

# **The University of Michigan-Dearborn Innovation Index**



## **Introduction to the Index**

## **What is the University of Michigan-Dearborn Innovation Index?**

The University of Michigan-Dearborn Innovation Index provides people interested in the Michigan economy a way to track accelerations or decelerations in economic innovation in the Michigan area. The Index will be released quarterly, approximately five months after the quarter ends (that is, the Third Quarter 2007 Index will be released in early March, 2008).

## **Aren't Innovation Indexes already available?**

Innovation is key to economic growth and it is not surprising that reports on economic innovation are developed both for the country as a whole and for many specific regions. However, while such a report may be labeled an "index", it is not released more often than every few years. Such reports are useful evaluations of the innovation climate, but do not perform the role that indices perform for other aspects of the economy. For example, the U.S. Consumer Price Index is released monthly, and enables the user to calculate changes in the price level from one month to another. A stock index like the Standard and Poor's 500 Index can be calculated at any moment the stocks are trading, and allows the user to calculate changes in stock prices. The University of Michigan-Dearborn Innovation Index will similarly provide the ability to evaluate changes in innovation activity in the Michigan economy over time.

## **How is the University of Michigan-Dearborn Innovation Index different?**

Other innovation indexes typically use data from the Census Bureau or the Internal Revenue Service. These sources of data provide a wealth of relevant material, but are available only with a delay of two years or more. As such, the indexes they produce cannot provide a reasonably timely readout of the Michigan economy.

Researchers at iLabs, the University of Michigan-Dearborn's Center for Innovation Research, have identified a number of economic innovation variables that are available with relatively short delays. As such, it will be possible to calculate an innovation index for a given quarter five months after the quarter ends.

## **What is the scale of the Index?**

The index is calibrated to a value of 100 as of the first quarter of 2007.

## **Who is involved with the production of the Index?**

Lee Redding, PhD, CFA is the project director for the Index. He is an Associate Professor of Business Economics in University of Michigan-Dearborn's School of Management. His previous work for iLabs was as project director for two studies of the economic impact of Wayne County's airports: Detroit Metro (2006) and Willow Run (2007). Professor Redding also conducts research in economic policy and financial economics. His undergraduate degree was from the University of Michigan and his graduate studies were done at Princeton University.

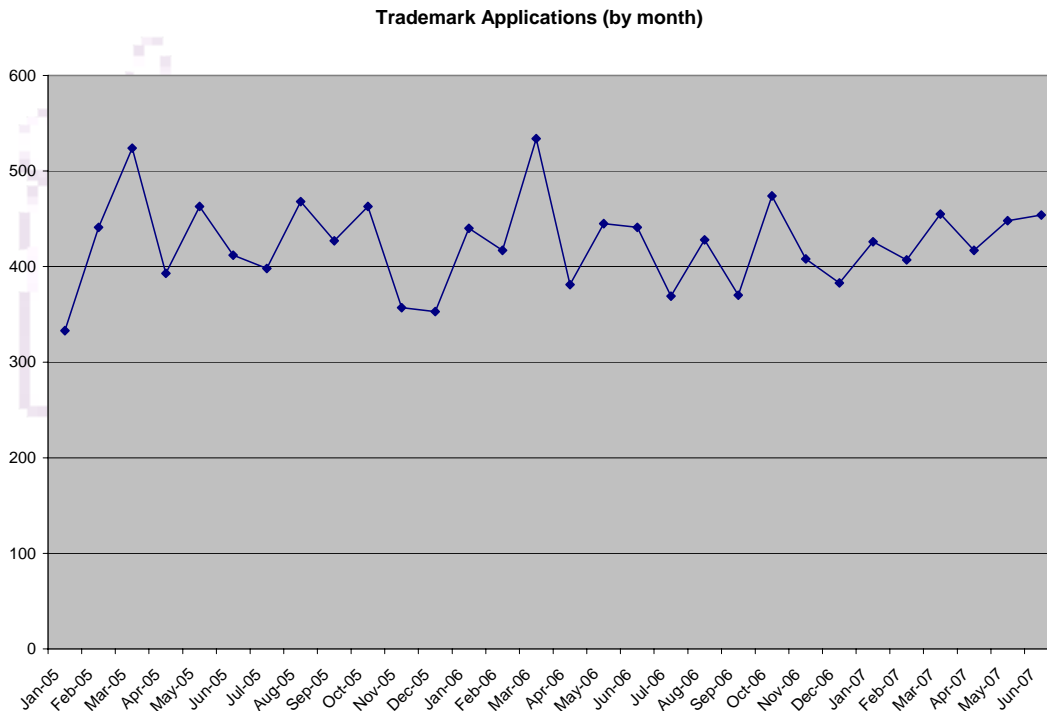
Anne-Louise Statt, PhD, conducts much of the econometric work for the Index. Dr. Statt is a lecturer in the Department of Accounting and Finance at the University of Michigan-Dearborn. She has degrees from the University of Cambridge, the London School of Economics, and Princeton University. Her research interests are in labor economics and applied microeconomics.

Gary Hein provides research assistance and data collection for the Index. Mr. Hein is a student researcher with iLabs and a BBA student in the School of Management.

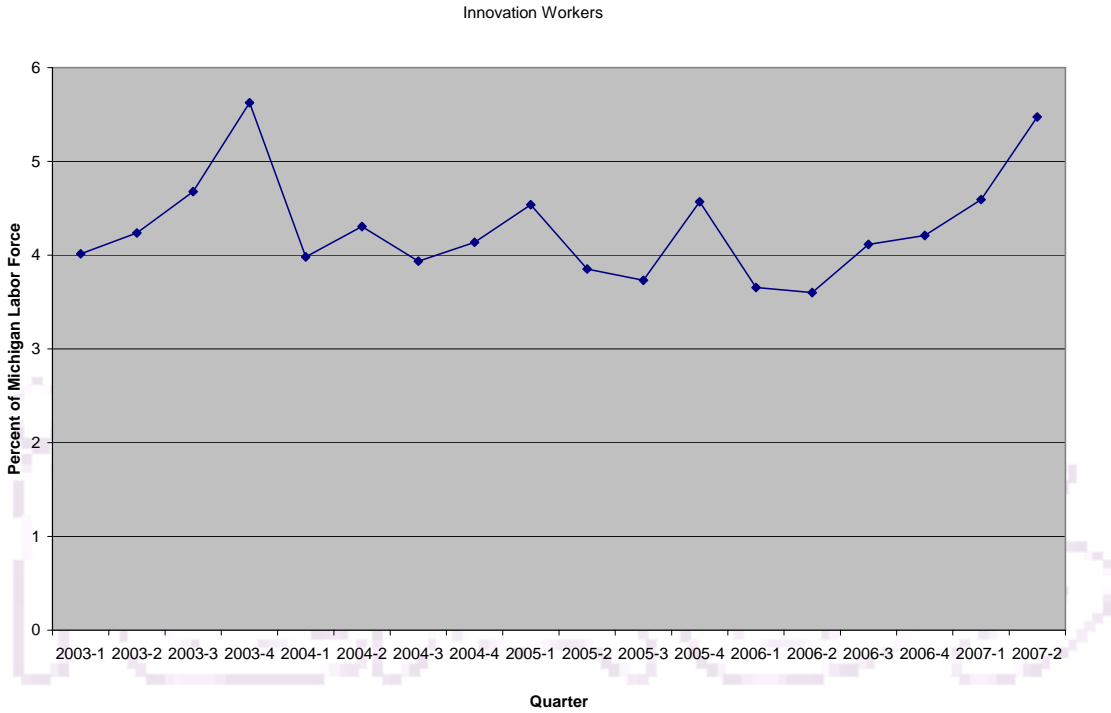
## What are the components of the Index?

The University of Michigan-Dearborn Innovation Index has six components related to economic innovation in the State of Michigan.

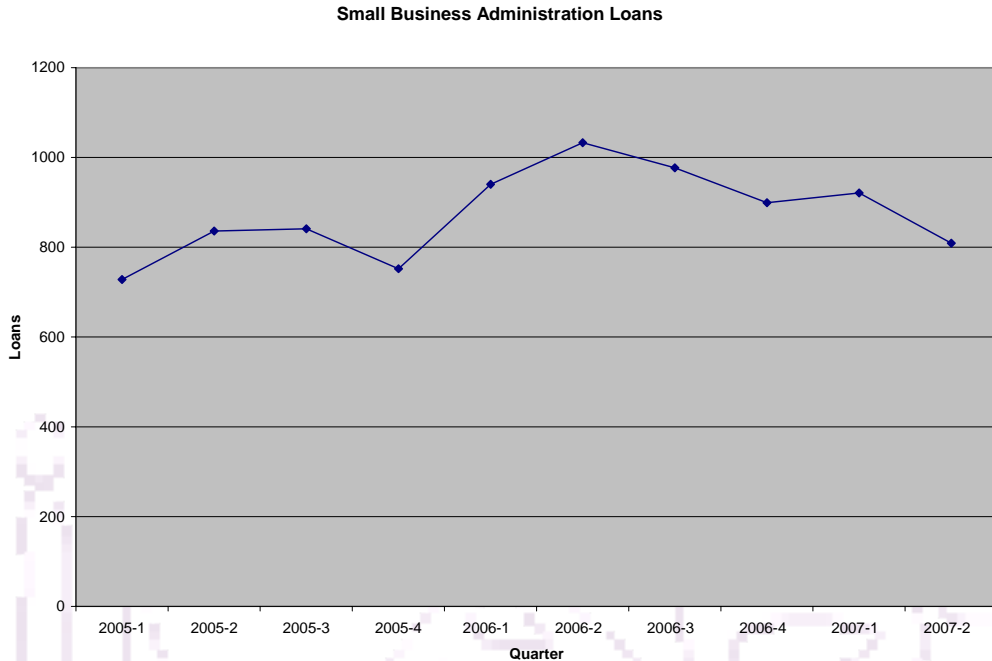
- **TRADEMARK APPLICATIONS** from companies in the State of Michigan. Economic innovation often results in a new product, and these new products will often have a name that requires protection against imitation. The U.S. Patent and Trademark Office provides a database of trademark filings.



- **INNOVATION WORKERS:** Economic innovation often requires workers who are skilled in areas relevant to research and development. The U.S. Department of Labor’s Bureau of Labor Statistics classifies workers according to the Standard Occupational Classification (SOC) system. For the innovation index, scientists (SOC 19-0000: Life, Physical, and Social Science Occupations) and engineers (SOC 17-0000: Architectural and Engineering Occupations) are identified as innovation workers. The percentage of the Michigan workforce in these occupations is estimated using Current Population Survey (CPS) data. (The Current Population Survey is an employment-focused survey conducted by the Bureau of Labor Statistics). Since the percentage of workers in these two fields is small relative to the labor force, some noise may be found in each quarterly result.

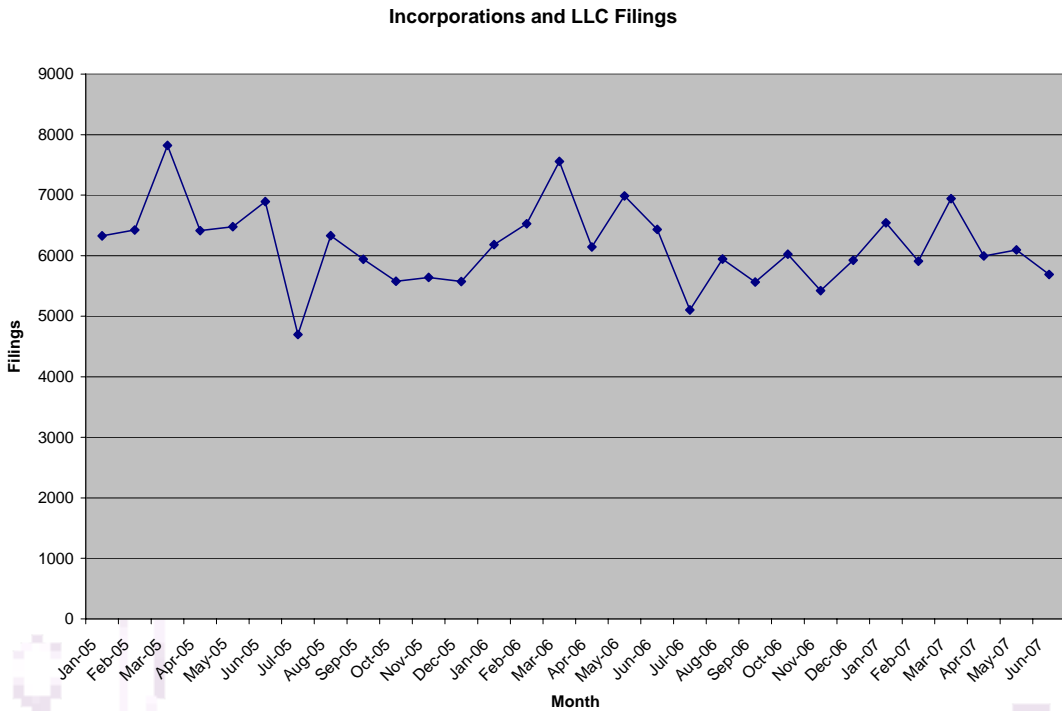


- SMALL BUSINESS ADMINISTRATION LOANS.** The U.S. Small Business Administration provides funds (both directly and by partial guarantees of private-sector loans) to small businesses. Such loans have been shown to be a leading indicator of economic growth, which is not surprising given the critical importance of small business to job creation in this country. Two primary programs of the Small Business Administration are its 7(a) program, which provides partial guarantees of private-sector loans, and its 504 plans, which provides longer-term loans to finance the purchase of fixed asset investments. The indicator used here is the number of loans in these two categories made by the Detroit office of the Small Business Administration.



- VENTURE CAPITAL.** Venture capital is the provision of investment funds for emerging companies by investors willing to take on the high risk involved in such an endeavor. Such capital is likely to be used for highly innovative enterprises. It is also highly volatile from one quarter to the next. Venture capital estimates for the state of Michigan are published in the MoneyTree™ survey report prepared by PricewaterhouseCoopers and the National Venture Capital Association based on data from Thomson Financial. This report is available at <http://pwcmoneytree.com>. Before being included in the University of Michigan-Dearborn Innovation Index, the dollar value of venture capital is adjusted for inflation using the GDP deflator.

- INCORPORATIONS.** A new filing for incorporation is a strong indication that a new business is being formed, which is evidence of economic innovation. The number used in the calculation of the Innovation Index is the sum of incorporations and LLC filings.



- GROSS JOB CREATION.** Innovation often creates new jobs. However, the difficult times Michigan has experienced lately (particularly in terms of automotive job losses) masks the benefit of innovation in terms of the overall job market. However, a new program (Business Employment Dynamics) from the U.S. Bureau of Labor Statistics enables the net change in jobs to be decomposed into the gross job creation less gross job loss. The reported number has been seasonally adjusted and is delayed one quarter from the other components of the Index.

