

# AI proves helpful for banks facing new cash penalties for settlement failures

According to one report, banks have been hit with penalties of up to €5 million per month under new CSDR settlement rules. As a result, banks are turning to AI to help.



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Firms should not be quick to dismiss settlement failures, especially given regulators' interest in preventing those failures.

The Settlement Discipline Regime phase of the European Union's Central Securities Depositories Regulation (CSDR) that took effect on February 1, 2022, introduced new rules for cash penalties. According to fintech firm AccessFintech, banks were hit with penalties as **high as €5 million** (\$5.4 million) per month. Firms could also be **further squeezed** by proposals to **shorten settlement cycles** to T+1 in the US.

**Machine learning** and other types of artificial intelligence may be useful to banks navigating these settlement challenges.

Failures occur for several reasons—for example, errors in the transaction data, counterparty ID, commission, payment, and so on. This has led to some banks experimenting with and implementing AI—particularly machine learning—to help with trade reconciliations, predict settlement failures and assist with exception management volumes.

**Deutsche Bank** and **BNY Mellon**, for example, are using AI to provide their clients with real-time probability of settlement failure, and insight into factors contributing to that risk. Brown Brothers Harriman has been **building out** its suite of AI tools, which includes a platform that takes in all trades BBH has in its system and puts them up against a handful of pre-set rules meant to **identify high-risk trades** that might be unmatched as of the settlement date. The process brings those trades to the forefront of the bank's specialist queue, which processes them through the platform's UI.

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## Settlement is ideally suited place for machine learning because of the volumes of transactions and the repeated nature of it

Former bank CDO

A former chief data officer at a UK-headquartered bank says it makes sense to use machine learning and AI, particularly in this area within post-trade, as operational teams (which have been hit hard [by recent layoffs](#)) are dealing with large volumes and repeated patterns.

“If I know that for the last 17 times, the break happened at a certain client or counterparty for a particular reason, I can flag it. This has typically been called operational automation, but it’s an ideally suited place for machine learning because of the volumes of transactions and the repeated nature of it,” the former chief data officer says.

A large part of that settlement process is in trade matching, reconciliation, and exception management.

While the post-trade space has been [underinvested in for a long time](#), Keith Man, head of Asia-Pacific at reconciliation solution and data platform provider Duco, says there’s a shift taking place. The use of new technologies such as machine learning and other types of AI enables firms to invest in the post-trade space more significantly, especially in areas where reconciliation data continues to grow.

He says there is a lot of repetitive work in managing exceptions—for example, operational staff will look at exceptions and allocate them to different teams—and Duco looks at its platform users and identifies repetitive behaviors.

“For example, say a user is allocating JPY (Japanese yen) transactions to the Japan desk—every day they send these exceptions to the Japan desk. The machine will observe that the user has done this many times and ask if you would like to auto-allocate future exceptions on JPY transactions to the Japan desk, and therefore remove that work for the user,” Man says.

Duco currently serves 120 customers, comprising 12 global systemically important banks (G-Sibs), large buy-side firms and investment managers, tier-2 banks, and crypto firms. The cloud-based software-as-a-service provider processes about 730 million rows of data every day.

To give that figure some context, six months ago, Man says Duco was processing between 600 million and 650 million rows of data. Founded in 2012, Duco bills itself as a no-code platform that uses natural rule language, a model-driven language that aims to improve quality and time-to-market in integration projects.

“Availability, immediacy, and speed are the most important things for us. With that in mind, we also needed to make it end-user driven; it cannot be a tool that someone needs to learn a brand new language to be able to use. So we built it around being no-code, and using natural language—which is just using English sentences—therefore giving users as much control and flexibility as possible,” he says.

Similarly, [SmartStream Technologies](#), a financial transaction lifecycle management solutions provider that has been in the post-trade space for over four decades, is also deploying machine learning and other AI to the exception management process.

“We understand that each reconciliation will have a different purpose, and there might be different risk thresholds that people have, and therefore they might classify something completely differently from one reconciliation to another, even within a firm or within a jurisdiction,” says Jethro MacDonald, product manager for artificial intelligence and machine learning at SmartStream. “Say you were a firm that for anything above \$5 million, you’d have a break and it would be raised as high risk. Instead of someone going in and manually raising that and sending it to the right team and flagging it, we can do that [automatically] learning from what has previously occurred.”

To help, **SmartStream** has turned to observational learning, where an agent learns to perform a task by observing and mimicking the actions of an “expert”. As the ML agent “learns”, it can be deployed to assist with handling exceptions in real-time and even make suggestions. Thus, **SmartStream** can speed up the manual process of how operations staff handle exceptions.

### **Transparency is still key**

There is a caveat, though. Having the capability to point out patterns in operational behavior is not enough. Service providers need to take it a step further and also **provide transparency** into the solutions they offer.

Roland Brandli, strategic product manager for **SmartStream**'s reconciliations platform TLM Aurora, says AI is “pretty useless” if no one understands what it’s doing. “We’ve discovered that the crucial argumentation behind AI is not necessarily its capability, but its transparency. Having AI on its own is not enough, especially in the post-trade and reconciliation space—that just doesn’t cut it,” he says.

Implementing AI in any system, be it in the front, middle or back office, does not work **if it is a black box**. Ultimately, a firm must be able to **explain to regulators** how the AI in its systems impacted the end result.

If, for example, a firm has two different datasets, they may not be in the same structure, but comparable fields may exist. Using observational learning, **SmartStream** looks at the pattern the firm used to match those datasets and identifies which fields correspond to each other.

Brandli says **SmartStream** highlights exactly what characters and fields it used to build that rule, so users can click on the data and see the exact pattern the AI used to achieve a match.

“Previously, you had to pre-configure all of this. It’s a huge amount of work and that’s why big banks have entire teams just building rule sets consistently,” he says. “If you look at the bigger banks, because they have more datasets and need more and more rules, the lower their matching rates. At the smaller banks, matching rates are often higher—between 90% and 98%—because they have much more controlled data and fewer internal systems. But the bigger the bank, the more of a problem that becomes, and it often fails because there’s no one there to consistently build specific rule sets. So the AI compensates for that.”

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