

## SEC Fine Shows Bad Data Can Put The 'Risk' In Model Risk

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On April 19, 2019, the U.S. Securities and Exchange Commission published a settled administrative proceeding against Prosper Funding LLC for violating Section 17(a)(2) of the Securities Act of 1933 based on an error in a quantitative model that generated inaccurate performance data.[1] The SEC imposed a \$3 million fine on Prosper as a result of the error.

That the SEC expects registrants to properly maintain and control quantitative models has been highlighted in prior settlements with the SEC.[2] A central theme in the Prosper settlement, though, is the SEC's focus on the fact that Prosper's own personnel conceded in multiple instances that they did not understand how the code at issue operated. Although not expressly stated, the order suggests that errors arising due to lack of understanding of model functioning will likely be sufficient for the SEC to assert the negligent conduct necessary to support a claim under Section 17(a)(2).

This highlights a central risk for many registrants: Registrants who are using code that is dated — e.g., based on legacy code language no longer used by today's coders — or who use code with limited documentation and where staff turnover has led to limited familiarity with their own code are at risk of Securities Act — and possibly other — claims in the event of even inadvertent errors in their code.

Furthermore, although not specifically addressed in the Prosper order, registrants who rely on newer models — such as those based on artificial intelligence, natural language processing or similar tools — and are unable to understand or explain the operation of those tools may similarly be at risk in the event that such tools generate erroneous data or results.

Registrants should take care to inventory their quantitative models, to maintain effective change controls, testing and validation protocols, and to ensure proper governance over those models. But they should also periodically audit the performance of outputs from all models and make sure that users understand how the models generate those outputs. Such steps should be built into a registrant's model governance process. By employing effective model governance oversight, registrants may not



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only avoid such costly errors in the future but also strengthen their defenses in the event of such errors by demonstrating that their control systems and oversight were not negligent.

### **Summary of Facts**

Prosper is a privately held<sup>[3]</sup> marketplace lender that arranges consumer loans through its website and sells securities linked to the performance of those consumer loans to investors (Prosper securities). Prosper provided each investor with information on the consumer loans and the performance of the investor's Prosper securities, including prominently reporting each investor's annualized net returns, or ANR. Prosper calculated ANR through an automated process in its computer code.

### ***2009 Secondary Market Activity***

In 2009, Prosper's parent company began offering investors access to a secondary market for these securities. At that time, Prosper changed the method for calculating ANR to exclude securities sold in the secondary market.

### ***2015 Debt Sale Program***

In July 2015, Prosper implemented a "debt sale program" through which eligible non-performing, charged-off consumer loans linked to Prosper securities were sold to third parties. Although this program was unrelated to the secondary market for Prosper securities, Prosper's coding incorrectly treated the securities linked to these charged-off loans as securities sold in the secondary market and thus excluded the performance of those securities from the ANR calculation provided to customers. As a result, for investors whose securities were linked to loans sold through the debt sale program, Prosper reported an ANR that excluded the impact of the worst performing securities that they had previously held.

### ***Coding Reviews***

In late 2014, after an engineering review, Prosper determined that it should rewrite its older "legacy" code. Importantly, Prosper learned that its current employees did not fully understand the operation of the older, legacy code. At that time, Prosper focused on rewriting the legacy code for the borrower-facing platform, but this did not include the ANR code. According to the SEC, Prosper did not take any steps to monitor operation of the ANR code to ensure it was correctly calculating ANR.

In late 2015, Prosper undertook a "code inventory" of the ANR code for possible use in a different project. Through this process, Prosper again identified the fact that its current employees lacked understanding of the code's operation. But Prosper did not identify the error in the ANR calculation.

### ***Impact***

Because of Prosper's error in the ANR calculation, Prosper told more than 30,000 of its investors — the majority of its investors — that their Prosper investments were performing better than they actually were — in some cases, double the returns actually earned. Prosper also solicited new investments in Prosper securities based on the miscalculated ANR.

Specifically, it sent emails to tens of thousands of investors highlighting the erroneous ANR, recommending that they "[a]dd funds and build on [their] solid returns." Tens of thousands of the

affected investors made additional investments in Prosper securities. For many of them, their decisions were based in part on the inaccurate ANR.

### ***Discovery and Disclosure***

Prosper did not identify the error for almost two years and discovered it only after receiving a complaint from a large institutional investor in April 2017. On May 3, 2017, Prosper notified investors that it had miscalculated and misstated their ANR and provided a current, correct calculation of ANR to investors.

### ***Remedial Actions***

Since discovery of the error, Prosper instituted certain controls designed to prevent and detect similar errors in the future, including management supervision of the ANR calculation and data owners, quarterly reviews of any changes that could have an impact on the data used in the ANR calculation and semiannual testing of the ANR calculation.

### **Observations and Lessons Learned**

To support a claim under Section 17(a)(2), the SEC must demonstrate that any misstatement of material fact was, at the least, the result of negligent behavior on the part of the registrant. In connection with that standard, the order goes to significant lengths to highlight that Prosper did not understand the operation of its own code. The order states that “Prosper failed to identify and correct the error despite its employees’ knowledge that Prosper no longer understood how the code underlying the ANR calculation operated, and despite investor complaints about possible errors in their reported ANR.”

The order specifically noted that in 2014, when Prosper determined the need to update its older “legacy” code, Prosper learned “that its current employees did not fully understand the operation of the older, legacy code.” It noted that “Prosper did not take any steps to monitor operation of the ANR code to ensure it was correctly calculating ANR.” The order further noted that in 2015, when Prosper undertook a “code inventory of the code for calculating ANR for possible use in a different project,” Prosper “again identified the fact that its current employees lacked understanding of the code’s operation.”

Many registrants likely use older, legacy code in business operations — whether in the calculation of returns or otherwise. Furthermore, such code is often being updated or modified, and the individuals who coded the original tool may no longer be employed at the company. Moreover, where software has been licensed or acquired from a third party, the registrant’s existing employees may have limited understanding of the functioning of that code.

Registrants should ensure that proper documentation explaining the code functioning is generated for future use by the company, and its governance model should address code development and life cycle processes to ensure that people at the company understand and can competently use, and test for fitness for purpose, the models employed by the company.

The order is also a shot across the bow of registrants who are beginning to deploy models premised on artificial intelligence or machine learning tools, where models may be opaque or may generate results that the registrant does not fully understand or, worse, did not intend. The SEC appears to be laying a foundation for a position that the failure to understand models employed by registrants may alone be sufficiently negligent that any resulting misstatement will be deemed negligent. Consequently,

registrants should document the operations of, set in place proper monitoring and governance of, and be prepared to explain the operation of such tools if necessary.

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[1] The SEC order did not raise any investment adviser, investment company or broker-dealer status issues.

[2] Much regulatory focus has been placed on the use of models, algorithms and the like in the investment management arena. However, this order highlights the fact that any type of business entity that uses or otherwise relies on models, algorithms or other automated processes should be cognizant of, and try to mitigate, the associated risks.

[3] Prosper and its parent, Prosper Marketplace Inc., have publicly issued debt securities for a number of years.