to each signal should be clearly defined before deployment.

Stability in changing conditions

Stress models are most needed when economic conditions shift, which is also when relationships in historical data can change. Regular performance monitoring, recalibration, and out-of-time testing help ensure signals remain reliable when they matter most.

6. A practical path to implementation

Lenders do not need to transform their entire monitoring approach at once. A staged path reduces risk and builds evidence.

1

Start with a priority use case

Choose a product or segment where earlier visibility would clearly change outcomes, such as a book with rising early-stage delinquency or a population with high exposure to rate changes.

2

Assess the data you already have

Many lenders already hold transaction data collected at origination, alongside repayment history and bureau data. This is often enough to begin.

3

Back-test against known outcomes

Using historical data, test whether transaction-based signals would have identified borrowers who later became delinquent, and how far in advance. This builds the evidence base for internal stakeholders.

4

Define the treatments

Agree what action each signal will trigger and who owns it: outreach, hardship referral, limit review, or watchlist placement.

5

Pilot and compare

Run the new approach alongside existing monitoring, measuring outcomes such as roll rates, cure rates, customer outcomes, and operational effort.

6

Scale and embed

Extend to further products and segments, integrate outputs into existing decisioning and servicing systems, and establish ongoing performance monitoring.

7. How Carrington Labs helps

Carrington Labs provides credit risk analytics that turn transaction data into decision-ready signals across the lending lifecycle, from origination through to ongoing portfolio monitoring.

Capability	What it does
Cashflow Servicing	Combines banking transactions, balances, payment history, and prior outreach outcomes to predict near-term repayment risk. It delivers borrower-level alerts, portfolio health signals, and recommended next-best actions, helping lenders detect deterioration before delinquency and identify safe opportunities that traditional rules miss.
Financial Health Summary	Provides a clear, explainable view of a borrower's financial position based on their transaction data.
Cashflow Score	Offers a standardized, explainable transaction-based risk score for lenders that want to add cash flow signals quickly, without starting with a custom model build.
Credit Risk Model	Delivers lender-specific models trained and calibrated on a lender's own products, borrowers, and outcomes, combining transaction, bureau, application, and internal performance data.

Designed to fit existing systems, not replace them

Carrington Labs solutions are designed to fit into existing lending systems rather than replace them.

01

Integration via API or batch

Returning outputs to the decisioning, servicing, and reporting systems lenders already run.

02

Explainable outputs

Clear reason codes that credit, collections, and compliance teams can use.

03

De-identified data and governance

De-identified transaction data and governance designed to support lenders' compliance frameworks.

04

Lender control

Carrington Labs supplies analytics and model outputs; the lender retains control of policy, customer treatment, and final decisions.

05

Evidence before commitment

Lenders can assess the potential impact on their own portfolio using historical, de-identified data.

Carrington Labs supplies the analytics. The lender keeps the policy, the thresholds and the final decision.

Conclusion

The data that tells lenders a borrower is in difficulty has traditionally arrived too late to do much about it. Transaction data changes that.

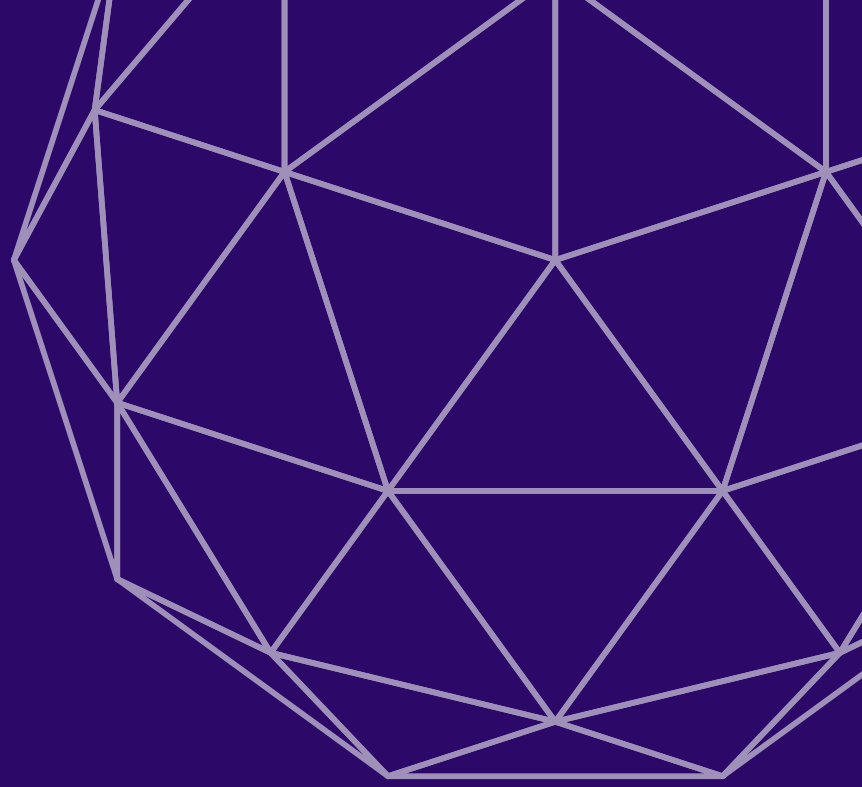
It shows income, obligations and buffers as they change, giving lenders a window of opportunity between the onset of stress and the first missed payment.

Used well, the window benefits everyone

Borrowers are offered support while they still have options. Lenders reduce losses, allocate collections effort more effectively, and manage exposure with greater precision. Risk teams, boards and regulators gain a forward-looking view of portfolio health.

The lenders best placed to navigate changing economic conditions will not be those with the most data, but those that can turn it into timely, explainable action.

To explore how transaction-based monitoring could work for your portfolio, contact Carrington Labs at sales@carringtonlabs.com or www.carringtonlabs.com



Unlock smarter lending with Carrington Labs

Carrington Labs builds credit risk management solutions for cash flow underwriting, loan and limit sizing, line management, and early-warning systems for banks and non-bank lenders.

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