Institute for Exceptional Growth Companies

Edward Lowe Foundation
58220 Decatur Rd.
Cassopolis, MI 49031
800-232-5693
www.edwardlowe.org

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Attention, capital-hungry entrepreneurs: New UNH research can help 'show you the money'

To continue building their companies, growth entrepreneurs depend on short-term, liquid sources of debt financing such as bank loans, even though winning a thumbs-up from bankers is no cakewalk. Yet University of New Hampshire researchers have shed new light on how entrepreneurs can influence their creditworthiness.

Their paper "Entrepreneurial firms and signaling for creditworthiness: a Bayesian modeling approach," the UNH researchers show that entrepreneurs who avoid volatility in their workforce and revenues stand a better chance at winning funding. What's more, having diverse sources of equity financing also can boost creditworthiness for certain types of companies.

The research results were recently released by UNH and the Institute for Exceptional Growth Companies (IEGC) and presented at the Babson College Entrepreneurship Research Conference. "Previous studies have shown that employee and revenue size will impact how creditworthy a company is viewed by the outside world," says Devkamal Dutta, assistant professor of strategic management and entrepreneurship at the UNH Paul College of Business and Economics. "The same goes for having established some kind of financing track record. But we wanted to dive in deeper and introduce some new measures."

Volatility and Diversity

With that in mind, the researchers developed two new concepts — "emergent volatility" (unintended change in employees and revenues) and "deliberate diversity" (intended change in financing) — then examined how these variables might affect a company's Paydex score. Paydex is a Dun & Bradstreet indicator that measures a firm's ability to pay its bill over the previous year. "We selected Paydex because it's a third-party, independent source that's based on performance," Dutta says. "Companies influence it by their actions."

The researchers looked at 12,033 privately owned companies that were active in 2010 and had received some sort of equity financing (angel funds, venture capital or private equity) between 1995 and 2010. Key findings include:

- Employee volatility had a significant negative impact on the Paydex score for all types of companies.
- Revenue volatility had a negative impact on the Paydex score for service companies; however, revenue volatility actually yielded a positive impact for manufacturing companies.
- Having diverse sources of equity financing had little impact on the Paydex scores of manufacturing companies but an extremely positive impact for service companies.

The researchers had expected employee volatility to be negative factor. "After all, if you're jumping up and down, hiring people and laying them off, there are going to be huge costs with training and retraining," says

Jeffrey Sohl, a professor of entrepreneurship and director of the UNH Center for Venture Research.

Yet the mixed results for service and manufacturing establishments regarding sales volatility and diversity of financing were a big surprise.

"There are a number of possible explanations," Sohl says. "Concerns over revenue volatility for manufacturers could be tempered by their collateral-based assets. In contrast, service firms, which don't have such assets, can close their doors more quickly, so revenue volatility would negatively impact their ability to attract debt funding. Also because they lack hard assets, service firms may rely more on equity financing from diverse sources while manufacturers may draw from a more limited set of financial sources."

Benefits of a Bayesian Approach

Another hallmark of the study, the UNH researchers are the first to use a Bayesian model to study creditworthiness. "The Bayesian is a probabilistic interpretation of the results, so instead of merely giving us a 'yes' or 'no' answer, it provides a specific percentage chance of an event occurring," says Tevfik Aktekin, assistant professor of decision sciences at UNH.

"For example, we can say that there's a 79 percent chance that sales volatility will have a negative effect on your financial health if you're in the service industry and a 99 percent chance of sales volatility being a positive factor for manufacturers," he says. "Bayesian methods help us make things more user-friendly for practitioners by putting results into context."

"This study has a valuable message for entrepreneurs by helping them develop new strategies to position their company for better access to capital," says Mark Lange, IEGC's executive director. "This is especially true for service companies that may have a more difficult time qualifying for debt financing."

"What's more, the study also helps set the tone for evaluating growth-oriented companies differently," Lange says. "Growth-oriented entrepreneurial firms are often more volatile than stable, moderate growth companies. If the debt financing world can eventually establish new standards for these risk takers for evaluating credit worthiness, it could signal that we have truly entered an entrepreneurial economy."

"This is another step to understanding the important interrelationships between equity markets, debt markets and private company performance," says Doug Tatum, chairman of IEGC's advisory committee and an associate professor at Middle Tennessee State University who holds the Wright Travel Chair in Entrepreneurship. "Much still needs to be explored, but there are some fascinating insights that come from this study."

To see the full paper, visit: http://paulcollege.unh.edu/sites/default/files/entrepreneurial_firms_and_signaling_for_creditworthiness_-_working_paper_1.pdf or http://youreconomy.org/pages/insights.lasso

About the Institute for Exceptional Growth Companies (IEGC)

The Institute for Exceptional Growth Companies was created by the Edward Lowe Foundation through a three-year grant from the NASDAQ Educational Foundation. IEGC is creating new datasets and using existing data in innovative ways to track and better understand exceptional growth companies, their impact on community and economic development, and their relationship with equity funding sources. More information at: http://youreconomy.org/pages/iegc.lasso

About the UNH Peter T. Paul College of Business and Economics

The UNH Peter T. Paul College of Business and Economics offers a full complement of high-quality programs in business, economics, accounting, finance, information systems management, entrepreneurship, marketing, and hospitality management. Programs are offered at the undergraduate, graduate, and executive development levels. The college is accredited by the Association to Advance Collegiate Schools of Business, the premier accrediting agency for business schools worldwide. The Center for Venture Research is one of the premiere research centers within Paul College and provides an understanding of the angel market and the critical role of angels in the early stage equity financing of high growth entrepreneurial ventures. For more information visit http://paulcollege.unh.edu/center-venture-research.

About the University of New Hampshire

The University of New Hampshire, founded in 1866, is a world-class public research university with the feel of a New England liberal arts college. A land, sea, and space-grant university, UNH is the state's flagship public institution, enrolling 12,200 undergraduate and 2,300 graduate students.

Media contacts:

Edward Lowe Foundation/IEGC
T.J. Becker at 269-445-4257 or tjbecker@lowe.org

UNH Media Relations
Lori Wright at 603-862-0574 or lori.wright@unh.edu