STANFORD UNIVERSITY

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DEPARTMENT OF ECONOMICS

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March 29, 2015

Dear NBER Entrepreneurship Working Group:

I am writing to *enthusiastically* recommend **Cian Ruane** for the 2015 Entrepreneurship Research Boot Camp (ERBC).

Cian Ruane is a 3rd year Econ PhD student at Stanford. He has worked for me as a research assistant the past two years. He is quite promising and I have high expectations for him. He is smart, energetic, and full of ideas.

Cian is keenly interested in firm dynamics and their implications for innovation and growth. He is a co-author on a project with myself and Mark Bils. We are looking at micro-level manufacturing data for China, India, and the U.S., and seeking to understand how much of the variation in average products of capital and labor reflect misallocation (differences in the value of *marginal* products) vs. model misspecification (marginal products deviating from average products) or measurement error. Each of these explanations should leave telltale patterns in the data, we will argue.

Cian is going to be an RA at the Census Research Data Center at Stanford soon. I have a Census proposal with Chang-Tai Hsieh which has just been approved by the Census and received clearance from the IRS subject to a minor clarification. Cian will be working with the LRD and LBD. This will be for the joint research with Cian and Mark, as well a project on measuring creative destruction with Daniel Garcia-Macia and Chang-Tai Hsieh.

Cian is working separately with the Irish Census data in collaboration with Doireann Fitzgerald of the Federal Reserve Bank of Minneapolis. He also has projects with fellow Stanford econ PhD students using a rich panel dataset on Spanish manufacturing firms.

The roster of presenters at this year's ERBC looks fantastic, as usual. I think Cian would learn a ton from it, and would be a fun and interactive participant. I give him the highest possible recommendation for the ERBC.

Yours Sincerely,

Peter J. Klenow

NBER Entrepreneurship Research Boot Camp 2015
Application

Cian Ruane
3rd Year PhD Student
Stanford University Economics Department

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CA, 94305
USA

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Recommendation Letter Writer:
Prof. Peter J. Klenow
Stanford University

Cian Ruane

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EDUCATION

Stanford University **Stanford, California, USA**
PhD in Economics Expected 2017

- **Completed Courses:**
  - Core Economics (Micro): 3 modules (Segal, Bernheim, Milgrom & Wolitzky): **A-**
  - Core Economics (Macro): 3 modules (Amador, Klenow, Piazzezi, Schneider, Kurlat & Taylor): **A+**
  - Core Economics (Econometrics): 3 modules (Romano, Wolak, Macurdy): **A-**
  - Advanced Macroeconomics I (Jones & Klenow): **A**
  - Advanced Macroeconomics II (Hall): **A**
  - International Economics II (Donaldson): **Pending**
  - Topic in International Trade (Manova): **A+**
  - Labor Economics II (Bloom): **A**
  - Computational Economics (Maliar & Maliar): **A**
  - Quantitative Methods for Economic Research (Imbens): **HP (High-Pass)**
  - European Economic History (Abramitzky): **A**
  - Economics of Technology & Innovation (Moser): **A**

- **Results:** Cumulative Graduate GPA = 3.93
- **Research Assistantships:** Research Assistant for Pete Klenow, Fall 2013 – Present.
- **Grants & Awards:** Schultz Fellowship (2014)

Trinity College, The University of Dublin **Dublin, Ireland**
Bachelor of Arts, Double Major in Mathematics & Economics 2008 – 2012

- **Results:** Graduated with a First Class Honors in Mathematics and Economics
- **Grants & Awards:** Entrance Exhibition 2008, Louden Ryan Prize 2009, First Class Prize 2010, First Class Prize 2011, Arthur Lyster Prize 2011, Bastable Prize 2012, Gold Medal 2012.
- **Publications:** `Should Policy Makers Limit the Size of Current Account Imbalances?' in Student Economic Review 2012. Awarded Best International Essay.

NON-ACADEMIC EXPERIENCE

Goldman Sachs International **London, UK**
Summer Analyst, UK Team & Pensions Team, IBD 28/06/2011 – 05/08/2011

- Offer received to join as an Analyst in August 2012

Société Ricard (Groupe Pernod-Ricard) **Marseille, France**
Intern, Office of the President 21/06/2010 – 11/07/2010

- Gained experience of the firm by talking with directors and staff in the departments of Management, Sales, Marketing, Communications, HR and PR.

Trinity College Student Economic Review **Dublin, Ireland**
Assistant Editor, Copy Editor & Webmaster, Editorial Team 09/2010 – 06/2011

- Edited the Student Economic Review 2011.

SKILLS, ACTIVITIES & INTERESTS

Languages: Bilingual in French and English; Basic Knowledge of German and Spanish

Activities:

- Chief Financial Officer of the Stanford Irish Association 2014/2015
- Treasurer of the Dublin University Karate Society 2010/2011
- Treasurer of the Dublin University Card Society 2010/2011
- Sector Manager, Industrials, Trinity Student Managed Fund 2011/2012

Interests:

- Chess- Captained school team to success in national and international competitions
- Music – Violinist with Trinity Orchestra, Phoenix Orchestra and Dublin Youth Orchestra

I am excited to be putting forward my application to the 2015 NBER Entrepreneurship Research Boot Camp. I believe it would be a tremendous learning experience, and would provide me with the tools to make progress in my academic career. My research interests are in using Macro models to relate the study of firms, entrepreneurs and innovation to economic growth. Currently my focus is on the empirics and theory of firm dynamics. My research interests therefore make me a great fit for the ERBC. As well as having the opportunity to learn from top researchers, I would embrace the opportunity to meet graduate students from other institutions, and hopefully foster the beginnings of future collaborative work.

My research interests have been heavily influenced by the academic work done by the professors participating in the ERBC. I am particularly motivated by the increasing availability of micro-data to test existing models in the Macro literature, see in what ways they need to be improved and then use them to answer important policy questions. Since finishing the 2nd year of my PhD program, I have been working on a number of projects related to entrepreneurship and innovation. In one paper, I collected a unique dataset on the prizes obtained by Irish entrepreneurs who attended an Industrial Exhibition in 1883. I then used prizes to proxy for entrepreneurial quality and compare the geographic distribution of entrepreneurial quality to the geographic pattern of industrialization at the time. In the summer of 2014 I was also awarded the Stanford Institute for Economic Policy Research Schultz Fellowship to buy a unique panel dataset of Spanish manufacturing firms. A lot of my research over the last 6 months has involved working with this dataset. In one of these projects I tested a number of the predictions of Schumpeterian models of endogenous innovation by taking advantage of the fact that firms self-reported both their own and their competitors' market shares. I am currently working on a project in which I examine the demand-side frictions to firm growth. I document a number of novel empirical regularities regarding how firms expand their customer base. I then relate these findings to existing theories of entrepreneurial and firm dynamics. In the future I plan to continue researching the many open questions linking firm dynamics to innovation and growth. I have begun the process of getting access to both the Irish Census and US Census, both of which I expect will prove rewarding datasets to work with, and will enable me to make progress on many new questions.

The main reason I want to participate in the ERBC is to expand my knowledge of a number of topics in the entrepreneurship and entrepreneurial finance literature. One of these is the measurement and interpretation of firm productivity. As I am currently working with a Spanish firm-level survey in which I have many different measures of firm productivity and innovativeness (such as R&D, patenting, product and process innovations, TFP residuals), knowing how to interpret different measures of firm innovativeness and productivity is central to my work. I also am working on examining alternative channels of firm growth, and I am particularly interested in decomposing the channels of the 'demand-accumulation process' described in Foster, Haltiwanger and Syverson (2008 and 2013). Nick Bloom, John Van Reenen and John Haltiwanger are all leading researchers in this literature. Attending their lectures, discussing their papers and discussing the issues I have run into in my own work would be extremely valuable for my research going forward. A different topic that my research would benefit from understanding better is the transition from entrepreneur and idea to firm creation. In my own research so far I have treated the firm (or plant) as the primitive of my analysis and ignored the process of becoming an entrepreneur and then a firm. The ways that entrepreneurs fund their projects and turn their ideas into new firms is important for our understanding of entry and

therefore economic growth. I am interested in exploring these ideas in future work, and I would be very excited to attend Thomas Hellman and Josh Lerner's lectures on these topics.

Another way in which I would expect to benefit a lot by participating in the ERBC is in learning of all the different datasets that can be used by researchers on firms and entrepreneurship. In my own research I use micro-datasets to discipline Macro models, but have often found myself limited by the availability of data. Learning which datasets are available, how to use them and what they're major advantages and disadvantages are would be extremely useful. As I expect to soon be working with the US and Irish Census databases I would particularly benefit from learning more about these from John Haltiwanger, who was among the first to use Census data for economic research.

Another great aspect of the ERBC is the opportunity to meet students from other institutions, and I am very open to beginning collaborative work. So far, I have tended to focus on the study of firm growth in developed countries. One of the research topics that I am interested in exploring in future work is examining how patterns of firm growth differ between developed and developing countries. These differences may help us understand cross-country differences in GDP, growth rates and why some countries experience 'economic growth miracles'. Meeting students whose interests are closer to the entrepreneurship and development literature would be a great way to begin thinking about new projects in this line of research.

To summarize, I am excited to put forward my application for the 2015 NBER Entrepreneurial Research Boot Camp. As my main research interests are closely related to entrepreneurship and innovation I believe I am a great fit for the program. I look forward to being able to discuss frontier research questions with the participating professors and students. This will undoubtedly help me improve my current research projects on firm dynamics, and provide a stimulating environment to begin working on new collaborative projects also.