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To: The Post-Doc Position Recruiting Committee

Dear Professor:

It is my pleasure to introduce Manish Gupta, a finance doctoral student from the University of Zurich, who is in the job market this year, and is applying for a post-doc position at your school. I am a member of his Ph.D. dissertation committee, which is chaired by Professor Thorsten Hens from the Department of Banking and Finance, at the University of Zurich. The other members of his Ph. D. dissertation committee are Professors Michel Habib and Jean-Charles Rochet, also from the Department of Banking and Finance, at the University of Zurich. I recommend him to you to be considered for an Assistant Professor position in your finance group.

I have known Manish for about six years, ever since he was a graduate student at Boston College, Department of Finance. Manish took a Master's degree from Boston College and then moved to the University of Zurich for his Ph. D. While he was a student at Boston College, he took my Ph. D. Corporate finance seminar (MF891) for credit and did well in that class. He had also taken my Master's level Advanced Corporate Finance class (MF881) also on credit and had done well in that class as well. Later, after moving to the University of Zurich for his Ph. D. education (in his third year there), he visited me at MIT Sloan School of Management (I was teaching at MIT during the academic year 2011-2012 on sabbatical). Manish expressed an interest in trying to work with me on a project in empirical corporate finance. He then came to Boston to worked with me on a research project during the summers of 2013 and

2014 (last summer), and we completed a paper together with Karen Simonyan, one of my former student from Boston College (now a tenured Associate professor at Suffolk University in Boston). This research project has recently been completed, and Manish is including it in his job market package (I will describe it in detail below). My letter below will be based on the above extensive interactions that I have had with Manish, earlier as my student while he was a graduate student at Boston College, and more recently, as my co-author during our joint work during the summers of 2013 and 2014 (and currently).

Manish's main areas of research are in the areas of macro-finance (with applications to housing and real estate) and empirical corporate finance. Manish has three completed working papers in his job market package, two of them single-authored (in the area of macro-finance), with the third a paper on corporate innovation co-authored with me and Karen Simonyan (in addition to some other projects in their early stages). I will start by first discussing his job market paper (solo-authored), before talking about his paper on corporate innovation and his other completed working paper.

In Manish's first completed working (and job market) paper, titled, **"Housing Price Shocks, Leverage, and Mobility,"** Manish assesses the impact of social costs generated by housing price shocks on the mobility of homeowners with both positive and negative equity. Manish uses a two-fold identification strategy. First, he makes use of a policy innovation, the Tax Reform Act, 1986 (TRA), which eliminated the tax deductibility on all personal loans except for interest payments on mortgage debt. This policy innovation created a tax-shield that encouraged homeowners to switch from unsecured to secured loans (mortgage financing). Second, he identifies state-level house price shocks in thirteen US states during the period, 1983-1997. Using PSID data, he finds that debt overhang inhibits the probability of moving due to both the increased leverage owing to the TRA and due to the housing price shocks.

Manish finds that the sensitivity of mobility to housing price movements, in the presence of the increased leverage due to the TRA, is even greater in higher-tax states, recourse states, and for lower-income homeowners. As expected, the TRA had no effect on the mobility of renters. Further, he finds that, in the wake of housing price shocks, the sensitivity of mobility to house price movements is the highest *not* for the levered homeowners with positive or negative equity, but for the homeowners with 100% equity. Finally, for those levered homeowners with positive equity, he finds a "fire-sales" effect due to the illiquidity triggered by the shocks in housing markets.

The above paper is scheduled to be presented at the coming 2015 *American Economic Association* Meetings in Boston. It has already been presented at a number of top meetings in the real estate area, including the AREUEA National meetings, at Washington DC, in May 2013. While I find this paper to be very interesting, I will not comment further on it, since it is not in my primary research area, and will leave it to Manish's dissertation committee chair Thorsten Hens (whose expertise is in the housing area) to discuss its marginal contribution to the literature and its publishability.

Manish's second completed paper is a working paper in the area of empirical corporate finance (co-authored with myself and Karen Simonyan of Suffolk University), **"Management Quality and Innovation in Venture Backed Entrepreneurial Firms."** In this paper, Manish, Karen, and I make use of hand-collected data on the quality and reputation of the management teams of a large sample of venture-backed entrepreneurial firms undertaking initial public offerings (IPOs) to address two research questions: How does the human capital of a firm's top management team ("management quality") affect the quantity and quality of innovation undertaken by it? Second, what are the effects of the pre-IPO innovativeness of a firm and its management quality on the characteristics of its IPO and its post-IPO operating performance?

We hypothesize that higher quality management teams hire better scientists and other researchers; invest in more innovative projects; and manage these projects more ably, leading to higher innovation productivity. Consistent with this, we show in the first part of our analysis using ordinary least squares and instrumental variable analyses that firms with higher management quality exhibit higher innovation productivity in the years immediately before and after their IPOs. The above results hold for both the quantity (number of patents) and quality (citations per patent) of innovation. In the second part of our analysis, we find that firms with greater pre-IPO innovativeness are associated with a larger number of anti-takeover provisions in their corporate charter (determined at IPO), higher IPO valuations, younger age at IPO, and better post-IPO operating performance. Further, we find that the above effects are enhanced if innovative firms are managed by teams of higher management quality.

Given that this is the first paper that links the human capital of a firm's top management team to the product market innovation activities undertaken by it, I believe that this paper makes a very important contribution to the literature. I therefore believe that is highly likely to be published in a top finance journal. Manish has told me that, looking ahead, he plans to continue doing research in both the areas of empirical corporate finance and macro-finance (with applications to housing and real-estate), and plans to use this second paper as his job market paper in schools where the primary need is for an Assistant Professor working in the corporate finance area. Within corporate finance, Manish plans to work in the immediate future on research projects in two areas: first, in the area of the impact of the human capital of a firm's management team on its corporate finance decisions; second, on the drivers of corporate innovation in both young and more established firms.

Manish's third completed working paper (single-authored), is titled "**Agency Issues and Financing Constraints: Evidence from REITs."** This paper can be viewed as being at the nexus of real estate finance and corporate finance, since, in this paper, Manish uses a real-estate context to address an important issue in corporate finance. REITs, by law, pay at least ninety percent of their corporate income as dividends, so that their dividend policy is given. Such a high dividend payment also means lower retained earnings, leaving firms with little free cash flow. Manish therefore uses this context to test Jensen's (1986) free cash flow theory, which predicts that a lower free cash flow (for example, arising from high leverage) mitigates agency problems.

In this paper, Manish asks two questions, taking advantage of the regulations imposed on REITS (and changes in these regulations). First, how does an average REIT (given its dividend policy restricted through regulation) respond to its investment opportunities? Second, does an average REIT, with mitigated agency problems, face less severe financing constraints? The REIT Modernization Act (RMA) of 2001 allowed REITs to own taxable REIT subsidiaries (an exogenous variation in their investment opportunities) and reduced their required dividend distribution from ninety five to ninety percent (an exogenous variation in free cash flow). Employing a differences-in-differences (DID) methodology around the above act, Manish finds that, for a given increase in internal funds, the negative impact arising from the increased agency problems (due to the reduction in required payout arising from the change in regulation) dominates the positive impact of the wealth effect, resulting in a lower overall responsiveness of REITs to their investment opportunities. Finally, he finds that, despite mitigated agency costs, an average REIT faces more severe financing constraints (as measured by cash flow sensitivity) compared to other (non-REIT) firms. I feel that this paper is a fairly clever test of the Jensen free-cash flow story, and with some additional work, has the potential to be published in a high quality finance journal. As you can see from Manish's vita, this paper been presented at a number of good conferences (and won the best paper award at one of these conferences).

Manish is a good presenter as well. I have seen him present (his own papers as well as those of others) perhaps three or four times all told (counting both seminars on his own research and presentations of various papers in my doctoral class): he has always impressed me with his presentation skills. Even though he is not a native English speaker, his spoken as well as written English are quite good. His presentation and other communication skills are also good.

In summary, it is clear that Manish is a very good researcher in empirical corporate finance and macro-finance (as applied to housing and real estate). Further, his research interests are quite broad, as can be seen from the fact that his research portfolio is composed of papers/projects in three different areas: macro-finance as applied to housing; REITS and agency problems; and corporate innovation. He has therefore developed a deep understanding of the existing literature, important unresolved research issues, and the data-sets in each of the above areas. Thus, Manish already has a significant research agenda in hand, which I am sure, will keep him busy for some time into his academic career. I therefore believe that Manish would be a very good prospect in the rookie market and recommend him to you strongly. He will be attending the coming AFA Meetings in Boston. Please feel free to call me at (617) 552-3980, or e-mail me (chemmanu@bc.edu), if you require any further information about him.

Sincerely,

Thomas J. Chemmanur