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Introduction

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Understanding labor markets for workers with specialized training in science, technology, engineering, and mathematics (STEM) is essential for learning about the drivers of innovation and economic growth, yet these labor markets are complex, and their dynamics are not fully understood by economists. Recent decades have seen increasingly important roles for the foreign-born in the US STEM workforce and among recipients of advanced degrees at US universities. Given the potential for STEM workers to contribute to the economic growth and continued prosperity of the United States and in the context of the current public debate about immigration, it is important that policies affecting the supply of these workers be based on careful analysis. There is a pressing need for evidence and consensus-building on the economic impacts of immigration on the STEM workforce and innovation, and this volume aims to contribute to this evidence by highlighting recent research.

The chapters in this volume address three main themes related to the overarching question of how immigrants affect innovation in the US. The first theme focuses on the location choices of innovative workers, specifically inventors and foreign-born STEM doctoral recipients. Return migration of innovative workers is a subject on which there has been relatively little

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research to date but is increasingly important as the countries that have historically sent large numbers of STEM students and workers to the US become more attractive destinations for STEM careers. The chapters on this theme help us understand the implications of increases in return migration for innovation in the US.

The second theme is the relationship between immigration and innovation with regard to initial inflows of migrants rather than their return decisions. These chapters focus on how differences in the number of immigrants—driven by immigration policy—affect the rate of innovation among immigrants as well as natives and how this depends on the skill composition of immigrant flows.

Innovation often requires the inventors or their agents to become entrepreneurs in order to commercialize the innovation. Thus the third theme in this volume is the relationship between high-skilled immigration and entrepreneurship and contributions related to immigrant entrepreneur networks and contrasting immigrant and native PhDs' entrepreneurship.

The chapters on all three of these themes not only share a single focus—immigration and innovation—but also share a methodological commonality: the use of novel data sets and creative approaches to answering important questions. Research in this area has been limited by the fact that immigration, innovation, and entrepreneurship can all be difficult to measure using conventional data sources. The authors of chapters in this volume have all collected new data or are exploiting existing data in creative ways.

The following chapters collectively represent a significant advance in our understanding of immigration and innovation and contain provocative results that raise a new set of questions and point to directions for future research. Below we describe the findings of the chapters and the relationships between them and briefly discuss some of the open questions and fruitful areas for further research.

Location Choices of International Students and Return Migration

In several STEM fields, students of foreign origin represent the majority of PhD recipients in the US, and those who remain in the US after completing their studies make important contributions to US universities and firms. However, there is some indication that stay rates of PhD students from certain key countries may be falling. China and India are especially important as the first and second most common country of origin among STEM doctoral recipients in the US (representing 17.7 percent of all STEM PhD recipients in the 2016 National Science Foundation [NSF] Survey of Earned Doctorates), and the fraction of both Indian and Chinese STEM doctoral recipients reporting definite plans to stay in the US has fallen steadily since 2004 (NSF *Science and Engineering Indicators* 2018 appendix table 3-21). This raises several questions. One is whether the US can expect to continue

to retain large numbers of graduates of foreign origin as the conditions for science in students' home countries improve. Another is whether those students leaving the US are positively or negatively selected on ability.

Prior research on return migration has been hampered by a lack of data, as data sets that track individuals across countries are rare and typically based on small samples.[1] Moreover, much of the prior research has focused on PhD scientists[2] and/or on scientists trained in the US despite the fact that there are many more highly skilled immigrant STEM workers with degrees below the PhD level and also many with degrees from outside the US. Chapter 1, by Breschi, Lissoni, and Miguelez, extends our understanding of stay rates for foreigners working in the US who hold degrees at any level of higher education, some of whom came to the US for education and others who came on employment-based visas. These authors have created a new data set of Indian inventors in the information, communications, and technology (ICT) sector compiled from the US Patent and Trademark Office (USPTO) PatentsView data repository matched to public LinkedIn profiles. Breschi et al. construct a panel of location information from the employment histories provided by the LinkedIn profiles. They find that employment-based immigrants have higher return rates than those who arrive to seek higher education and that there has been little change since 1990 in the percentage of employment-based migrants who return to India. However, they document an increase in recent decades in the propensity to return to India across cohorts of Indians who came to the US to study, increasing from 22 percent in 1990 to 24.7 percent in 2000.[3]

Breschi et al. also find evidence of negative selection of foreign students with US degrees returning to India based on the fact that Indians who have obtained master's or PhD degrees in the US are less likely to return home than those who have merely obtained bachelor's degrees in the US. Somewhat surprisingly, there is a slight positive association between the return hazard and the number of patents filed while in the US for work-based migrants. These results suggest the need for further research on selection and return migration, as prior studies have also found mixed results on the relationship between ability and return migration.[4]

1. E.g., Gaulé (2014), Gibson and McKenzie (2014), Kahn and MacGarvie (2016). The International Survey of Doctoral Recipients, which tracks doctoral recipients from US STEM programs over time even if they move internationally, has recently become available and will be a valuable resource for analyzing return migration.

2. E.g., Finn (2014), Grogger and Hanson (2015), and Kahn and MacGarvie (2016).

3. A striking increase in the return rate for the 2010 cohort may be unreliable due to the small number of observations (71) in that group but calls for further analysis in a larger sample to establish whether the actual return rate has increased substantially.

4. Borjas and Bratsberg (1996) model the decision to migrate, whether temporarily or permanently, as a function of expected earnings in the source and receiving countries, the potential migrant's skill/ability and returns to skill at home and abroad, and a random parameter. They find that as long as the returns to skill are higher in the receiving country, migrants come from the upper part of the ability distribution, and those who stay permanently in the receiving

An interesting related finding is seen in chapter 8 by Roach, Sauermann, and Skrentny. In their survey of more than 5,600 doctoral students from US STEM programs, Roach et al. find that although 42.2 percent of all respondents of foreign origin plan to remain in the US permanently, this number is only 17.4 percent for Chinese students. This finding, based on a survey sample, deserves further investigation in a larger data set, but it is striking because China is currently the largest sending country of international students to the US—particularly in fields such as computer science and engineering, in which salaries are high and the supply of native graduates is relatively scarce. Moreover, Roach et al. show that Chinese doctorates are more likely than native peers to express interest in founding a start-up and to prefer joining start-up businesses. To the extent that entrepreneurship is an engine of growth, the high percentage of Chinese students planning to eventually return home combined with their high preferences for entrepreneurship warrants further investigation.[5]

A different perspective on rates of return migration is offered in chapter 2 by Ganguli and Gaulé, who survey doctoral students in chemistry from US universities, obtaining data on 1,605 students at the top 54 research universities. Ganguli and Gaulé use a hypothetical choice method to determine preferences over different attributes of postdoctoral positions and find that international students have *stronger* preferences for remaining in the US for postdoctoral training than do domestic students. This difference persists after controlling for test scores and career preferences as well as the ranking of hypothetical postdoc institutions in the US and abroad. The survey, which was conducted in the fall of 2017, is one of the most recent estimates of the stay rate intentions of international students in the US since Roach et al.'s student survey was conducted in 2010. Their survey results seem to suggest that concerns about declining stay rates of foreign students may be misplaced (at least for the postdoctoral period).

Ganguli and Gaulé also find that international students have stronger preferences for academia (with an 11 percentage point higher probability of accepting a postdoc at a top university when compared to native students) and that this is true even after controlling for ability via GRE score and publications while in graduate school. This stands in contrast to Roach et al., who find no difference between native and foreign students in the tendency to prefer academia but a stronger preference for entrepreneurship among

country will be those with the highest ability. Using the admittedly imperfect proxy for ability of rank of a student's graduate program, Grogger and Hanson (2015) find that doctoral recipients from the top graduate programs are less likely to have plans to leave the US at graduation, but Brentschneider and Dai (2017) and Kahn and MacGarvie (2018) find no relationship between the rank of the graduate program and actual propensity to remain in the US.

5. In a related study focused specifically on the return intentions of Chinese students abroad, Zeithammer and Kellogg (2013) find that approximately 70 percent of Chinese STEM PhDs would prefer to return to China if offered a salary equal to what they expect to receive in the US but that salary differentials between the US and China keep the majority in the US.

international students. The difference may be related to the fact that Ganguli and Gaulé survey recent doctorates about their plans for postdoctoral study, while Roach et al. survey PhDs about career plans over a longer time horizon. The differences between preferred stay rates from these two chapters call for more research into the career trajectories of US-trained STEM PhDs of foreign origin.

The chapters on this theme raise new questions that may be fruitful topics for ongoing research. One of these is if the stay rates of Chinese and Indian graduates fall, which other countries will take their places as the main sending countries of PhD students who remain in the US to work after graduation? Or will wages rise and draw more native students into STEM fields?

Additionally, if international students stay for postdocs and then go back to their home countries, what are the impacts on US researchers with whom they formed connections during their stay in the US? Will these networks persist over time and give US scientists access to collaborations and new knowledge and innovations being developed abroad?

Finally, given the variety of results about selection and return rates in the prior literature, how can we better measure the ability of students, inventors, and entrepreneurs in order to understand selection effects, as existing data can be coarse (education levels) or may be unreliable if self-reported through surveys?

The next section of this volume addresses the relationship between overall immigration *policy* and innovation. However, a question left unanswered relates policies to the location decisions. How does immigration *policy* affect the stay versus return location decisions of the highly skilled foreign-born who enter the US either as PhD students or on employment-based visas? Also, how do policies that affect the stay versus return decisions of the highly skilled in turn affect future entrepreneurship in the US and in home countries (see the final section of this volume)? All of these relationships remain to be established.

Immigration Policy and Innovation

Immigration and visa policies can have wide-ranging and complex impacts, including effects on innovation. Three chapters in this volume discuss impacts of two immigration policies—one current and one historical—that targeted specific subgroups of immigrants: (1) H-1B visa programs intended to use noncitizens to fill a temporary need for skilled employees and (2) historical quotas aimed at limiting the number of immigrants from particular less-industrialized countries. The main thrust of these chapters is not to comment on the policies themselves but to use them to trace the impact of different kinds of immigration on US innovation.

Prior research (e.g., Hunt and Gauthier-Loiselle 2010; Kerr and Lincoln 2010) has looked at the relationship between immigration and patenting,

but a common critique of such research is that patents only capture the tip of the iceberg, since many innovations are not patented. Khanna and Lee's contribution to this volume (chapter 3) begins to address this lacuna. Khanna and Lee ask how employees on (temporary) H-1B visas contribute to consumer product innovations, measuring innovations as whether a company introduces a new retail product and/or takes an existing product off the market. This kind of product innovation—which they call product reallocation—is typically not related to a patent. Instead, Khanna and Lee's measure is more likely to pick up small, incremental innovations being put to commercial use. It is also one of the only analyses of the impact of skilled immigration on consumer markets.[6]

Since the innovations can be as small as a change in packaging size, one might think that these product reallocations are unlikely to be correlated with the firm's profitability. However, Khanna and Lee show otherwise: these reallocations are highly correlated with revenue growth in the following year. Khanna and Lee then link these innovations to measures of the company's propensity to employ H-1B immigrants, which they measure using the Department of Labor's labor condition applications (LCAs) for H-1B visas, which have been used by others as a proxy for H-1Bs.[7] Khanna and Lee acknowledge that LCAs are more likely to be measuring a *tendency* to use H-1Bs rather than actual H-1Bs employees, since not all Department of Labor–certified H-1B requests are granted by the US Citizenship and Immigration Services Bureau (USCIS; Mayda et al. [chapter 4 in this volume] have obtained data on H-1Bs actually granted). Nevertheless, the relationship between H-1B certifications and product innovation is substantial.[8] This association may not be a causal effect of H-1Bs. For instance, firms wanting to hire H-1Bs may be particularly proactive in pursuing continual change and/or cutting-edge data analytics. However, results on the timing of the effect are at least highly suggestive of a causal effect of H-1Bs on innovation and thus of a possible role that highly skilled temporary immigrants may have in the retail product market.

In chapter 4 in this volume, about H-1B workers, Mayda, Ortega, Peri, Shih, and Sparber have obtained—via Freedom of Information Act (FOIA) requests—data on actual approved H-1Bs instead of using more easily available LCA data. Thus their data represent actual temporary residents rather than temporary visas applied for. This alone is a substantial advance.

Although using quite different data, some of the Mayda et al. results on H-1Bs—while not related to consumer product markets or innovations—

6. One other is Cortes (2008) on the effect of low-skilled immigrants on the prices of household services.

7. For instance, see Kerr and Lincoln (2010) and Ghosh et al. (2014).

8. For instance, controlling for firm and year, using their results, we calculate that a one percentage point increase in the share of certifications (as a percent of employment) is associated with a 22 percent increase in the reallocation rate.

confirm some of Khanna and Lee's findings. Similarities between Mayda et al. and Khanna and Lee include (1) their near-identical estimates that 42 percent to 44 percent of publicly traded companies have at least one H-1B employee; (2) that—among publicly traded firms—higher-revenue firms and larger firms were more likely to utilize H-1Bs; and (3) that there is greater revenue growth in firms with more (new) H-1Bs. They also agree on the prevalent occupational categories of H-1Bs.

Mayda et al. advance what we know about H-1B employees in other ways as well. In their analysis not limited to publicly traded companies, Mayda et al. find increasing concentrations of H-1Bs in a few companies and a few metropolitan areas, which they attribute to the rise of business, IT, and scientific services firms. Their findings on the growth and patterns of H-1B use in these services firms over 13 years are an important contribution to our understanding of how highly skilled temporary immigrants are used in our economy. An important focus of future research should be whether the growth of business, IT, and scientific services firms partially enabled by H-1Bs fundamentally changes US economic innovation and growth and the careers of highly skilled natives.

A final chapter related to immigration policy—chapter 5 by Doran and Yoon—addresses the impacts of the immigration quotas of 1924. This law radically decreased immigration, particularly of low-skilled immigrants from Southern Europe. There are several other contemporaneous articles (mostly working papers) on these quotas, each concentrating on different aspects of possible impacts. Doran and Yoon's chapter starts with a detailed synthesis of this mostly unpublished work. It then applies this quota change to understand how immigration's impact on innovation depends on language commonalities between immigrants and people currently living in a given city. Language commonalities are differentiated from ethnic similarities insofar as foreign-language persistence across generations differed from city to city.

Doran and Yoon find a U-shaped pattern. Innovation is most stimulated by (low-skilled) immigrants arriving in a city if the existing population and the immigrants are somewhat close linguistically (i.e., the distributions of languages in the two populations are not too dissimilar). However, innovation is not stimulated at the extremes, among those who are either linguistically far or linguistically close, and in fact there might be a negative impact on innovation when new immigrants are linguistically far. Note that this innovation is not innovation by the new immigrants but rather innovation by residents of the city who had already been inventors before the quota policy change. The mechanism behind these results is uncertain. The authors argue that perhaps linguistic diversity increases the diversity of ideas and experiences that people communicate to each other, but only if people are still able to somehow communicate with each other. So the optimal amount of linguistic diversity is at neither extreme.

Overall, both policies allowing increased temporary immigration of highly skilled workers through H-1Bs and those decreasing unskilled immigration to particular cities provided the authors with exogenous variation to address the complex interactions between innovation and immigration. In all three chapters, immigrants (at different skill levels and in different historical eras) increased innovation within existing firms and innovations by natives. They also may have contributed to the growth of business and scientific services firms that provide a flexible scientific workforce that can be deployed where needed.

Doran and Yoon provide an intriguing historical study that points toward the need for more research on whether and how inflows of unskilled immigrants may affect innovation in the present day. For example, Cortes and Tessada (2011) show that increases in unskilled immigration increase the labor supply of highly skilled women. Peri and Sparber (2009) demonstrate that unskilled immigration causes natives to specialize in more communication-intensive tasks. Do Doran and Yoon's findings extend to innovation and/or entrepreneurship today? Or are the results in their chapter specific to the historical context? Moreover, is the complementarity between skilled natives and unskilled immigrants documented by Doran and Yoon also a relevant phenomenon for more-skilled immigrants (e.g., H-1B recipients)?

A similar question relates to the other two chapters on immigration policy. To what extent was the growth in business/scientific/IT services firms in recent decades a direct result of the hiring of larger numbers of temporary workers documented by Mayda et al.? And does this joint growth in business services and temporary residents enable companies that hire IT outsourcing firms to be more innovative and/or enable the creation of new STEM entrepreneurial ventures? Khanna and Lee's findings suggest that this may be the case, but additional research is needed to document this more comprehensively.

Immigration and Entrepreneurship

Our understanding of immigration's relationship to entrepreneurship is hampered by a lack of entrepreneurship data. Immigrants have been shown to be disproportionately represented among entrepreneurs, especially in the high-tech sector, thus making important contributions to innovation and economic growth. Fairlie and Lofstrom (2015) and others have documented that immigrant and foreign workers are more likely than US natives to become entrepreneurs in technology and science-based businesses. Kahn, La Mattina, and MacGarvie (2017) found using the Scientists and Engineers Statistical Data System (SESTAT) data that the foreign-born are about twice as likely as nonimmigrants to be engaged in science-based entrepreneurship. Immigrant-founded businesses also appear to be more successful than

native-founded ones: Kerr and Kerr (2016) use the Longitudinal Employer-Household Dynamics (LEHD) database to show that immigrant-founded new businesses grow faster than those founded by natives. However, many of these studies lack complete data on immigrant characteristics, so the question remains: Are immigrants really more entrepreneurial and innovative? If so, is this because they differ from natives in terms of previously unobservable characteristics positively correlated with entrepreneurship? Which characteristics matter most for explaining the immigrant entrepreneurship premium?

Several chapters in this volume seek to address the ways that immigrants and native entrepreneurs differ in the high-tech and science-based business sectors, providing important new insights by documenting significant differences on several dimensions between immigrant and native entrepreneurs. The chapters in this volume significantly contribute to this literature by analyzing rich new data sets on immigrant entrepreneurship.

Chapter 6 by Brown et al. links entrepreneurship to innovation by asking whether there is an immigrant "advantage" among entrepreneurs and business owners in terms of innovation performance measures, particularly in the key area for economic growth of the high-tech sector. This chapter sheds new light on the differences in innovation performance between immigrant- and native-owned firms in the high-tech sector with a much larger database of businesses than has been used in the past. Using the Annual Survey of Entrepreneurs (ASE), a new database from the US Census Bureau, Brown et al. are able to access data on 11,000 owners of 7,400 high-tech employer businesses based on a random sample of all nonfarm businesses. Importantly, these data allow the authors to draw on rich measures of innovation activities in the firms, which make up the main outcomes of interest. While previous research has studied the role of immigrants in the high-tech sector as inventors, employees, or individual entrepreneurs, less attention has been focused on immigrant-owned firms in this sector.

A key contribution of this chapter is using multiple measures of innovation performance by firms, including measures related to product and process innovation, research and development (R&D), and intellectual property. Among their main findings are that—across the board—there are higher rates of innovation in immigrant-owned firms than in native-owned firms in all of these measures. However, in many cases, some of these differences are no longer significant after including controls, especially when accounting for differences between immigrant and native owners in terms of motivation for entrepreneurship, levels of start-up capital, and choices of industry. Higher immigrant motivation for entrepreneurship has been documented by others (including Roach et al., chapter 8 in this volume, discussed below), as have differences in field of study (e.g., see Hunt 2011), and this confirmation of their direct impact on immigrant entrepreneurship is extremely valuable.

The identification of higher levels of start-up capital of immigrant high-tech entrepreneurs as important is both novel and intriguing. This suggests that research into this difference may be a fruitful area for further investigation.

Brown et al. also examine whether the immigrant advantage in innovation varies by education, firm age, and race/ethnicity. While they do not find that this advantage varies by firm age or race/ethnicity, they do find that across the measures, immigrants tend to be more innovative than natives, particularly among owners with less than a bachelor's degree, although even this immigrant-native difference is not significant at standard levels.

Brown et al.'s findings point to important dimensions along which immigrant and native business owners differ and suggest that immigrants may be contributing disproportionately to innovation activities in the US economy. The chapter also raises a set of questions for further research. For example, given the interest in the impact of diversity on innovation (see, e.g., Doran and Yoon, chapter 5 in this volume), do firms with both an immigrant and a native owner have different innovation performance relative to only-immigrant-owned or only-native-owned firms? Also, since the innovation measures are self-reported by firms, are there differences in the accuracy of responses among immigrant and native firms?

Many entrepreneurship scholars have documented the importance of networks for firm performance, yet few papers differentiate between immigrant and native entrepreneurs and ask how their networking behaviors may differ. Chapter 7 by Kerr and Kerr contributes to this literature by examining the networking of immigrant versus native entrepreneurs in a particularly active entrepreneurial context—the CIC (formerly the Cambridge Innovation Center), a technology coworking space that has become the de facto epicenter of the Boston entrepreneurial and innovation ecosystem.

Kerr and Kerr use unique survey data for 1,222 entrepreneurs collected in CIC's three locations in the Boston area and in the first expansion location in St. Louis. They examine three types of questions about networking opportunities asked in the survey: (1) about self-reported perceptions of CIC networking benefits, (2) about the types of networks—including where they networked at CIC—and finally (3) about how often they asked for or received advice external to the firm.

They find that immigrants report higher perceptions of CIC helping their business via networking than natives and also find that immigrants report higher rates of exchanging advice. These results are robust to including many controls. While the size of the immigrants' networks is slightly larger than natives', the difference is not statistically significant.

This chapter opens up a range of further questions and points to the need to collect new sources of data related to the networking behavior of immigrant entrepreneurs. Further data could answer questions such as the following: Do similar patterns hold outside of the CIC setting? How do these differences in networking affect the longer-run performance of the

firms, which might be addressed by linking survey data on networking and/or networking data from sources such as LinkedIn to the actual performance outcomes of the firms?

The final chapter, by Roach et al., examines differences in the extent to which immigrants join start-ups as employees rather than as founders. Examining differences among immigrants and natives in their preferences and actual employment to become entrepreneurial "joiners" has been understudied in the entrepreneurship literature despite their important role—especially in the high-tech sector. As discussed previously, Roach et al. provide evidence on the entrepreneurial preferences and outcomes of natives and immigrants using a unique survey data set of 5,600 STEM doctoral students at US research universities. They then resurvey these students after graduation, which allows them to observe ex-ante preferences typically unobserved by the econometrician. Strikingly, Roach et al. find that while foreign PhD students were more likely than natives to intend to become founders or join a start-up during graduate school, after graduation, of the more than 2,300 working in their first jobs in a US industry in an R&D position, foreign PhDs are *less* likely than natives to either become founders or join start-ups as employees and instead are more likely to work in established firms.

This evidence is important in showing that foreign PhD students have entrepreneurial preferences different from those of native students while in graduate school, which suggests that some of the differences between immigrant and native entrepreneurs in the high-tech sector documented by other scholars—including Brown et al. (chapter 6) and Kerr and Kerr (chapter 7) in this volume—may be related to differences in preferences and intentions observed even earlier during graduate studies. The findings also underscore the important point related to many of the chapters in this volume—that some of the differences observed between immigrant and native students in terms of career preferences and outcomes may be driven by the nature of the selection into immigration and into doing a PhD. In this case, the differences between foreign versus native students in characteristics and preferences documented by Roach et al., such as differences in the tolerance for risk and subjective ability, may explain some of the differences in entrepreneurial preferences. For example, as they note, it may be that the foreign-born who come to the US are less risk averse and are of higher ability than other individuals who do not immigrate, resulting in higher-than-average levels of risk tolerance and ability levels among foreign PhDs. On the other hand, there could also be a different kind of selection among *natives* who decide to do a PhD if those who are more interested in entrepreneurship do not decide to do a PhD. These selection effects could explain part of the observed differences in preferences for being a founder or start-up employee among foreign and native students while they are still in school.

However, Roach et al.'s striking finding that the foreign PhDs are subsequently less likely to pursue their preferred career paths suggests that there

are other factors, such as visa policies or economic conditions, that may be differentially impacting the career choices of foreign and US students. As the authors note, foreign PhDs with founder intentions may be required to seek employment in an established firm rather than start their own company in order to obtain a work visa first. An important caveat is that the Roach et al. sample surveyed in the follow-up survey only includes those individuals who stayed in the US and those individuals whose first position was in industry, so we do not know from these results how *ex-ante* preferences are related to career paths not included in their analysis (in academia or in industry positions abroad).

Thus an open question stimulated by both Roach et al. (chapter 8) and Ganguli and Gaulé (chapter 2) is whether visa policies influence preferences during the PhD as well as postgraduation innovation and entrepreneurship outcomes.

Another open question relates to chapter 6 by Brown et al. and chapter 7 by Kerr and Kerr, as well as chapter 5 by Doran and Yoon regarding interactions between foreign-born and native entrepreneurs. That is, how do collaboration and connections among the foreign-born and natives influence entrepreneurship and innovation activities?

Conclusion

This book offers new information about the many linkages among highly skilled immigrants, innovation, and entrepreneurship. The chapters are grouped according to the themes of return migration, immigration policy, and entrepreneurship. Several links among these themes are apparent. First, several of the chapters have developed new, detailed measures—quite different from those typically used—of both innovation and entrepreneurship and have studied how immigrants and natives differ along these measures. Second, many of the chapters also address *why* rates of innovation and entrepreneurship are different for immigrants and natives—due to preferences and motivations, fields of study or employment, selection of who comes and who remains in the US, and perhaps the increased nimbleness of an enlarged business/IT services sector flexibly staffed by temporary residents. Also, two chapters (3 by Khanna and Lee and 4 by Mayda et al.) suggest that the innovation of immigrants translates into revenue growth.

This volume also shows the key role played by immigrants' networks—from today's high-tech entrepreneurs to the historical importance of language similarities in the context of early 20th-century immigration quotas. Finally, we learn about the important and interrelated roles of the US higher education system and visa policy for attracting and retaining highly skilled foreigners and making it possible for them to engage in entrepreneurial activities. Perhaps the single most important commonality across the three themes of the volume—even when it is not always the explicit focus of the

chapter—is the crucial role of immigration policy in shaping innovation in the US. The ease of obtaining work visas after graduation for highly skilled STEM PhDs may affect their location choices as well as what type of job to accept if they stay, and the number and composition of immigrants admitted shapes the direction of innovation and entrepreneurship in the US.

Together, the chapters in this volume make important contributions to our understanding of immigration, innovation, and entrepreneurship. Of course, many questions remain unanswered, and in this introduction we have tried to highlight some of the new questions provoked by the findings contained in this volume. We hope that researchers will be stimulated to seek answers to these questions.

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