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# The Virtuous Circle Between Financial Information and Innovation



By Jim Goldman , Assistant Professor of Financial Economics at University of Toronto

## **Firms' R&D activities and financiers' information about innovative projects reinforce one another.**

Fundraising is critical for realising an innovative dream and is often a difficult part of starting up new projects. The financial sector provides innovators with cash, of course, but it could also have a wider role in promoting firms' innovative activities.

In a recent working paper, [“Firm R&D and Financial Analysis: How Do They Interact?”](#), co-authored with INSEAD Professor of Finance [Joel Peress](#), we uncover a mutually reinforcing relationship between information collected by the financial sector about firms' projects and their research and development (R&D) activities. We argue that, on one hand, firms innovate more when investors are better informed about the R&D pipeline. This is because, with better investor information, these firms can expect to receive more funding if their innovations prove successful. On the other hand, investors pay closer attention when firms perform more R&D because, when

the risk of firms' projects increases, allocating money to unsuccessful projects while missing out on successful ones becomes increasingly costly for investors.

We assess this two-way relationship with a sample of American manufacturing firms that consider R&D central to their activities. We follow these firms from 1990 to 2006. We measure their innovation efforts by their level of R&D expenditures and create a proxy for financial sector information by counting the number of equity analysts following each firm. Armed with these indicators, we find strong evidence of a virtuous circle: Increased financial analysis helps firms' investing in R&D, and more R&D stimulates financial analysis.

### **Mutually reinforcing**

To analyse the relationship between R&D and financial information, we looked at how the financial industry changes its coverage of sample firms when firms' research spending increases following implementation of state R&D tax credits. The tax credits provide a source of variation in firms' R&D activity that is initially unrelated to financial analysts' incentives. As not all states implemented tax credits at the same time, it was possible to compare firms in states that increased the tax credits to unaffected firms in different states. Tax credit rates range from 3 percent in Nevada and South Carolina to 20 percent in Arizona and Hawaii. We found a 5.2 percent increase in analyst coverage after the implementation of an R&D tax credit.

Once the impact of financial analysis on R&D was established, we also needed to confirm how firms' R&D spending changed as a result of a change in analyst coverage. To do so, we used the variation in firms' analyst coverage due to the mergers and closures of brokerage houses. We refined the results of an [earlier study](#), showing that fewer resources allocated to financial analysis led to a drop in R&D spending at affected firms. In our study, the loss of a single analyst following the closure or merger of brokerage houses led to a reduction of 2.5 percent in R&D expenditure.

Using equity analysts' coverage of publicly traded firms to measure the production of information about firms' research effort is, of course, a relatively crude proxy. Analysts are not the only agents producing financial information. Bankers, bondholders, rating agencies and others also accumulate valuable information. Yet, our results are an important first step in quantifying the interaction between financial analysis and innovation

effort. This interaction represents 33 to 40 percent of the total contributions made by innovation and financial analysis.

## **Financial analysis as a catalyst for good**

Does the financial community follow economic growth or encourage it? Looking at the relationship between financial analysis and R&D, we found that information and innovation work closely together to create additional income growth. While financial analysis may not directly affect the productivity of projects, it enables a more efficient matching of capital with projects.

Our study also has possible implications for capital allocation within firms. Consider a general manager who needs to allocate funds across its firm's divisions. The better the manager's information about divisional R&D projects, the greater the divisions' innovation effort. Conversely, the more innovative the divisions, the greater the amount of information the general manager may collect. Overall, this feedback loop improves the allocation of capital within the firm.

***Jim Goldman** is an Assistant Professor of Financial Economics at the University of Toronto. He was awarded a PhD in Finance from INSEAD.*

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### **About the author(s)**

**Jim Goldman** Jim Goldman is an Assistant Professor of Financial Economics at the University of Toronto.